Australia 2012 imagine cup™ by Microsoft®

IMAGINE CUP 2012 WORLDWIDE FINALS

6–10 JULY, 2012 | SYDNEY, AUSTRALIA

World's Premier
Student Technology Competition

Coca-Cola Microsoft Studios NOKIA Connecting People Windows

Microsoft

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IMAGINE A WORLD WHERE TECHNOLOGY HELPS SOLVE THE TOUGHEST PROBLEMS...

Australia 2012 imagine cup™ by Microsoft®

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***Bold** denotes 2012 Finalists

Message from **Steve Ballmer**

Hello,

On behalf of Microsoft, welcome to the 10th annual Microsoft Imagine Cup Worldwide Finals!

This week the world's brightest students showcase their talents and passion for using technology and software to solve real-world problems.

We are excited to host the Imagine Cup Worldwide Finals in Sydney. Sydney is a city that embodies cultural diversity, innovation and passion — all qualities that make the Imagine Cup so unique.

My hope is that Imagine Cup sparks your creativity while providing you with rich and new cultural experience. From Spain to Brazil, Japan to India, Korea to France, Egypt to Poland, the United States and now to Sydney, Imagine Cup is a global adventure.

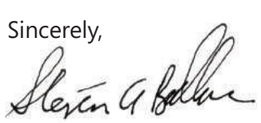
This year you were invited to "imagine a world where technology helps solve the toughest problems." This theme generated many innovative solutions that aim to tackle some of the world's most desperate issues. We collectively face not only tremendous challenges, whether economic, environmental, healthcare or disaster response, but a tremendous amount of opportunity as well. I believe the power of technology harnessed by creative minds like your own will be instrumental in solving problems and seizing opportunity long into the future.

You are now part of a community of young innovators destined to make a huge impact. Teams before you have gone forward to build businesses and nonprofits and ultimately make their mark on the world. Along these lines, an Irish team from last year developed a clever device that plugs into a car's electronics system and monitors for safe driving. Today, they are managing a startup with funding support to commercialize the device and ensure safe driving around the world. A Croatian team developed a Kinect-based solution for on-premise and remote physical therapy for children. This software has the ability to monitor a child's exercises to ensure they are being completed correctly and then provide statistical analysis to the therapist.

I am excited to see how products like Xbox Kinect, Windows 8, Windows Azure, Windows Phone and Bing are providing rich platforms for this year's teams to achieve breakthrough results.

Your energy and brilliance inspire us all, and the technology you build will make an incredible impact on the world.

Sincerely,



Steven A. Ballmer
CEO
Microsoft Corporation

Message from **S. Somasegar**

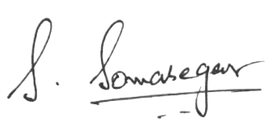
I am very excited to be hosting the tenth annual Imagine Cup Worldwide Finals in Sidney, Australia. The Australians are a creative bunch of folks having invented a long list of world changing technology such as the black box flight recorder, the electronic pacemaker, the electric drill, medical ultrasound scanning, and the Cochlear bionic ear implant. A country filled with such resourceful and industrious people is the perfect backdrop for this year's finalist competition.

Each Imagine Cup final continues to blow me away with the talent, passion and technology that I get to experience. In addition, it is a fantastic forum for students to show what is possible with technology, to experience a vastly different culture from their own and possibly make some life-long connections at the same time. This year's participants will get to experience the world's smallest continent filled with natural wonders from the Great Barrier Reef to kangaroos, from its 1500 species of spiders and the deadliest of jellyfish, to the largest population of wild camels, Australia is a country filled with wonders found nowhere else. Like Australia this year's Imagine Cup is sure to be filled with wonders both big and small that you won't see anywhere but here.

The Imagine Cup showcases the dreams, ideas and creative energy of young leaders in technology and gives them the exposure, resources, and connections to focus their passion into projects that benefit the society of tomorrow. This year we again invite students to "imagine a world where technology helps solve the toughest problems". This theme urges finalists to tackle some of the world's most complicated issues where solutions are desperately needed, now more than ever. To that end, we have two new awards this year – the Environmental Sustainability Award and the Health Awareness Award both sponsored by Coca-Cola to inspire student focus on these critical and far reaching challenges.

This competition asks students to imagine a better world empowered by technology, created by their talent and innovation. Microsoft supports this vision through this competition as well as our student program, Microsoft DreamSpark, which provides professional level tools that we hope will inspire students to explore the power of software and encourage them to forge the next wave of software-driven breakthroughs. Microsoft DreamSpark makes available, at no charge, a broad range of development and design software for download to millions of high school and college students around the world.

This year marks the tenth anniversary of Microsoft's Imagine Cup. The first competition held in 2003 in Spain had 1,000 students from 25 countries participate. Since then 1.65 million students in 190 countries from every corner of the globe have had the chance to compete in the Imagine Cup. Every year the energy, enthusiasm, and learning just keeps growing. This year promises to be another round of tough competition filled with ingenious entries. I look forward to experiencing the creativity and brilliance of our group of Worldwide Finalists who beat out some serious competition to make it here. Their work will inspire us all to see how technology can make a lasting change for the better in how we think, work, and live. Please join me in welcoming the finalists of Imagine Cup 2012, and in wishing them the very best in all of their future endeavors.



S. Somasegar
Corporate Vice President, Developer Division
Microsoft Corporation

Message from **Walid Abu-Hadba**

Welcome Imagine Cup 2012 World Finalists! It is an honor for Microsoft to host you in Sydney for the Worldwide Finals of Imagine Cup 2012. This is the 10th year anniversary of Imagine Cup and a wonderful opportunity for you to showcase your innovation. I hope that you are ready to compete for the title of World Champion in your chosen competition.

The Imagine Cup demonstrates Microsoft's continued commitment to inspire the next generation of technology leaders to apply their imagination, passion, and creativity to solving real world problems and having a lasting impact on the world.

The mission of the Imagine Cup is to make the world a better place using the power of software. In every category of the Imagine Cup, you have the opportunity to transform the world for the better through technology.

The competition will be tough. By reaching the finals of the world's premier student technology competition, you have already shown yourself to be one of the world's most gifted technology students. To me, each of you is already a winner and I congratulate you on your remarkable achievements.

Best of luck to you in the Imagine Cup 2012 Worldwide Finals!

Walid Abu-Hadba

Walid Abu-Hadba
Corporate Vice President
Developer & Platform Evangelism Group
Microsoft Corporation

Message from **Pip Marlow**

Hello and welcome to Sydney!

I want to congratulate each and every one of you on making it this far. The 2012 Imagine Cup saw over 250,000 students enter from all over the globe, so to be a part of the Worldwide Finals is, in itself, a colossal accomplishment.

I know each of you has a great deal happening outside of the Imagine Cup – whether that be study, work, family, sport or any other worthy cause – so I want to recognise and thank you for taking on this extra workload, and for dedicating yourselves to this project. Of course, this is not just any project. You have to have more than simply an interest in technology to get this far – you have to have a genuine passion for improving the state of the world, and to me, there is no greater human quality than that. To have such tenacity, passion, and acumen at so young an age is a true asset – for you and for our future.

Australia is a country rich in natural resources, with a diverse climate and abounding natural life. Though people may think of beaches and barbeques, red dust and salt plains when they think of Australia, it is innovation that sews the thread through our nation. Innovation is in our DNA and millions of people the world over use Australian innovations every day – from the cochlear implant to the black box flight recorder, from the medical breakthrough of spray-on skin to the world's first pacemaker. Here, innovation is valued and celebrated, and it is for that reason that I am excited to welcome you here for the Imagine Cup.

I look forward to continuing to build a relationship between you and Microsoft well into the future, as we partner to create a better world through innovation. The story does not end on 10 July. Your work, your ideas and your drive must continue, no matter the result here in Sydney. With time, and with our partnership, I know we can build a better future for the next generation and for the developing world.

I want to thank you for the work you have done and for your commitment to making a difference, The Imagine Cup is, as much as anything else, an opportunity for us to recognise and celebrate you, our finalists, so enjoy the journey and your time here in Sydney. Thank you, good luck and I will see you at the finals.

P Marlow

Pip Marlow
Managing Director, Microsoft Australia

Message from **Moorthy Uppaluri**

Imagine Cup Finalists,

Welcome to the Imagine Cup 2012 Worldwide Finals, and welcome to Sydney! Let me be one of the first to formally congratulate you for representing your country in the 10 year anniversary of this globally recognized competition.

Ten years ago, the Imagine Cup started with a simple, yet powerful idea that the combination of student innovation and technology can change the world. And every year, we have seen students think and create amazing solutions that helps solve some of world's toughest problems. We have seen a number of solutions this year as well which will have significant impact to make this a better world.

Over the last few months, I've had the privilege of meeting hundreds of Imagine Cup competitors, and have already seen solutions that inspire, amaze, and have potential for significant impact in the lives of people around the world. Your innovations will help address the challenges of Universal Education, Disaster Response, Accessibility, Environmental Sustainability and so much more. Some of the key trends we're seeing across all of the teams include a real focus on cloud-technologies, mobile, social, and gaming technologies in ways that are truly inspirational.

Competing in the Worldwide Finals is an important lifetime experience – so make the most of it! Plan to spend a great deal of your time connecting with students from all over the world: share information, share cultures, share stories but make sure to… connect. Take advantage of the learning sessions we've put together for you across business and technology, and enjoy Sydney!

Most importantly, let the Imagine Cup be a beginning for you, and for the world. As our world's future innovators and technology leaders, our planet will look to you to lead the way on solving some of our greatest challenges. Lead with your mind but also lead with your heart, as both are required to make a difference. Ask yourself, your team-mates, and your new friends, "How will we continue to take this important work forward in the world, together?"

Thank you for your important accomplishments, and I look forward to spending time with you this week!

Moorthy Uppaluri
General Manager, Academic Programs
Microsoft Corporation

Welcome to the Imagine Cup 2012 Worldwide Finals in Sydney, Australia!

As the world's premier student technology competition, the Imagine Cup is one way Microsoft encourages students around the world to apply their imagination, their passion, and their creativity to technology innovations that can make a difference– today!

Now in its tenth year, the Imagine Cup has inspired a generation, with 1.65 million students from over 190 countries participating in the competition. Since last year, students from 29 new regions and countries, including Haiti, Rwanda, the Republic of Kosovo and Myanmar, have registered for the competition.

With the 2012 Theme: "Imagine a world where technology helps solve the toughest problems." as their guiding light, we invited students around the world to harness their creative energy, their technical know-how, and most of all, their personal passion to step up to the challenge.

Competitors chose to compete in any of the following competitions and challenges: Software Design, Game Design: Windows/Xbox, Game Design: Phone, IT Challenge, Kinect Fun Labs Challenge, Windows Azure Challenge, Windows Metro Style App Challenge and Windows Phone Challenge.

The Imagine Cup was founded in 2003 and has traveled the world westward from Barcelona, Spain to Sao Paolo, Brazil to Yokohama, Japan to New Delhi, India to Seoul, South Korea to Paris, France and down to Cairo, Egypt, up to Warsaw, Poland, west to New York City, USA and this year, down under to Sydney, Australia. The "cup" itself, a trophy first awarded in 2003 when Software Design was the only category, has spent time with the Software Design champions in the United States (2003-2004), France (2004-2005), Russia (2005-2006), Italy (2006-2007), Thailand (2007-2008) Australia (2008-2009), Romania (2009-2010), Thailand (2010-2011), and Ireland 2011-2012. This year the cup will travel from Ireland to Australia and will be awarded to the winning Software Design team on 10 July, 2012.

WELCOME FROM THE IMAGINE CUP TEAM

We're glad you're here!

Welcome to Sydney, Australia and to the Imagine Cup 2012 Worldwide Finals! Just like you, we have been preparing all year for this moment and working on creating an unforgettable experience. We have enjoyed connecting with you through the forums, newsletters, Facebook, and Twitter and meeting some of you at your Local Finals events around the world. We are inspired when we learn about why you chose to compete in the Imagine Cup. And now, we have the chance to meet each of you in person.

You have worked very hard to be here today. We asked you to research, brainstorm, design, and develop potential solutions that address the toughest challenges facing our world today. You imagined a world with less poverty, cleaner water, less hunger and disease, greater survival prospects for mothers and their babies, better educated children, quicker disaster relief infrastructure, equal opportunities for all, and a healthier environment; a world in which developed and developing countries work in partnership for the betterment of all. You skillfully stepped up to the challenge!

We know you will give your best while competing at the Worldwide Finals so take the time to get to know your fellow Worldwide Finalists; share ideas, exchange e–mails, Tweet about the experience, "friend" each other on Facebook and most importantly, forge new friendships. In addition to all of the events we have planned, take time to experience the awe and excitement of Sydney.

Please make sure to introduce yourself to us over the next six days. Congratulations on your achievements and welcome to Australia!

Good luck!
The Imagine Cup Team

THE 2012 IMAGINE CUP TEAM

Pictured: Mark Kola, Ashwin Karuhatty, Luca Peruzzo, Ali Driesman, Justin Barsotti
Not Pictured: Andrea Harrison, Catherine Cormoreche-Meljac, Jennifer Ritzinger, Mary Corrales-Diaz, Michelle Fleming, Moorthy Uppaluri, Lisa Harper

Back row: Steven Miller, Paul Randazzo, Fran Barlow, Lawrence Crumpton, Sarah Vaughan, Jeff Flanagan
Front row: Matthew Coleman, Sophie Byrne, Ben Tan, Louisa Chu, Clare Chamberlain

HISTORY OF THE IMAGINE CUP

2003—Barcelona, Spain

Theme: *"Link between people, information, systems, and devices, using Web services and .NET as the springboard."*

2004—Sao Paulo, Brazil

Theme: *"Imagine a world where smart technology makes everyday life easier."*

2005—Yokohama, Japan

Theme: *"Imagine a world where technology dissolves the boundaries between us."*

2006—Delhi, India

Theme: *"Imagine a world where technology enables us to live healthier lives."*

2007—Seoul, South Korea

Theme: *"Imagine a world where technology enables a better education for all."*

2008—Paris, France

Theme: *"Imagine a world where technology enables a sustainable environment."*

2009—Cairo, Egypt

Theme: *"Imagine a world where technology helps solve the toughest problems facing us today."*

2010—Warsaw, Poland

Theme: *"Imagine a world where technology helps solve the toughest problems."*

2011—New York, United States

Theme: *"Imagine a world where technology helps solve the toughest problems."*

EVENT SCHEDULE

FRIDAY, JULY 6	Arrivals
	Opening Ceremony
SATURDAY, JULY 7	Competition Day 1
	2nd Round Announcement (Software Design and Game Design)
SUNDAY, JULY 8	Competition Day 2
	Finalist Announcement (Game Design)
	Game Design Finalist Presentations
	Finalist Announcement (Software Design)
MONDAY, JULY 9	Software Design Finalist Presentations
	Cultural Afternoon
TUESDAY, JULY 10	Learning Sessions
	Student Showcase
	World Festival Awards Ceremony
	Farewell Party
WEDNESDAY, JULY 11	Departures

SOFTWARE DESIGN

The flagship Software Design competition encouraged student teams from around the globe to step up to the challenge and propose creative technical solutions.

These finalist teams are all winners who have proven that their technical ability and innovative ideas are worthy enough to bring them to Sydney, Australia. Here they will show the world their solutions and proudly represent their country in the Imagine Cup Worldwide Finals.

For the students on these teams, the Imagine Cup Finals is a huge step on their way to a great future. Many of them will work at major corporations, begin a non-profit organization, integrate their solutions into key programs for government agencies, or start their own companies. One thing is certain – more than one of these teams is definitely on the road to changing the world.

Learn more about the innovative technical solutions that the 2012 Software Design finalist teams created to change the world.

NakamaTeam

Team Members:
Saïd MOUHOUN
University of Science and Technology - Houari Boumediene
Ferial Touati
EHEC

Mentor:
Arezki Youyou

PROJECT: Brainiac

Brainiac is a hardware/software application that helps simplify technology use for individuals who are physically disabled and unable to use a computer without assistance.

So how does it work? The user controls the computer with their thoughts. Our hardware collects and amplifies electric signals from users' brains. Our software then processes the information by filtering and removing the noise from the signal and translates the information in to useful data. The Brainiac application then uses this data to control the computer through actions like moving the mouse cursor to the right or the left. We have also built also a SDK for third party developers who can develop new applications and publish them on our BRAINIAC APP STORE.

Technology Used: Windows Presenation Foundation (WPF), Windows 8, SQL Server, MATLAB

Inspiration: People in our society prefer to ignore everything they don't qualify as normal and in effect marginalize disabled people. Our inspiration is a friend of ours who was in a car accident and became quadriplegic. In addition to how his life has changed, people around him treat him differently despite his knowlege and abilities.

BoddyMusic

Team Members:
Guillermo Diéguez
Santa Teresa de Jesús
Matías Sanchez
Instituto San Alberto
Patricio Pérez
Santa Teresa de Jesús
Pedro Tadeo Mutti Pojatti
Instituto San Alberto

Mentor:
Guillermo Bellmann

PROJECT: BoddyMusic

"Boddy Music: social inclusion of people with disabilities"

Boddy Music is a virtual classroom that specializes in music education for people with disabilities. It aids their social integration by providing them the opportunity to express themselves through music. Utilizing the Kinect sensor, it provides users the ability to create music through simple body movements. Boddy Music also provides desktop and mobile applications enabling users to easily edit and share the music they create. All of this is supported by a web platform built on Windows Azure where registered users can access the music uploaded by other users.

Technology Used: Kinect, Windows 7, Windows 8, Windows Azure, Windows Phone

Inspiration: We have fun creating and love what we do. That's what pushes us to develop a creative community that grows and reinforces the social engagement provided by the Boddy Music experience.

Future Plans: Our goal is to develop a context of artistic exchange. Connecting the main social webs to the Boddy Music web page and providing the ability to rate or comment other user's creations.

mLab

Team Members:
Arshavir Karakhanyan
State Engineering University of Armenia
Narek Hayrapetyan
State Engineering University of Armenia
Narine Yeghiazaryan
Yerevan State Medical University

Mentor:
Zhenya Karapetyan

PROJECT: Clean H20

Clean H2O enables people to check water quality anytime anywhere and get up-to-date statistics about water availability, quality standards, and waterborne diseases. The solution is comprised of a small device that checks water quality parameters and transfers the data to a Windows Phone through Wi-Fi. The received data is analyzed and stored in the cloud, generating worldwide statistics on quality and accessibility of water. The tested parameters include TDS (Totally Dissolved Solids), pH, and ORP (Oxidation Reduction Potential) values, based on which the system provides recommendations on allowable uses of the water. In addition, the project promotes awareness about available water sources and "areas-at-risk", as well as health consequences that usage of contaminated water may cause. We have come up with efficient ways of data collection using microwork – the solution can be provided to micro – workers all over the world who will be paid for collecting water quality information without a need to deploy expensive lab equipment. Donors and water organizations should be interested to contribute as it significantly facilitates collection of statistical data.

Technology Used: Bing, Windows Azure, Windows Phone

Inspiration: There is a water crisis today. But the crisis is not about having too little water to satisfy our needs. It is a crisis of managing water so badly that billions of people - and the environment - suffer badly. Hence, we decided to suggest a solution that enables people to test water quality and get up-to-date statistics about water sources, quality standards, and waterborne diseases. We want people to be aware about the quality of water they drink!

Future Plans: We will form partnerships with organizations that share our vision, including donors and international NGOs. At the same time, we plan to further advance our solution and improve the quality of testing as well as investigate opportunities for detection of specific contaminants. Once the partners are identified, a pilot will be implemented in one or two selected location(s) to test our business model in practice based on results of which a larger scale implementation will become possible.

StethoCloud

Team Members:
Hon Weng Chong
University of Melbourne
Kim Ramchen
University of Melbourne
Mahsa Salehi
University of Melbourne
Andrew Lin

Mentor:
Jim Black

PROJECT: StethoCloud

At Team StethoCloud, we envision a world where childhood pneumonia can be solved with the use of readily available and low-cost technology. Pneumonia has been labeled as the "forgotten killer of children" due to a lack of attention and exposure. We hope that our project will not only provide an innovative solution to combat pneumonia, but also raise the profile of this disease in the mindset of the general public. We have built a Windows Phone application and a digital stethoscope accessory which transmits clinical data and breath sounds to Windows Azure. The server back end then calculates the likelihood of pneumonia (and other respiratory diseases) and the application outputs a recommendation for medical care. Pneumonia is an infection of the lung, causing a host of clinical symptoms, including fever, cough, chest pain and difficulty breathing. It is highly curable with antibiotics at the disease's early stages, but if not treated promptly, can rapidly cause death. 2 million children die of pneumonia every year (more than AIDS, malaria and measles combined), making it the single biggest killer of children worldwide. According to the World Health Organization, the key to solving this problem lies in having medical access and getting an early diagnosis. Pneumonia has traditionally been notoriously difficult to diagnose, StethoCloud automates this process by using the latest Windows Phone technology combined with a machine learning Windows Azure backend. With the proliferation of smartphones in developing countries, we believe that StethoCloud has the potential to drastically reduce the access barriers to medical care and reduce overall child mortality from pneumonia.

Technology Used: Windows Azure, Windows Phone

Inspiration: Many developing countries lack the resources needed to adequately diagnose and treat pneumonia due to poor healthcare systems and lack of a trained healthcare workers. What most developing countries don't lack are mobile phones and we believe through the use of mobile technology and cloud-powered artificial intelligence we will be able to replicate the abilities of a trained physician to diagnose pneumonia at its earliest stages and thus reduce the mortality and morbidity of childhood pneumonia.

FutureTorch

Team Members:
Mohammed AL Qanea
AMA International University
Ibrahim Alrabeh
AMA International University
Ahmed Radwan
AMA International University
Amin Ali
AMA International University

Mentor:
Moahmmed Sabbah

PROJECT: L.I.G.H.T.S.

The energy used to light up highways is one of the largest consumers of electricity in our society today. Our project represents a solution that will reduce and save electric energy used to light up highways by almost 91%. How? LED Intensity Grid Highway Tracking and Surveillance System "L.I.G.H.T.S." is a system that will control the way the lights on the highways operate using sensors that will detect motion and objects at a certain grid; and will switch the LED Street Lamp Lights on when needed, and off when not.

Technology Used: Ultrasonic sensors, LED lights

Inspiration: One of the biggest problems today is the amount of energy that is wasted. Althought much research and development has been performed to avoid this issue, it seams like the problem is inevitable. We have adapted to a lifestyle that reinforces this pattern. We focused on an opportunity is to reduce the amount of electric energy used without requiring a lifestyle change of the population.

Engine

Team Members:
Aieman Siddique
American International University - Bangladesh
Mahmood Khalid
Bangladesh University of Engineering and Technology
Mahenaz Chowdhury
North South University
Mohammad Zunayed Hassan
American International University - Bangladesh

Mentor:
Emroze Emroze

PROJECT: Annapurna

At this moment, 850 million people are fighting a life or death battle against hunger. Every year, six million children lose that battle. Humanity has eradicated smallpox, gone to the moon, and connected the world into a single communication network via the Internet. But it has yet to solve hunger. The problem is immensely challenging, yet the solution is simpler than we think. Research institutes have developed seeds that can grow in the harsh conditions present in famine afflicted areas. But the seed has to be chosen according to the soil. And the amount and type of fertilizer needed for optimal production depends on the type of seed and the soil composition of the particular area. Most farmers are unaware of this, and are hesitant to try unfamiliar techniques as their entire livelihood depends on it. Annapurna puts this life saving information into their hands. It maps out agro-ecological zones using soil, seed and fertilizer data, and provides farmers information specific to their location. Farmers who are wary of using new seeds will be told about the exact steps they need to take starting from seed plantation up to the harvest. The results are nothing short of astounding. Not only will this information prevent crop failure, but it will increase production by up to 70%; saving millions of lives. When we take into account that this increase will take place for agricultural land everywhere, the potential impact becomes truly revolutionary. Annapurna also tackles the other great problem facing humanity, environmental degradation. Worldwide, use of excess fertilizer has and is doing irreparable damage. If farmers know the exact amount of fertilizer needed, the problem can be overcome. In the next 40 years, the world will need the food produced over the last 12,000. Annapurna is a voice of defiance and unflinching ambition in the face of these monolithic challenges that threaten the very survival of the human race. It is the promise of a better world.

Technology Used: Bing, Windows 7, Windows Azure, Windows Phone, MS SQL, Windows Communication Foundation, ASP.Net, Sharp Map

Inspiration: Almost 8% of those stricken by the plague of world hunger are from Bangladesh. Ever since its birth our country has often been associated with images of destitution and stark poverty. Famine and frequent natural disasters have made us a poster child for starvation. Our drive to make this project a success came from a deep desire to change that perception. It would be poetic if the solution came from here. We want to show the world that we are not just victims, but that we too are pioneers.

Future Plans: We are expecting to work jointly with NGOs who are involved in the production and dissemination of quality seeds. They already have in place the infrastructure needed to get our project up and running. All an employee will need is a bicycle and a Windows Phone, and they can easily go around villages providing farmers with the services of Annapurna.

Make A Sign

Team Members:
Antoine Trippaers
Haute Ecole Rennequin Sualem, Inpres
Nicolas Bertrand
Haute Ecole Rennequin Sualem, Inpres
Julien Rousselle
Haute Ecole Rennequin Sualem, Inpres

Mentor:
Cécile Moitroux

PROJECT: Make A Sign - Another way to learn a new language

Make A Sign was born from observations of the lack of interactivity in sign language learning. Indeed, there are currently different means to learn sign language such as teachers, documentation, websites, DVD or video games. However, these solutions cannot be used to practice physically and may discourage many people. With the help of the "CMAP Montegne, Belgium", a signing center, our team has decided to develop a piece of software that completes the usual tools. We have developed an interactive application that enables people practice by reproducing signs in a funny way. Our application uses the Kinect SDK to obtain the current hand and head positions. After that, the Kinect's images are computed to determine the sign made by the user. This is possible with the help of our image processing library using "OpenCV" created by Intel. Finally, the user's hand is compared to signs in our Windows Azure database to find the matching sign. The learning is completed by a sign lexicon application for Windows Phone. In this way, the user is able to consult our sign database everywhere.

Technology Used: Kinect, Windows 7, Windows Azure, Windows Phone

Inspiration: Currently, there are around 400,000 deaf people in Belgium. The severity of their hearing impairment can range from mild to total deafness. In Europe, this number rises to 15,000,000. If expand our view to the global population, there are approximately 300,000,000 deaf people. And they need to communicate with those in their lives who are not hearing impaired. Many people are affected by this problem. A better way to learn sign is possible.

Future Plans: In the future, our solution will be improved with an ASP .NET website which will provide a community aspect to our project. On this website, users will be able to discuss on forums, watch and rate the sign videos or consult statistics. With Silverlight 5, recognition will also be possible. If we think a little bit further, we can imagine that our application could be adapted to real-time translators on Windows 8 and Windows Phone, Xbox games and many more!

SPU Team

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Mentor:
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PROJECT: ICU

Our project is designed to help with orientation and movement in space for those persons who suffer strong or permanent blindness. The system uses a Kinect sensor, as cheap RGB camera and depth sensor. Information about colors and distances in front of the person who uses it are transferred to the skin below the elbow using a matrix of vibrating electro-motors, implemented as flexible cotton surface. Our application, which runs on any Microsoft Windows PC (including tablets), does the calculations with images and distances required to achieve better results. The user can get a real 2D representation of the space in front of him transferred through sense of touch rather than through his eyes. If we consider property of the brain know as neuroplasticity, we expect that a person can completely rely on its sense of touch in order to get a picture of space in front of him based on these vibrations on his skin.

Technology Used: Kinect

Inspiration: The father of one of our team members is blind. Our team member is a really talented designer and he told us that he would like his father to see all the great things that he designs. Once we told him about the Kinect sensor he immediately asked if we could do something for his father. The idea was born. It evolved into complex system that leverages all the power that the Kinect sensor offers. His father still can't see all the details of his beautiful designs but we hope to make that happen one day.

Future Plans: Imagine Cup is only the beginning. We hope to make vibrating surfaces with higher resolution, to improve image conversion algorithms for optimal object distinguishing characteristics and to make the system more ergonomic by providing an even more compact industrial design.

Digital Mangue

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PROJECT: FirstCare System

First Care System monitors patients in real time, which can enhance the work of medical teams by using devices that capture and process the vital signs immediately and sends the information through a common wireless network. FirstCare System is a modular software that uses sensors, embedded technology, Windows 7 and 8, wireless network communication and Windows Phone technology to optimize the performance of medical staff in emergency rooms or any other situation in which urgent medical care is needed. This is achieved by collecting and monitoring vital signs and symptoms of patients in real time and displaying such information in order to help physicians and nurses to monitor the evolution of each patient, thus the system supports them in decision making regarding the medical procedures and overall medical care.

Technology Used: Windows 8, Microsoft Health Vault , Windows Phone, Arduino, Windows Presentation Foundation, ASP.NET, Sensors, Windows Azure

Inspiration: We are driven by the desire to create something that will make a difference in people's lives. We are usually concerned about getting a good education, making money, having a successful career, making friends , buying a house and so on. These are very important things indeed, but when it comes down to the very essential things in life , health is undoubedly at the top of a very short list of priorities.

Future Plans: We are setting up a website to sell a subproduct of our project so we can capitalize our startup company. Besides that we will try to partner with established companies to make our way into the market. Great things are still to come as we evolve as a team and as a startup company.

K-Vision

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PROJECT: C-Path

C-Path helps the visually impaired to navigate more easily in their surroundings by safely avoiding obstacles through a Kinect and smartphone navigation system. The innovative and consistent approach is based on a Kinect and Windows Phone core combined with a robust and scalable back-end. C-Path represents an end-to-end solution which will allow consumers to purchase it from a store and start using right away!

Technology Used: .NET framework, Kinect, Windows Phone, Microsoft SAPI, Bing

Inspiration: Besides the purely technical challenge what inspired us is the belief that technology has the power to change people's lives for the better; our focus is on helping the visually impaired.

Future Plans: We are planning to continue developing this project in Bulgaria with the help of sponsors and Microsoft Bulgaria. We are going to be getting real feedback from the Blind People's Association in Bulgaria. Beyond this, our plans involve working on an international level.

Greeni

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PROJECT: Greeni Project

Greeni solution was developed to reduce the effects of greenhouse gas emissions by managing electrical consumption only when it's needed. Various sensors such as Kinect and Phidget are used to detect when people were in the cubicle area and decide whether to turn the lights on and off or control the fan used to supply the amount of fresh air to the area. Information about these events is stored in SQL Azure and can be consumed by Windows Phone application via web services.

Technology Used: Kinect, Windows Azure

Inspiration: Our project was originally inspired by Autodesk's Project Dasher, which was designed to gather information about the occupancy of office spaces, and was driven by our desire to do everything in our power to help to combat global warming by reducing greenhouse gas emissions. Using intelligent sensors to monitor occupancy in order to reduce electrical consumption and ultimately help combat global warming.

Future Plans: We have certain steps that we would like to accomplish after Imagine Cup. First of all we will continue running the system at the George Brown College lab. Secondly, we will install the Greeni system in a private company to verify the results that we received from the pilot installation in the lab. From technological perspective we will move the application logic to the cloud where we can control and process large amount of data.

Lifeware

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PROJECT: IntegraKinect

IntegraKinect is a software that works with Microsoft's Kinect sensor to allow people with cerebral palsy to use computers in a non-traditional, easy to use and effective manner, giving these users the opportunity to learn, play, chat, work or use a web browser like everyone else. IntegraKinect includes a number of tools that gives its users control of the computer and its applications without the need of external assistance. The Kinect sensor is used to detect movements and gestures as well as voice and sounds, to later map these inputs from the user into actions in the computer, thus allowing the user to control the computer depending on his or her capabilities. Our philosophy is to optimize the abilities of each user, and therefore we use the Kinect sensor to detect interactions such as a voluntary movement, a voice command, or other, which can be used to trigger an action on the computer through IntegraKinect. The user can then navigate between the different tools of our software, using them one at a time. Considering the physical limitations of the target users, this architecture increases the level of user interaction, creating an easy-to-use and efficient software. IntegraKinect is completely customizable where every movement or gesture can be trained and calibrated to interact with the computer. We at Lifeware have a dream: that all children with cerebral palsy have a chance to be integrated in society. Though users will have to buy the hardware, they will be able to use the software, the solution, at home.

Technology Used: Kinect, Windows 7

Inspiration: IntegraKinect allows us to continue working in improving the quality of life for the disabled. We imagine a future where everyone has the same opportunities for education, employment and social integration. We imagine a life where the disabled are not defined by what they cannot do, but where they have access to tools that focus on and function because of what they can do. In creating IntegraKinect, we create a new life for the disabled; we create a new life for those with cerebral palsy.

Future Plans: Lifeware will continue development of IntegraKinect with the hope of improving computer access and integration of those suffering of cerebral palsy. After the Imagine Cup 2012, we will improve our new solution and we will begin to implement it in Rehabilitation Centers for the disabled in our country Chile, to later expand overseas. Our mission is to provide our solution at the global level and help millions of disabled people. Imagine Cup provides us an incredible opportunity to achieve this.

Xight

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Mentor:
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PROJECT: Xight

Xight is an image-recognition based, low-cost eye tracking system. It uses the captured images of human eyes to calculate the direction of users' gazes. With the algorithms and a well-designed UI, Xight enables disabled people with upper-limb paralysis, who could use computers before, control computers on their own. As a result, Xight can bring them the pleasure of communication and getting information.

Technology Used: Windows 7

Inspiration: There are hundreds of thousands of disabled people with upper limb paralysis in the world. They long to join the information age. They long to use computers to work, play and communicate. And they long to make a contribution to the world they live in. We want to help the disabled merge into the information age and increase their pleasure and confidence as a result.

Future Plans: We are planning to manufacture our eye tracking system to enable the disabled to use a computer. We hope our system can make their life much better and easier.

e-soft

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PROJECT: Evolve Safely

Evolve Safely enables real-time monitoring of the environmental settings in industrial areas to help maintain an adequate living environment for local populations and help administrative authorities address environmental threats.

Many less-developed nations have begun a shift towards industrialization through the exploitation of their natural resources such as minerals, natural gas and oil. E-Soft wants to support governments , international agencies and industry in the move toward industrialization while preserving the environment. Evolve Safely allows you to prevent pollution and limit the potential damage of industrialization by a real-time monitoring of key elements of the environment.

Technology Used: Windows Azure, SQL Azure, Windows phone 7, Open Data Protocol, WCF Data Services, WPF / Metro Style Application, ASP .NET MVC 3, Bing Map, SMS, Entity Framework, Linq

Inspiration: As young people, we are responsible for the world of tomorrow that we will live in and hand down to our children. We have engaged in helping the authorities and leaders today find the best solutions for a better world that will create both good life and good health.

Future Plans: We will create our own business, work with governments for sustainable development and share our knowledge of technology with Ivorian and African youth.

Team Spectrum

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PROJECT: Indoor Vision

Indoor Vision is mobile solution designed to improve indoor navigation blind and visually impaired people. The solution is developed for Windows Phone 7 using Windows Phone 7.1 SDK. The user fastens the mobile device to his hand with a specifically designed armband. When the application starts, user's gestures and motions are analyzed using accessible sensors - accelerometer generates user gestures data. With the gyroscope we calculate user's motions. Unfortunately, raw data read by motion sensors is full of noise so we found it necessary to develop complex mathematical formulas to predict and measure the user's moves with very high accuracy. The computations are processed in real time on the device itself. We are focused on code optimization and algorithm speed since we have one core processor on disposition. Since we are talking about blind people, who are not able to interact with the application through the display, we developed a special voice module that transmits all information to sound. That way the user receives all relevant information's and can easier navigate in indoor spaces. Other than providing voice information, our Indoor Vision voice module can recognize voice comands from the user. This way the user is able to manage the application in a rather simple and intuitive way. Arriving at a closed space user starts the application, which then analyses the space and browses for special markers that contain the information and all of the possible routes, and that way visualizes the space itself and the possibilities of movement. A marker can be a picture on the wall, nameplates on doors, an advertisement or a 2D object. There is no need for additional space modification, existing resources are leveraged and the implementation costs are minimal.

Technology Used: Windows 8, Windows Azure, Windows Phone

Inspiration: We were inspired by people who are blind, but do not allow their handicap to stop them from living life to the fullest. We admired their determination and strength. Therefore, we decided that with our knowledge and skills we want to do something that will allow them better life quality. We wanted to make something that can be applied today, and not in some distant future.

Future Plans: Our future plan is to keep developing this solution mainly for blind and visually impaired people because this is the optimal target audience. But, with capital investment we could adopt it not only for blind, but for anyone who requires indoor directions; imagine the potential uses in hospitals, museums and shopping centers.

BrightSight

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Mentor:
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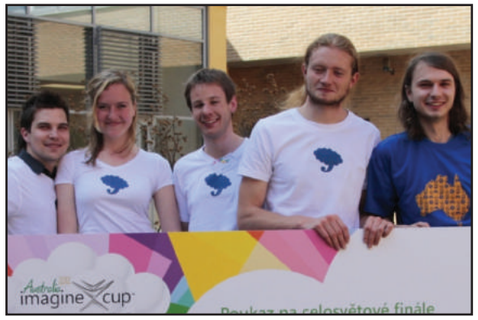
PROJECT: Braille Messenger

Braille Messenger is an alternative to Short Message System designed for the visually impaired. Statistics prove that texting is dominating in worldwide communications. 7 trillion messages were sent in 2011. Texting is preferred by many since it is considered more efficient and less intrusive. On the other hand, more than 284 million people in the world are visually impaired. As these people interact with our world using their sense of touch, touch screen devices makes them truly blind. Braille Messenger bridges the gap and connects the visually impaired with the global mobile community. To achieve this we use the Braille System, a writing method developed for blind people. Existing hardware solutions are pricey and software solutions lack usability. Our method re-innovates the traditional one and enables people to write fast without using their eyes. Haptic feedback from touch screen devices makes reading possible, offering a unique solution not only for the visually impaired but also for deaf-blinded people. In the near future we plan to extend our solution and even create a generic keyboard to be used on Windows 8 devices.

Technology Used: Windows Phone

Inspiration: Braille Messenger is a messaging application designed for the visually impaired. Due to the proliferation of the touch screen devices, about 400 million people worldwide do not have the ability to communicate through common texting methods. Have in mind that more than 6.1 trillion messages have been sent during 2010 (World Health Organization). Braille Messenger reinvents the communications, and bridges the gap between visually impaired people and the global mobile community.

Future Plans: First we plan to develop the same solution to other mobile platforms such as Android and iOS. Second, we will extend the basic application presented here by adding support for social media and email. Finally, we plan to develop a Braille input keyboard for generic use on Windows8 tablet devices.



JoyMind

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PROJECT: JoyMind

The JoyMind application is a system for teaching forign language vocabulary that is based on image and sound association. The solution include three pillars: Learn, Speak and Move. Learn is a web and phone application based on memory techniques that help the user better remember the new vocabulary. Speak is an application that asks the user questions and corrects answers. Move is an application based on Kinect that makes learning more entertaining by giving the user commands that requrie active response. Core connects the applications together so the user can track their status across each of the application.

Technology Used: Kinect, Windows Presenation Foundation, Windows Communication Foundation, Windows Phone, SQL Server 2008

Inspiration: We want to help everyone to be able to communicate with one annother. Our mission is to help everyone to speak at least one worldwide language. We have chosen English as our primary target.

Future Plans: We are currently testing at local primary and secondary schools. The plan is to improve the system and work with faculty to gain adoption and help a greater number of students learn.

The Fellowship of the Ring

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PROJECT: Statistics of Health and Economy by Location

A primay factor impacting the quality of human life is the environmental condition in which a population lives. Stagnant water, noise, waste, fossil fuel usage and other environmental challenges, if not managed properly, will have a direct impact on the health of people.

To measure and efficiently control the emissions of carbon dioxide is one of the greatest challenges that Dominican Republic is facing. According to the Human Development Report, Dominican Republic, 2008, "A Question of power" of the United Nations Development Programme (UNDP), "There is less historical and systematic information about air quality than the one existing about water quality. Most of the cities do not perform measurements on emissions, so data is available only for some isolated source of emissions. The fact that acute respiratory infections have overtaken diarrheal disease as leading cause of morbidity and mortality in different places in recent years can be considered as an indirect evidence of the impact of emissions and deteriorating air quality in Dominican Republic".

The Statistics of Health and Economy by Location project is an application that provides a way to measure air quality at a given site.

Technology Used: Bing Maps, Windows Azure, Windows Phone, Odata

Inspiration: Based on the above we have decided to present our project "Statistics of Health and Economy by Location", work that rests on the simultaneous/on-line collection of CO2 and Oxygen indicators for specific areas, in order to perform a geospatial analysis, thus allowing to determine the financial investment needed to remove CO2 from the selected areas.

Future Plans: We plan to develop a business model for our project and start the first company of its kind in Dominican Republic.

Kany Warmys

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PROJECT: Cyclops

Our project, Cyclops, was developed to help guide visually impaired people. Our mission is to improve their quality life by providing the tools to help them independently participate more deeply in society. Cyclopys has features like text recognition, alerts, tracking and obstacle recognition. The user tells the phone where they would like to go via a voice command, then the Cyclops app provides voice directions to the location with route details.

Technology Used: Bing, Kinect, Windows 7, Azure, Windows Phone, Silverlight

Inspiration: In our world there are 285 million people with visual impairment. They have problems with mobility, orientation and dependence. They have limited the social, human, professional development. All of these constraints have been our inspiration to create CYCLOPS. With our project, we can help them to overcome many of these problems and improve their quality of life.

Future Plans: In the future we will launch this product to make it available to people who need it. We will create a company with the goal of develping software for the benefit of society.

Level Up

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PROJECT: Twasol

Twasol is a system for controlling a computer in an interactive manner by speech and facial movements. Our goal is to help the disabled to control a PC, enabling them to perform most activities without the need for assistance. By using our project, one could control their home lighting and electronic devices, make phone calls, send SMS and many other activities common in everyday life.

The Twasol PC-Controller is designed to replace physical mouse and keyboard by utilizing the following features: (1) Twasol on-screen keyboard enables the user to write, (2) Twasol face detection enables the user to control the mouse cursor by moving his face, (3) Twasol speech recognition enables the user to execute mouse actions such as left-click, right-click, two left-click, mouse-up, mouse-down.

The Program Controller enables some actions that are usually performed similarly to using keyboard shortcuts. For example: In Browser, we frequently use commands like (Refresh, Enter, Highlight URL, Find, Next, Back, etc.). We will develop a subsystem that assigns keyboard shortcuts that can be executed by speech and facial actions.
Twasol Smart-Home is a subsystem that enables users to control his home using"X10" technology. By using a simple wizard, you can determine and control floors, rooms and devices in the home.

Twasol Phone enables users to make calls and send SMS messages. Twasol Phone will use "Skype" technology to implement these services. When logged into Skype, the user can use the Twasol Phone Subsystem to communicate via phone and SMS.

Technology Used: Skype, Windows 7, Microsoft SpeechaAPI , WPF , OpenCV , SQLite , X10

Inspiration: In our world there are many life-changing events that cause people to become disabled. With the advancement of technology we can enable people to regain autonomy and control of many aspects of their lives.

Future Plans: Nowadays, e-learning is quite popular, but this faces practical issues such as the lack of laboratories and computer labs. We plan to use our system to build an interactive learning applications and will implement application called "Physics Lab" to provide interactive labs of physics. Also, we will implement a complete environment of virtual reality that can be customized based on user requirements.

Matalapaine

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PROJECT: Pregnancy 2 Baby

The name of our application is Pregnancy to Baby, shortened as P2B. P2B is a mobile maternity card application for the pregnant women to input information during their pregnancy and it also provides information about the pregnancy related issues and physical activity during pregnancy. The application focuses on the wellbeing of the pregnant women and preventing postnatal depression. We have created a social support group which has health care personnel working as administrators providing help and information to the members of the support group.

The P2B application works as a tool between the pregnant women and the health care personnel. With Windows Phone interface the pregnant women will input their information during their pregnancy. This data is sent to our Windows Azure cloud service and is saved in the SQL Azure database. P2B web-interface is used for viewing the progress of the pregnancy and where the health care personnel can interact and send notifications and messages to pregnant women. The great thing about the P2B application is that you can provide a good healthy pregnancy experience to other pregnant women in the third world countries with your Windows Phone by making donation through the P2B charity page.

Technology Used: Windows Phone, Windows Azure, SQL Azure

Inspiration: We wanted to show that you can create awesome things when you put your mind into it and what better way to show your skillset than competing in the Imagine Cup competition. Our Imagine Cup project is good example of an organized teamwork because even though all of us are students we also have full time jobs and still had the time and enthusiasm to compete in the biggest student competition in world, the Imagine Cup.

CapStreet

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PROJECT: CapStreet

CapStreet is a software solution allowing the calculation of an adapted itinerary for people with reduced mobility according to their degree of difficulty getting around. It also allows its users to consult points of interest in a city, to know if they are accessible or not. Finally, it offers reporting and analysis tools for local authorities about the public roads and streets. CapStreet uses Open Data initiatives and the OpenStreetMap collaborative project for geographical data. This data is enhanced by the community to adapt the solution for people with reduced mobility. Acting for accessibility, CapStreet subscribes to one of the guiding principles of the UN's Convention on the Rights of Persons with Disabilities. This very important convention ensures respect for people with disabilities and imposes the signatories to apply defended principles.

Technology Used: Bing, Windows 8, Windows Azure, Windows Phone, OpenStreetMap, MapQuest

Inspiration: Getting around is one of the most important freedoms in a society. Unfortunately, a lot of people live with a reduced mobility and they have to face many obstacles because streets or places are not adapted to their situation. Even when a city makes adjustments to improve accessibility, it's not always known. We consider this situation is unfair and we know that anybody can be in this kind of situation. That's why we created CapStreet.

Future Plans: CapStreet will quickly be usable in Toulouse, the fourth most populated city in France. But we are already testing the solution on bigger cities like London or Sydney and everything works well. The software adapts itself very efficiently to cities specificities so our long-term objective is to deploy CapStreet in any big city worldwide. We can technically do it, all the work will be to manage the support of citizens in these places. We count on you!

Green Bytes

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PROJECT: Green Bytes

Nagawi.com provides environmental protection with a very interesting business model to activate social responsibility of citizens and organizations. It enables organizations to monitor and manage polluted areas. The solutions utilizes Bing maps and enables users to take photos of pollution with Windows Phones and attach them to the pollution points they set on map, utilizing GPS system and Bing maps. The record of pollution is shared thru the application with socially responsible citizens and organizations empowered effect change.

Technology Used: Bing, Windows 8, Windows Phone, Microsoft SQL Server Express, Bing Maps SDK

Inspiration: There is growing number of illegal landfills, but there is no tool for managing and monitoring these areas.

Greenway

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PROJECT: Greenway

Greenway is an innovative navigation system which significantly reduces CO2 emissions of cars and therefore protects the environment. The system orchestrates the traffic through a distributed routing algorithm in an optimal way. Ordinary navigation systems divert traffic jams onto smaller streets after they occur, whereas Greenway actively prevents traffic jams. This is possible because Greenway reserves timeslots for cars on the streets. With this technique, Greenway knows the position of participating cars for any given point in time, including the future. The heart of the system is an optimized graph traversal algorithm that calculates shortest paths in a matter of milliseconds. The implementation includes many heuristics in order to reduce the complexity of calculating a route to nearly linear time. The Greenway traffic simulation software simulates various traffic flow scenarios in different congested areas. The result of the simulations: Using Greenway, traffic flow is twice as fast. Furthermore, a Windows Phone Application is used as a front-end for customers. The Greenway application is connected to the routing service, which is hosted using the Windows Azure cloud. Therefore it dynamically shows the optimal route to the customer. Generally, the Greenway service scales with the number of customers. Through switching computer instances on and off, a huge number of users can be processed, whilst costs for the technical infrastructure only incurred when the infrastructure is in use.

Technology Used: Bing, Windows 7, Windows 8, Windows Azure, Windows Phone, XNA-Framework

Inspiration: In a world where more and more cars pollute the environment and where stress in traffic congestion is deemed to be normal we have to route cars in a more efficient way. Technology enables us to directly improve the carbon footprint of everyone and therefore save time and fuel. This leads to less stress as well as a more sustainable environment.

Future Plans: After the Imagine Cup we plan to launch a startup and contact taxi companies as well as established navigation system manufacturers in order to make our vision become reality.

Symbiosis

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PROJECT: Symbiosis

Alzheimer is a global problem with dramatic impact and new approaches need to be considered regarding prevention, diagnosis, treatment, confrontation. Following the vision of World Health Organization and Alzheimer's Disease International for innovative approaches to Alzheimer's Disease, our system, namely Symbiosis, aims at creating a novel environment to facilitate, understand and incorporate the needs of the whole Alzheimer community (patients, caregivers and doctors). As for the patient, Symbiosis proposes a fruitful way of interaction through state-of-the-art technologies as augmented reality scenarios, body motion tracking and EEG signal processing. All activities from games to AR scenarios are designed and developed to meet the special needs of an AD patient. Mental and physical exercising, a sense of autonomy and increased self-confidence are the primary focus of all applications along with adaptation to personalized behavior, preferences and needs. The patient progress is continuously monitored by both caregiver and doctor, offering valuable feedback information that helps them schedule the therapy plan and daily routine and perform the system appropriate adjustments according to it. Moreover, extra services are available for the caregiver including emergency notification from mobile application as well as consulting and psychological support at a specialized forum community. Symbiosis means companionship, from sumbioun, to live together, from sumbios, living together : sun bios (life)

Technology Used: Kinect, Windows 7, Windows Azure, Windows Phone, EPOC Emotiv, Vuzix iWear

Inspiration: According to the World Health Organization, we truly face a looming global epidemic of Alzheimer's disease, Our vision is that technology can have a significant contribution to this end. Symbiosis is an innovative system developed to follow our vision, by improving the quality of life of those suffering from AD both literally and metaphorically. In this perspective, it incorporates services and solutions aiming at three different groups: patients, caregivers and doctors.

Future Plans: We are planning cross-case testing and evaluation of the feedback from the target group, regarding the expandability and functionality of Symbiosis, gained through ongoing contact with AD patients, caregivers and doctors at the Alzheimer Center of Thessaloniki. We will build an extension of Symbiosis to a multilingual system enabling international use. We plan to increase in the variety of games, exercises and AR scenarios and provide greater customization of tasks and scenarios to different Alzheimer stages and behaviors.

INDIA

The D Labs

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Mentor:
Smita Pallavi

PROJECT: The D Labs

Dyslexia is a learning disability that is neurological in origin. The problem is not only huge but also severe, unique and distinct for every individual. 7% of school population around the world is suffering from this disease. The most important factor which bewilders us is that the understanding of the problem changes for every individual according to age, ability and aptitude. For some kids, it may be just a problem of Letter Reversal, Letter Distortion, Blurring and Letter Superimposition. For others problem may be of understanding of syllable and attaching sound with the letters. We have come up with a unique solution to fight against this disease. To make people aware of the problem and how severe it is we are using our own hardware for Eye Tracking and Microsoft Kinect for sensing the motion of the complete body. Dyslexics have longer fixation duration, shorter saccade length and more regressive eye movements. Moreover, they react either slowly or randomly while working with applications. This data is tracked, analyzed and compared to identify the disease at an early stage. Once the disease is identified, the parent is asked to submit a scanned copy of his notebook. Interactive games of different genres are then created which make the learning easy and in the mean way collects a huge amount of data like: (1) Reaction Time, (2) Accuracy, (3) Heatmap, (4) Understanding of Speed, Motion and Direction, and (5) Time spent in each application. These data are then compared on Windows Azure to understand early stages of Dyslexia and also check how the child has improved over weeks. In this way we are monitoring each and every part of the child, helping him to learn in an interactive way and then finely tune the games according to our Machine learning algorithms.

Technology Used: Kinect, Windows 8, Windows Azure, Windows Phone, Silverlight, XNA

Inspiration: Apart from regular studies, we also take part in societal work by teaching empoverished children the rudiments of English and Hindi. It was here that we came across dyslexia as a disease present in several children. We were amazed that when we asked some children to write 'ball' as b-a-l-l, they repeatedly wrote it as 'd-a-l-l'. There was a problem with letters as well as problems with orientation. These children have inspired us to work hard.

Future Plans: We look forward to launching our project, for the people who are suffering from Dyslexia, by the end of July 2012.

INDONESIA

Malabar

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PROJECT: BrainStat

Brainstat is an application designed to monitor a driver's physical condition by analyzing his brainwave signals. It can be used in all modes of transportation. Brainstat will give an alert if the driver's condition is not safe and prompt the driver to take proper action to prevent transport accident due to Human Error. There are 3 level alerts in Brainstat, they are: the direct repetitive alert, the beloved voice and video alert, and the call me alert.

Brainstat also uploads the driver's brainwave data to the cloud system just like a black box in an airplane. This data in the cloud can be mapped, so Government or Public Transportation organizations can evaluate their drivers/pilots condition remotely to ensure safe transportation. Why brainwave signals? Because all of our activities are managed by our brain and our brains never lie!

Technology Used: Bing, Windows 7, Windows Azure, Windows Phone

Inspiration: Each year millions of lives are lost due in private/public transportation accidents. 50 Million people are injured to the point of physical disabilities. Hundreds of billions dollars of material and financial damage is done to facilities and infrastructure each year due to transportation accidents. Most of Transport Accidents due to Human Error!

Future Plans: Branstat becomes one of the primary tools used in all modes of transpiration to promote safety, like a seat belt.

SOFTWARE DESIGN

IRAQ

Mirage Tech

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Mentor:
Hemin Latif

PROJECT: Easy Route

EasyRoute is a low-cost traffic reporting system designed to prevent automobile accidents and traffic jams. This system is composed of a client application and a web application. The client enables the user to report incidents. The web UI reports traffic incidents on map so users can view the issues relative to their own position! This application can help both the private and public sector understand and plan logistics around moving emergency patients, freight or the population in general through high traffic areas.

Technology Used: Bing, Windows Azure, Windows Phone

Inspiration: We live in a part of the world where we experience first hand the need for an efficient and low cost reporting system to reduce traffic risks. When we were planning our project we saw an ambulance trying to return to the hospital. Even though the lights were flashing and the siren was on the ambulance could not cut through traffic. Our inspiration was to provide a solution that could make the job of a paramedic easier and provide emergency patients a beter chance of surviving.

Future Plans: After the Imagine Cup Finals, we'll be looking to implement our application in our home city to decrease the number of road accidents. We will use this experience to continue to improve our solution. There are companies who are interested in our soution. We are exploring the business side of our project and how to take it to market.

IRELAND

DocTek Systems

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PROJECT: docTek Systems

docTek Systems is a cloud-based healthcare management system for patients with Multiple Sclerosis. It allows patients to keep track of all aspects of their health using a smart-phone application. Medications, symptoms, allergies and more can all be monitored discreetly and easily with a few touches of this personally tailored application. Doctors can monitor their patients' progress anytime, anywhere, using the professional end of the system. Not only does this application increase patients' and doctors' awareness of progress, it invites the world at large to include self-management in their daily routine, just below their text messages! More than that, the cloud database used by docTek Systems will store statistical information vital to medical research, increasing awareness of Multiple Sclerosis on a world-wide scale. Finally, Multiple Sclerosis, though it affects more than 2.5 million people world-wide, is just the beginning. 'docTek Systems' is a framework for all long-term illnesses. With a simple addition to the database, we could immediately allow docTek Systems to work for asthma, diabetes and epilepsy. Increasing the potential reach to 365 million more people that we could help, along with the millions more sufferers of other illnesses.

Technology Used: Windows 8, Windows Azure, Windows Phone

Inspiration: Last year, Marie was diagnosed with Multiple Sclerosis (MS). Careful self-management of medication and symptoms is the only thing that can delay the progression of the disease and thus delay the onset of much more severe, disabling symptoms. Yet she is told to do this with pen and paper, or by memory. As such, Marie, along with the rest of the team, has developed this simple, modern system to suit her own needs, and those of the 2.5 million other MS patients. docTek will change lives.

Future Plans: The real strength of docTek Systems on a large scale is that it is readily expandable. Although the system is focused on Multiple Sclerosis, the end-user applications are structured to immediately allow functionality for entirely different illnesses following an addition to the cloud database. In the future we plan to work with the Diabetes Federation of Ireland, just as we have already been working with the Multiple Sclerosis Society of Ireland. We will also expand to Android and iOS.

Italian Ingenium Team

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PROJECT: The Fifth Element Project

"The Fifth Element Project" was designed to help autistic children improve engagement and learning during therapy. The project utilizes the capabilities offered by Kinect to engage children with disabilities in a learning experience. Our solution can be adopted in therapeutic centers, schools, and at home. The Fifth Element Project reaches its goals by two main features. The first is a set of interactive and deeply customizable Kinect games focusing on the different aspects of autism. The second is a set of communication services and a web portal to enable remote therapy from home with live supervision from therapists located at the medical centers. We designed and developed a set of motion-based educational experiences and we are testing their effectiveness for learning through experimentation in schools, therapeutic centers, and users homes. The number of therapists is small when compared to number of child with disabilities, and our idea is to enable parents, eventually with the remote support of therapists, to help children continuing their training at home with activities complementary to the ones performed at school. Our platform leverages the information captured by Kinect to track the movements and to recognize the gesture of users (children and therapists). Users can interact and play with application using their bodies. Moreover, our platform uses Windows Azure features to enable remote assistance of therapist when the child is at home.

Technology Used: Kinect, Windows 7, Windows 8, Windows Azure

Inspiration: Every year, 40 out of every 1000 children is diagnosed with a disease from the autism spectrum. In the World, more than 28 million people suffer from autism. The disability itself, and its causes, cannot be removed or weakened. What is possible to do by using technology is to put the child in the condition of "bypassing" the effects of his or her disability and help him or her learn how to perform, as autonomously as possible, given tasks - especially those related to fundamental activities in human life.

Coccolo

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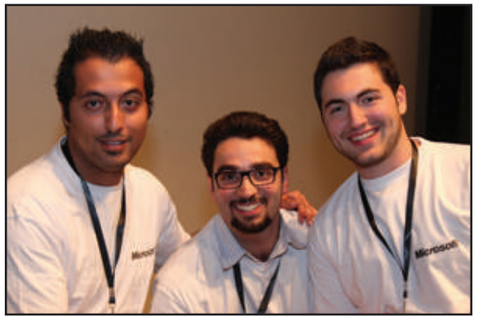
PROJECT: All Lights

After the 2011 Tohoku Earthquake, tsunami and nuclear explosions we experienced scheduled blackouts due to power shortages. Today, power saving is considered one of our most important problems. "All Lights!" has 3 functions that realize intelligent power savings. The first function, efficient automatic dimming, is achieved through a dimming controller called the "All Lights! Controller" that sends a command to each light to adjust the brightness according to the information from the light sensors installed at each LED lamp. The second function is visible light communication network, (VLC). "All Lights!" realizes VLC by fast blinking of each LED lamp itself and requires no cables, no Wi-Fi networks, but just LED lights. It is possible to utilize the broad frequency bands freely since transmission powers and bandwidths have no legal constraints. It can also be used in hospitals or on airplanes because the visible light is quite safe and has no effect on human bodies and electronic devices. Installation of the system is quite easy. All we have to do is locate the LED lamps on the ceiling . There is no need to set up the built-in network cables .The third function is the visualization of the power savings. This is to raise the users' interests in the power consumption and power savings through integration of three components called "All Lights! Controller", "All Lights! Mobile!", and "All Lights! Web!" based on Windows Azure platform. "All Lights!" is an innovative system that gives an easy, efficient, and intelligent solution to power saving problems. Our solution, " All Lights! " can save our future!

Technology Used: Windows Azure, Windows Phone, Visible Light Communication (VLC)

Inspiration: After the 2011 Tohoku Earthquake, tsunami and nuclear explosions, we experienced serious power shortages in Japan. Power saving is considered as one of the most important problems in Japan and in the world as well. At the same time, we were working on a project based on visible light communications (VLC). These inspired us to apply the VLC technology into the intelligent power saving solution based on LED lights.

Future Plans: After imagine cup, we plan to collaborate with lighting manufacturers like Panasonic to introduce our solution, "All Lights!" to the world. First, we will try to decrease the cost to produce the LED light bulb with VLC features and the whole system by combining our VLC technology and the lighting technology of the manufacturers. We will install our system in the whole buildings of our school, the manufacturers and Microsoft Japan, and show its effectiveness to the world.



Dancing Pillow

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PROJECT: Dancing Pillow

The dancing pillow is an electronic alerting device made especially for the hear-impaired person. It is made up of three main components:

First: The sensor. It is a small, portable device that can be placed anywhere inside the house. The sensor is able to detect: Fire alarm sound, when a thief enters a house, baby crying, door alarm sound, & when a person's name is being called.

Second: the Windows app: It is used to choose the method for alerting and supplies the connection between the sensor and the alerting device.

Third: is the dancing pillow device: It is responsible for alerting the user by 4 different methods.

So how does it work? The sensor device contains 3 electronic sensors; (1)a smoke sensor, (2)a motion sensor, and (3) a sound detector. When any of these sensors are activated, a signal is sent to your Windows Phone containing the dancing pillow application via radio frequency waves. The application then will send a signal to the dancing pillow alerting device via Bluetooth, and according to the settings, the device will either vibrate, light up, and/or emit a scent. The dancing pillow application analyses the incoming signal from the sensor, and interprets which sensor is activated. In case of dire emergencies, the application will notify the appropriate contacts, be that a family member, police, fire department, or the hospital, according to the situation and selected settings.

The dancing pillow alerting device can be used in two ways:

a) During sleep: when a hearing impaired person goes to sleep, the dancing pillow device can be placed inside the pillow case, where it is wirelessly connected to their Windows Phone through Bluetooth. Then it could alert the sleeper in case of an emergency using vibration, light, and/or smell. A fourth method, sound, can be used, to notify neighbors, police, firemen to intervene and help.

b) During daily activities: after the person wakes up, the device can be placed inside their pocket or on their belt.

Technology Used: Windows Phone

Inspiration: The idea is a response to the questions; how do deaf people get notified when the fire or theft alarm is activated, or how could a heedless mother hear her baby's crying to feed him, or how could a hearing-impaired person hear the door bell ringing or his mobile phone alerting? I have felt their struggle, and decided to find an affordable solution, especially one that could help them even during their sleep, thus the dancing pillow product.

Future Plans: We are going to produce the product immediately because we have found a dire need in the market for such a product and at the same time we are going to improve it to make it smaller and lighter. We will push several products into the market, like one that could be placed on the hip, or one around the wrist. More products will also be made especially for children and another for elder people, thus making our products suitable for all tastes and ages.

SOFTWARE DESIGN

Etzoockee

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PROJECT: Archangel

"Archangel " is a project for changing the world and saving human lives. The project is an extensible software-hardware system consisting of two mobile applications, two desktop applications and, which is the most important, an unmanned vehicle, or drone.

Drones can be used for two purposes:

1. Transportation - to deliver first-aid-kits, medicines or other necessities. Drones are quick, flexible and mobile, so they are perfect means of delivery.

2. Analysis - through exploring a large area and sending the recordings to the main station. Live camera installed on drones helps to deal with many tasks of intelligence.

Drones are controlled using a desktop application. The desktop applications may be installed on PC located in a stationary or mobile base. Overall, the components interact with each other using Cloud technologies. The project is intended to help people where it is really needed - everywhere, and when it is really needed - as soon as possible. Unmanned vehicles and Cloud technologies are the future, and we are confident that we are heading in the right direction with "Archangel ".

Technology Used: Bing, Windows 7, Windows Azure, Windows Phone, DirectX, ADO.NET, WCF, WPF

Inspiration: In our country there is a problem with emergency services response time. Ambulance and police delays are inexcusably high. This can lead to serious problems. Surprisingly, similar problems are significant for all developing countries around the globe. This situation was the origin of our project. The solution idea came to our mind. We saw unmanned vehicles used in military purposes: drones are used in intelligence. Why not to use them during peacetime in ambulance, police, rescue services?

Future Plans: Archangel is an innovative and very important project dedicated to saving human lives. We will do everything we can to implement the system and see it working all over the world. We are looking for any kind of support to make our dreams come true. First of all, we are going to implement our system in our home country - Kazakhstan. Next, we are going to bring the project to the worldwide scale.

Let IT Bee

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PROJECT: Let IT Bee

We designed 'Beehive Monitoring System' in order to save bees as the bee populations has diminished recently. Our goal is to ensure environmental sustainability. The diminished bee population is very serious problem. If we don't solve this, more than 100 agricultural crops will fail to pollinate causing a drastic impact on biodiversity. As a result, it will be impossible to sustain an ecosystem. So the United Nations has warned very seriously. Let IT Bee provides a good solution to this problem. The solution is composed of a device, a web service and a mobile application. The device is installed in hive to gather information from sensors regarding hive activity. These data are sent to Azure for analysis. Users can monitor the status anywhere using the Windows Phone application or web browser. Using our solution, beekeepers will be able to closely monitor the health of many beehives. In addition, Let IT Bee will provide useful content for beginners and hobby beekeepers. Recently, urban beekeeping has become popular in New York, Tokyo, London and etc. Let IT Bee can provide more efficient environment for the city user enabling this trend to grow. The growth in beekeeping will support a clean and diverse ecosystem. It's the way to ensure environmental sustainability. Let IT Bee will help it.

Technology Used: Bing, Windows 8, Windows Azure, Windows Phone

Inspiration: Bees help plants' pollination and play an important role of producing foods. Through pollination, plants can bear fruit, herbivores can live and support the survival of carnivores and humans. Bees are foundation of the ecosystem. However, as CCD phenomenon came to the fore recently, bees' dying has become a serious problem. Hence, we wanted to suggest a solution that helps make beekeeping easier and more effective. Our solution will help the effort to make beekeeping more popular and increases the number of bees.

Future Plans: The current version of our solution was developed for experts only, but we plan to develop more content for urban, hobbyist and begining beekeepers in the future. We will also experiment with techniques to constantly check the bees' health. We have performed a field test in Korea but we plan to conduct more tests in other countries in order to optimize our project.

The Code Breakers

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PROJECT: Universal Sign System (USS)

Universal Sign System recognizes sign language and synthesizes it into a human voice, allowing hearing- and speaking-impaired individuals to engage in spoken conversations. It will allow speaking-impaired individuals to use a mobile phone, travel alone, visit the doctor independently, sign in karaoke, and speak to anyone regardless of language. Universal Sign System also allows users to capture and translate new sign words into their dictionary.

Technology Used: Microsoft Windows 8, Xbox Kinect, Microsoft .Net Compact Framework 4.5, Microsoft Visual Studio 11, Microsoft Visual C#, Microsoft SQL Server 2012, Bing Translator

Inspiration: Many hearing and speaking-impaired overcome their challenges and show the world their talent. Beethoven provided the world the treasure of his music whiel being deaf. We were inspired to provide a greater opportunity to the hearing and speaking-impaired. Our goal is to allow them to show their creative ideas and thoughts.

Future Plans: We will start a company to distirbute our system through schools, universities, ministries, hospitals, airports, universities...etc... We also plan to develop partnerships with telecommunication companies to adapt our project to create a mutually benefitial relationships that increases numbers of phone users.

Cake

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Mentor:
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PROJECT: TOTL game

Turn on the Light (TOTL) is a 2D platformer set in the year 2089 where non-renewable energy resources are obsolete. The game will focus on having the player use energy sources scattered between dimensions to solve various puzzles throughout the environment. During each level, the player would familiarize himself with different ways of using these elements. Each level would have several dimensions and each dimension has one specific energy source. The player has to use various dimensions and thus various renewable energy resources to progress through each level. The main focus is to gather green batteries, a physical form of renewable energy, which the player can use to power up various areas around the world.

Technology Used: Xbox 360, Windows 7, Windows 8

Inspiration: As friends, we all love gaming, so we decided to tackle the challenge of creating our own game. We thought of various game ideas, one in particular was most appealing to all team members. We then figured our game fits the Imagine Cup Theme very well and decided to enter this year's competition. From that point onward, it was one idea after another that lead to our wonderful game, TOTL.

Future Plans: We plan to further develop the game, adding various new levels, gameplay mechanics, and different energy resources. We plan to release the game on Xbox Live Arcade and the Windows 8 App Store.

The Rhapsody

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PROJECT: WizBoard

Illiteracy growth is a major challenge due to the language and phycisal barriers to reaching all students. WizBoard is an application that allows teachers to conduct lesson across multiple locations with students who speak different languages. It is designed to provide individuals with disabilities with greater access to lessons and it allows school districts that may have teacher shortages to scale lessons to a greater set of students.

Technology Used: .NET Framework 4.5, Windows Azure, Windows 8, Windows Azure, Windows Phone, Microsoft Bing Translator, Windows Presentation Foundation, Windows Communication Foundation, Smoothboard.NET, Sign Smith Studio

Inspiration: Our inspiration came from a desire to help lecturers increase the impact of lessons and to help students better understand the lessons.

Future Plans: We will continue to approach and work with organizations to deliver a commercial version of our solution to students all over the world who can benefit from better education.

TDGS

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Mentor:
Dr. John Abela

PROJECT: TDGS

The Digital Guide System (TDGS) gives visually impaired individuals an alternative to using guide dogs for mobility. Instead, this solutions uses stereovision cameras to capture the world in front of them, web technologies to process obstacels in their environment (eg. sighs, etc), and audio cues to communicate back to the user. We maintained a design priority that the system should be easy to use and reliable in a variety of environments.

Technology Used: Windows SDK & .NET Framework, OpenCV, Zbar, SOAP, Microsoft Speech Synthesis

Inspiration: While looking for an idea we came across a newspaper story about a blind person who went to great lengths to acquire a guide dog; guide dogs are expensive and difficult to train but can greatly improve their user's standard of living. We set out to provide a solution that performs the same functions of a guide dog but costs much less for its user.

Future Plans: We intend to take our project further and realise its true potential. We have a business plan in place and are confident that we will be able to provide this new amazing tool for blind people.

ReImagine

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PROJECT: KIWI

Attention deficit disorder (ADD) is a problem with inattentiveness, over-activity and/or impulsivity. Is one of the most commonly diagnosed behavioral disorders in childhood. It affects between 5%-10% of the young population; there are no differences between geographic areas, socioeconomic status or cultural groups. To face this problem we've created KIWI. Our solution is based on taking current psychological treatments and combining them with new technology and with the successful model of online application stores. The idea is to treat ADD through the use of educational software and video games. ADD educational software increases focus and concentration. Since children are already fascinated by video games, it seems logical that children with ADD can be taught to pay more attention through screens and controls. KIWI is a PLATFORM that helps in both diagnose and treating ADD. It consists of educational software and exercises that we named challenges. Since mobility is one of the areas that needs training to help reduce ADD, KIWI's applications are multi-platform in order to keep the child entertained and turn a daily routine into a fun game. The applications have Kinect support and also work for Windows Phone. All the KIWI applications stay connected via Internet and the cloud to help track progress. The results are available for parents, psychologists and teachers. Based on the results and the patient's background different exercises will be proposed to help develop several areas, which require further training. KIWI is also a platform that helps developers create games and applications to treat ADD using a SDK that simplifies the process; it also includes a visual development environment to help people without programming experience like teachers and educational psychologist to create and customize new and rich experiences for their students and patients.

Technology Used: Bing, Kinect, Windows 7, Windows 8, Windows Azure, Windows Phone

Inspiration: As a team we realize that the situation faced by children with ADD is very complicated. They do not belong to a special school, but regular school is less impactful, so their education is strongly affected. We thought there should be a more fun way to complete the treatment of ADD, so that children can have a better life. There are many education problems in our country and in the world, so we feel the need to collaborate on a solution and we believe that Kiwi is an excellent way to start.

Future Plans: KIWI is focused to children with ADD, but we cannot lose sight of one thing, software like this can help every child. We can change the actual primary educational method through technology. Kids nowadays are used to computers, smartphones, and interactive games, so adapting education to kids' interests will have as a result smarter children, with more abilities, able to solve the world's toughest problems and ready to change the world.

Golden Drops

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Serigne Ousmane MBAYE
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PROJECT: Golden Drops

The Golden Drops project consists of a device for health screening that retrieves a blood sample in a quick, simple and painless way. The process provides maximum security during the operation and is 100% safe for the individual. Then the person must make a choice among a dozen tests (AIDS, Alzheimer's, blood cancer, skin cancer, blood sugar, cholesterol ...). A short time later the person will have the test result as a ticket that contains a single encrypted number that can be entered on our site. The person is then informed of his test result and directed to help from specialized associations. If it turns out that the test is positive for a critical category (eg AIDS.), the person is immediately redirected to the nearest health center to run a confirmatory test and to benefit from a medical and psycological support.

Technology Used: Skype, Windows 8, Windows Azure, Windows Phone, Microsoft Robotics Studio, Silverlight 4, Visual Studio 2010, SQL Azure, Telerik, Bing Maps, ASP.NET MVC, Windows Communication Foundation (WCF), SQL Server 2008

Inspiration: "There is no more urgent problem in the world today than the rapid spread of HIV infection. All humans ought to do what they can to address this matter."
-Lee Zaslofsky AIDS Committee of Toronto

"Aids destroys societies starting from the basic elements of a society : women and the family support ."
Senior Fellow at Aéras (Global TB Vaccine Fondation).

AIDS is past the stage of pandemic influenza, but when the fight against AIDS is properly resourced, infections rates have been seen to decline. While suffering cannot be quantified, decades of delay has been experienced in the worst affected areas. To this end, Team Golden Drops tackled this problem, only to dream of saying in the near future, "One upon a time, there was AIDS... "

Future Plans: After the Imagine Cup Worldwide Finals, we plan to present our project in the XIX International Aids Conference in Washington DC (July 22-27 2012).

MobileEye

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Mentor:
Alexei Dunayev

PROJECT: MobileEye

Visual impairment is a significant health problem across the globe. Every five seconds one person in the world goes blind (World Health Organization, 2011). Although 80% of visual impairment is preventable, for the 40 million blind people across the globe, prevention is no longer the cure (World Health Organization, 2002). While technology has enabled various activities possible for the blind, such as text-to-speech technology for interacting with PCs, it is hard for blind users to interact with real world objects. Team MobileEye presents a solution that allows its blind users to discover the world through the lens of their mobile phones. The concept is simple - take a photo of your surroundings and hear your phone describe it to you. This mobile-based application, integrated with a high-tech server system, will provide a solution for the blind in the areas of navigation, richer context of information, and greater awareness of the surroundings. This technology can assist the individual with details including text or pictorial signs, labels, surrounding building structure and so on. The solution enables people to complete tasks that were not possible before and helps them be more independent. Using a combination of artificial intelligence and human intelligence to provide context-specific information, MobileEye not only provides a solution to its blind users, but also connects people from different parts of the world, enabling them to lend a hand and help blind people. To find out more about MobileEye, visit our website at www.mobileeye.org

Technology Used: Microsoft .NET 4, Visual Studio 2010, Windows Phone 7, ASP.NET MVC3, Microsoft Azure

Inspiration: We truly admire the spirits and courage of blind people who despite their challenges still raise families and hold professional jobs, supporting and contributing to the society. 6 months ago, we started from nothing to a spark of idea conceived when we saw Neil Jarvis, a blind person giving a lecture in our university. Now with MobileEye, we want to reach out to the worldwide community — the 40 million blind people and more — to help them better discover the world!

Future Plans: Our target market is currently people with vision impairment. With a minimum cost of $5 per month, users can obtain this technology to better discover the world and be more independent. Next, we want to introduce MobileEye to the travel and tourism industry. People in a foreign land often experience similar sense of disconnection as blind people, caused by language and cultural barriers. This novel commercial outlet can support and sustain MobileEye as a free service for blind people.

Gravity

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PROJECT: SwiftER

Swift Emergency Response (SwiftER) is a software solution developed to improve the response of medical, security, fire and other services to emergency situations. It directly affects the general populace who find themselves in critical emergency situations; especially countries with no unified helpline/emergency hotline. SwiftER allows on-lookers or passersby to report an emergency situation via their Windows Phone using buzzwords and pictures; the nearest and appropriate emergency service would be notified and dispatched to the scene. Other Smartphone's with GPS capability can just snap their surroundings and upload the picture via the mobile web; GPS coordinates would be extracted from the pictures and sent to the nearest appropriate emergency service. Users also have the luxury of searching for the nearest available services in their locality such as hospitals, fire stations, police stations etc. This information can also be spread on selected social networks by choice (e.g. Facebook and Twitter). The emergency services are afforded the comfort of locating the scene of the emergency via real-time positioning and navigation. Real-time positioning comes in handy while responding to emergencies in slums, remote locations and rural areas. SwiftER also includes a chat feature to facilitate communication between the reporters and the emergency services. SwiftER employs cloud technology (Windows Azure) to host its server, databases and internal logics due to the erratic nature of power supply in most developing countries.

Technology Used: Bing, Windows Azure, Windows Phone, Silverlight

Inspiration: The huge gap that exist in notifying various emergency services about respective demanding situations in Nigeria and other developing countries coupled with nonexistent frameworks or infrastructure to facilitate an emergency service. Others include: Deficient navigation system and bad house numbering systems. Unavailability of comprehensive emergency services database.

Grawesome

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Mentor:
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PROJECT: Blood it

"Blood it" is a system that monitor the blood units in the blood bank. When it gets below a critical point or there is an emergency situation a GPS system will allocate nearest donors of that blood group, and then the system automatically sends an SMS for them and waits for the confirmation. The system is used to supply the blood bank with the needed amount of blood at minimum time and maintain the adequate blood levels in the blood banks. If 'Blood it' sensed any emergency situation like: the Blood Bank reached a critical point with a swift demand of blood and there is no available donors nearby, it will locate other blood banks and hospitals in the same area or a nearby one to get the amount that can take it off the critical point. The System coming up with a model that helps decreasing the time needed to reach the donors as much as possible. This time is very critical in saving lives that on many critical situations every second is counted for those people.

Technology Used: Windows 7, Windows Azure, Windows Phone, C sharp , ping maps , Microsoft Visual Studio 2010

Inspiration: Oman is one of the countries with the highest incidents of car accidents. Injuries due to car accidents cause a need for blood. Because most fatalities are not because of the lack of blood but the time needed to get it, we thought of a way to help save those lives. This is why we came up with 'Blood IT' which aims to find a way to provide blood units within a short time.

Celoks

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PROJECT: SEED

Our application (SEED) focuses on utilizing extra food that goes to waste every day by distributing it to the people who need it. SEED will simplify the process of food donation by crowdsourcing the tasks involved in the overall process. With the help of the SEED application, we will change the way you donate food today. The idea is to make food donation so easy that it will become your habit to donate food rather than throwing it into the garbage. If you see a place with a lot of hungry people and you want to help them, all you have to do is to spot their location on your SEED app and that is it, you have made your contribution to the SEED process as a seeder. If you want to donate extra food, just point yourself as a source of food and that is it, your job is done. If you happen to be a volunteer who is on his way from one place to another, SEED will show you the places where food is required and the places where food is available. You can then collect food from one place and deliver it to the other. It has never been so easy. With SEED, donating food is as easy as making few taps on the screen of your smartphone. The important point to note here is that all users are ordinary people. Any person could become a donor, a seeder, or a volunteer depending on his scenario. No one has to make any extra effort to perform any of these tasks. For example consider a scenario where you are headed to a friend's place, on your way, you feel like doing something socially good. Luckily you have the SEED application on your phone. You can easily spot the places on your route where there is needed and the places where food is available for donation. You can then collect food from these places and deliver it to the places where it is required. So let's make SEED a reality and fight the world hunger problem together.

Technology Used: Bing, Windows Azure, Windows Phone, Facebook, SMS Server

Inspiration: Being from a country like Pakistan where hunger is a major problem, we have seen people dying from hunger and we have also seen people wasting food every day. So we asked ourselves, why can't we provide a solution which can utilize the existing food resources to feed hungry people? The main inspiration was when we studied the people who have enough food and are willing to donate it but do not donate because they are too lazy to do it.

Future Plans: Our goal with SEED is to develop a solution which is easily accessible to millions of users and is attractive enough for users to keep using it. After the Imagine Cup we would like to bring in the business model behind SEED and add features which will motivate mass users to keep donating food using our application.

flyKIT

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PROJECT: Blind Guidance System (BGS)

Blind Guidance System (BGS): is a hardware and software solution developed to help the blind to walk, to find something, to recognize human faces and to get requested places easily. Users navigate by live voice feedback and a moving mechanical stick with wheels, to ensure avoiding obstacles in the way. BGS provides many features that help the blind to navigate, avoid obstacles, recognize holes and ladders, know their current location, find a new location, determine the shortest path, use GPS, cross a busy street, search for something and recognize a human face. This is all provided by a combination of voice feedback, vibration feedback, responsiveness to voice commands and wheels that pull the user on the right path. BGS has many features that make it a suitable solution almost for all ages. All together, BGS is a big step to providing the eyes for a blind person.

Technology Used: Bing, Kinect, Windows 7, Windows 8, Windows Azure, Windows Phone

Inspiration: The idea of the project is brand new. We were inspired from our feelings to blind people's need for greater independence, self-confident and most of all to feel like a person that can do his daily activities in the same manner as the sighted. For the first time, there will be a device to pull blind people to their requested place whether it will be outdoor or indoor.

Future Plans: We will continue developing our device in order to cover other needs for blind people. We will provide our hardware device with its SDK in order to allow other developers to innovate other features for it.

Wake Up

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PROJECT: Wake Up

Wake Up is a Psychomotor Stimulation System designed to contribute to the second target of the Millennium Development Goals in the achievement of an inclusive society with the same learning opportunities for everyone. Wake Up aims to maximize the benefits of new technologies on behalf of children with Down syndrome. It allows them to use the Kinect sensor and games based on natural interaction, color detection, gesture recognition and artificial intelligence to enhance their motor skills, attention, memory, perception and communication.

Technology Used: Kinect, Windows Azure

Inspiration: As the leaders of the nations said we have a duty with all the world's people, especially the most vulnerable and, in particular, the children, to whom the future belongs. Therefore the second target of the millennium development goals is to achieve the same learning opportunities for everyone. Wake Up aims to contribute with this goal working in behalf of children with Down syndrome.

Future Plans: Governments around the world are looking for different ways to achieve the same learning opportunities. Wake Up propose to them an application for children with Down syndrome, it consists of the following 3 stages: At its first stage Wake Up will spread through pilot centers of stimulation, in its second stage it will be rolled out through national programs for education and for social inclusion; finally Wake Up may be diffused by international organizations around the world.

Divided By Zero

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PROJECT: KidCAMP

KidCAMP is a web and mobile application that augments special education by improving autism communication tools, assisting teachers create learning resources, monitoring student performance and supporting global statistics of progress in autism spectrum disorder (ASD). It aims to provide families with an affordable educational platform for students with ASD that can help them fulfill equal opportunities for education. Using Microsoft's Kinect, special-needs children would then have an experience that feels a lot like their natural environment, where they can use various gestures with their hands and feet as they interact with the pre-created game modules by their teachers. Every child deserves to have equal education and in order to attain that, we must ensure that we give them the proper tools and the proper environment to help them contribute to a society for a better future. "The platform also allows Special Education teachers to build their own activities and games which they can save and share to different educators or students to improve the community of accessible autism-based applications. They can modify and customize these games according to the growing behavior of the child and adjust it in order to suit the child's changing interests. Integrated with Kinect technologies, the customized applications will allow the child to use a computer in ways he has never been able to do so before."

Technology Used: Kinect, Windows 7, Windows Azure, Windows Phone

Inspiration: The project was inspired by one of the team members' cousin who was diagnosed with autism spectrum disorder but managed to improve because of technology. Currently, technology seems to be one of the biggest motivators for students with ASD to take on tasks and activities and because of this, they evolve pretty quickly. KidCAMP wishes to break the barriers and allow teachers to create their own game creators. They can invent various applications which are only limited by their imagination.

Future Plans: The project aims to help children with ASD, and so the team decided to continue this project in the future even after Imagine Cup. The team created a three year plan, which will cater in improving the goals and manage growth of the application.

ARMED

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PROJECT: SAPER - Sensor Amplified Perception for Explosives Recognition

SAPER (Sensor Amplified Perception for Explosives Recognition) is a mobile solution which identifies hidden improvised explosive devices and landmines utilizing magnetic field distortion. SAPER transforms a smartphone into a personal portable dangerous explosives detector and a ground scanner which can be successfully adopted in real life scenarios by civilians.

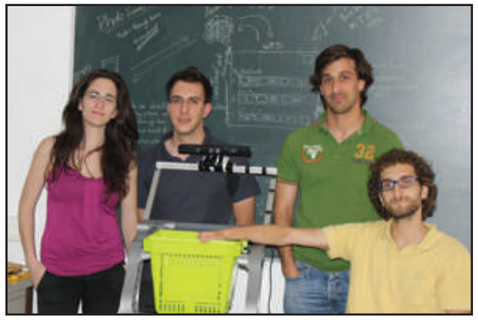
We have experimented with the new sensors used in mobile technologies and observed that the magnetometer can serve as an electro-magnetic field detector. The original concept was to use it as a ferrite-based objects detector. This idea has been adapted to facilitate metal detection and unexploded ordnance (UXO) identification. To manage this process we have developed a method of magnetic signature representation. SAPER's main set of algorithms perform pattern recognition comparing signatures of objects to our pattern database. The mobile app has been integrated with a SOA based portal solution with Metro based interfaces and immediate threat notification services – turning our SAPER solution into first-aid UXO detector and notifier.

This solution serves also as a social toolkit for multicasting threat identification information to warn people about possible nearby dangers connected with UXO's. To increase the detection sensitivity we have designed our own hardware sensor. The external wireless magnetic detector integrates with any mobile device increasing usability and range for ground sweeping.

Technology Used: Windows Phone

Inspiration: As military students we have been interested in fusing our IT engineering and domain knowledge to exploit an existing smartphone features in an extraordinary way to support civilians in potentially dangerous zones. We hope that our project will be a testimony that military men are solving such problems. We need and want to solve conflict related issues and to help civilians by increasing their safety.

Future Plans: Our main goal is to finish developing SAPER for other mobile platforms (Android and iOS) in order to introduce the application to wider set of customers. We have been offered business opportunities to commercialize our idea for both civilian and military markets. We would like also to investigate the scientific side of our project, extending the pattern matching method and integrating the solution with unmanned vehicles. Some of our existing results are being published in scientific papers and a thesis in the domain of mobile technologies and artificial intelligence.



wi-GO

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PROJECT: wi-GO

In an age of increasing mobility, development is increasingly linked to the quality of the communication and transportation infrastrucutre. Accessibility is essential so that citizens can live according to their citizenship rights. Have you ever wondered how disabled people live in our society? What implications a physical disability brings to the life a young man? How a simple shopping trip can become a real challenge? Do people know that there are over 600 million people with a disability in the world? And 800 million elderly people worldwide? That 54 million of which live in USA alone, where 61% of these are still in a working age. In this context the "wi-GO Project" emerges. It is a project that seeks to unite the technological knowledge and civil responsibility in the construction of a common path towards integration and an improved quality of life. It is based on the conditioned mobility of disabled people especially in situations of object transportation in various scenarios (e.g. supermarket, airport, or even in industry). Our preliminary contacts suggest that our solution could help improve accessibility, differentiation and that it is also an opportunity for increased profitability. This initiative is our contribution as actors involved and aware of the problems in our society. We present it, knowing that it is possible to transform society by providing it with new methods and instruments towards building a better world.

Technology Used: Kinect, Windows 8, .Net Micro Framework

Inspiration: The wi-GO project was created by Luis de Matos, who due to life's circumstances found his life radically changed when at the age of 14 found himself in a wheelchair. He's fully aware of all the limitations that people like him have to go through. Luis soon realized that technology could become a vital instrument to help surpass so many of the limitations that people with disabilities encounter and that became his life goal.

Future Plans: We intend to take the wi-GO to market. We will start with three prototypes; one for supermarkets, one for the home and a third one to be used at airports. Later on we want to expand its use to other avenues such as the ones mentioned before (i.e. hospitals, industry, etc...). We also expect to continue developing other products, some of which using the Kinect Sensor technology, that can then be sold.

PUERTO RICO

THINK

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PROJECT: Think!

THINK! offers an engaging learning experience that leverages cloud-based computing to foster individualized learning and inclusion by combining an active learning environment that provides for every learning style with an assessment module that tracks individual progress, delivered through an inexpensive subscription model that enables a more efficient allocation of school financial resources.

Technology Used: Kinect, XNA 4.0, Windows Phone 7, PC/Laptops

Inspiration: We saw an opportunity around the world to improve primary education. A lot of kids are having a hard time studying because they are simply not interested in their lessons. They would rather be playing, jumping around and having fun.

Future Plans: We plan to continue to improve the system and to launch it in the market. Our goal is to help schools and the educational community by providing a new way to engage their students with THINK!

QATAR

Technology Lanterns

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PROJECT: 3D-KINDIO

3D-Kindio is a system that helps the blind and visually impaired navigate the world around them by giving them the position of the nearest obstacle. The system uses a helmet-mounted Kinect camera, 3D audio and Augmented Reality (AR) technologies that together allow the user to sense where exactly an object is located by changing the sound frequency and output angle. 3D-Kindio also gives the user information about their surroundings by reading specially customized tags. This can help the user identify room numbers or other details about the objects in their environment.

Technology Used: Kinect, Windows 8, Microsoft Visual Studio 2010 Professional Edition, Kinect SDK, Direct X SDK, Windows Platform SDK, ARToolKit plus, Cinder Library, FMOD Sound Library.

Inspiration: A visually impaired person faces so many difficulties in order to move freely and independently. These difficulties increase in environments that aren't well prepared to serve blind people. We were inspired to use technology to help visually impaired people move freely and thus make their lives easier.

Future Plans: We have been given a great deal of support from different organizations in Qatar. We plan to work with one of the organizations to introduce our project as a product. We plan to contineu to develop 3D-Kindio's software and hardware in preparation for the release. Our next step is to conduct field tests in order to gain more user feedback.

IQube

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PROJECT: LiveX

LiveX Learning Platform provides an interactive and cost-efficient approach to science experiments using off-the-shelf hardware, IQubes* and the cloud. Our solution aims to reduce the inequality in universal education by helping the elementary schools from all countries, but greatly benefiting the developing ones, to deliver experiments in various scientific disciplines at an affordable cost. Many children will have the chance to interact in a more engaging and creative way with science and understand it much better by experimenting with what they learn, rather than just reading textbooks. Teachers will have the possibility to create custom experiments and share them with other schools by publishing them on our experiment marketplace, creating a community around our solution. Basically, LiveX Learning Platform consists of two main parts: a software platform holding all the business logic running in Windows Azure and a big variety of end-devices such as smartphones, tablets and IQubes. * IQubes are electronic smart cubes with LCD screens on each side, with many sensors and capable of communicating with other IQubes and with the cloud.

Technology Used: Windows Azure, Windows Phone, Windows Workflow Foundation, Windows Communication Foundation, ASP.NET MVC 3, IronRuby

Inspiration: As students, we noticed that we best remember theoretical knowledge by the practical experiments performed, which apply it. However, such a method of teaching is rarely put into practice, mainly due to the lack of laboratory equipment. Through our solution, we hope to improve the equality in opportunities regarding education, by offering an affordable alternative to laboratory equipment.

Future Plans: After the Imagine Cup World Wide Finals we will refine our design for series production and try to get our product and our vision out on the market.

Bonjour Development

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PROJECT: M.D. Voice

Hello everyone! We are Bonjour Development from Russia. We called our project MD.Voice because it is designed for treatment of vocal apparatus diseases. Many people in the world have problems with their voices and any of us could be a victim of different vocal apparatus disease (e.g. throat cancer). And we really hope that our project could save many voices, many happy people, many lives! It would be really awesome, wouldn't it? And that's why we are working hard, trying to find new approaches, trying to make a new vision on the solution of this problem.

M.D.Voice is a system for early diagnosis of throat diseases by analyzing the voice. It consists of Windows Phone applications that perform periodic voice monitoring (including game application with voice control which is suitable for children) and cloud service that performs voice analysis. It collects and analyses statistics of changing voice parameters over time and is able to give recommendations on visiting a doctor. Thus a user is able to determine possible disease in the very early stage, when it is not too late to perform adequate treatment without losing their voice.

If you have any questions or want to know more about our team and project visit our Facebook page: http://www.facebook.com/BonjourDevelopment. Thanks for your support! From Russia with Love!

Technology Used: Windows Azure, Windows Phone

Inspiration: One of our team members - Anton - has problem with his voice. What if this application existed for him? We really want enable other people to avoid his fate, and improve their lives without the lasting issues of voice problems.

Future Plans: After the Imagine Cup we will continue to work on our project. Actually, we want it to become a finished product. How are we going do that? Our plan is to create a firm, get in touch with concerned people from all over the world and try to do our best. Competition or no competition, we wouldn't stop our work now.

Sen Section

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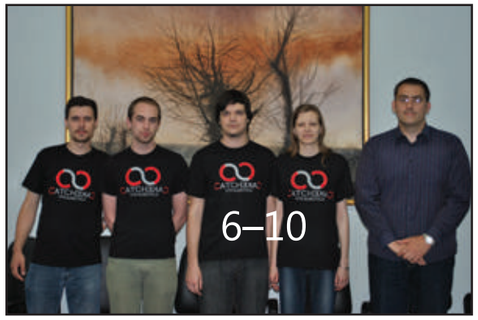
PROJECT: Tataane

Our solution "TaTaaNe" helps big organizations dealing with big data sets to rapidly collect and process forms during survey campaigns. Our platform utilizes Windows Phone 7 to collect survey data. We used the power of Windows Azure store the data and provide access from wherever you are. We developed a Windows 8 Application for monitoring purposes and Windows Presentation Foundation (WPF) Application for TaTaaNe Administration.

Technology Used: Bing, Windows 7, Windows 8, Windows Azure, Windows Phone

Inspiration: Surveys and polls are the main tools used by organizations working on key sectors related to MDGs (Millennium Development Goal).

Future Plans: We are currently in contact with the National Agency of Statistics in Senegal and we plan to use our solution during the next census of the Senegalese population with 15,000 on-site interviewers. We are also in touch with a NGO working in the Agriculture sector which plans to use our solution for their surveys operation.



CatchCake

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PROJECT: DRAC - Digital Radar Aided Care

DRAC is the abbreviation of Digital Radar Aided Cane. Though the name sounds like a mouthful it's actually a very simple idea turned into practice. The idea was to make use of, readily available, hobby wireless distance measuring sensors to help the visually impaired. We've created a device that is capable of sensing objects and letting the user know the position of the objects via audio signals. But the work is not all done by the device itself. Our solution uses a powerful ally, namely a Windows Phone. The Phone plays an important role in reading the data from the device and generating the desired audio feedback to the user.

Technology Used: Visual Studio 2010, Expression Blend, Team Foundation Server Online, Windows Phone SDK, Windows 7, Windows 8

Inspiration: Inspiration came from the fact that while solving global problems solely by relying on new technological solutions is very hard and usually requires social changes on a grander scheme, helping people with invalidity usually requires just a good idea and dedicated work from a small group of people. The specific solution we used was inspired by the widely used park assist technology in cars.

Future Plans: DRAC has two fields in which it could be greatly enhanced. The first is the detection itself. Though we have a good basic principle making the detection as precise and reliable as possible, needs a lot of time and experimentation. The second is the Windows Phone itself, more precisely the utilization of the capabilities of the phone. With time we could find many other ways how to utilize the huge potential lying in the Windows Phone itself thanks to its advanced imaging and computing capabilities.

AlphaWaves

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Mentor:
Gary Lim

PROJECT: DEMENTIA ASSISTANCE AND RECALL ENGINE (DARE)

Dementia Assistance and Recall Engine (DARE) is a web-based scrapbook designed to capture memories for the elderly and those suffering from dementia. The goal is to stimulate recall of past memories through photographs and other media that can be presented on a PC or tablet. DARE also employs an active link to user's brainwaves to analyse and make sense of their cognitive and mental abilities to help stimulate recall capabilities and allow them to be more focused in their current living environment.

Technology Used: Windows 8, Windows Azure, Windows Phone, .NET, Bing APIs, NeuroSky Mindset

Inspiration: We learned about dimentia from a friend's account of her grandmother. After hearing her story, we decided to set our sights on looking at how we could help dementia patients. Since then we have worked fervently to research and develop solutions that help current and future patients who are afflicted with dementia.

Future Plans: We are currently working with Eldercare institutions in Singapore for proof-of-concept and clinical trials. We plan to use this data along with input from medical professionals to refine the product and bring it to market.

Team OwNet

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PROJECT: OwNet

Team OwNet created an innovative project aimed to enhance the Web surfing experience, especially in areas with slow and intermittent Internet connectivity. We realize that Internet access is now required for all young people to gain skills and experience which they can build upon throughout their lives. Our goal is to improve access to information and in that way help improve education all around the World. OwNet brings faster and easier browsing of the Web even when the user is offline. The application automatically saves visited web pages. It also intelligently predicts the user's next moves and downloads web pages that he or she might be interested in. Individual OwNet applications communicate on local networks and allow their users to browse the shared web pages offline. The users can use various collaborative tools when browsing, they can rate and recommend web pages or share materials in their user groups. Thanks to OwNet, they can create their own personal offline Webs. We focused OwNet mainly for schools, because schools all around the World deal with problems with their Internet connectivity. There is often not enough connectivity to let all of their students surf the Web at the same time. Our application can be useful to minimize Internet traffic, enable surfing the Web during a temporary absence of an Internet connection and help people cooperate in searching for information and acquiring education.

Technology Used: Windows 7, Windows Server 2008, .Net Framework 4.0, SQL Server 2008 R2, WCF, WPF, Visual Studio 2010

Inspiration: Despite of the advancements in information and telecommunication technologies, slow and intermittent Internet connections are still a serious issue in many places of the World. There is no doubt, that the Internet has become a very important part of our everyday lives. We believe that providing access to information on the Web is crucial for young people, especially in developing countries, and OwNet helps make the Internet more accessible.

Future Plans: We are in progress of deploying OwNet to computer labs in several high schools in Kenya as well as in Slovak schools. OwNet can be installed and used by anyone because it is available as a product version with installation discs and manuals. Our future plans include development of OwNet and its personal version, which can be useful to individual users who frequently find themselves in situations without access to the Internet, e.g., people who travel often.

Osmosis

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Luka Vidoni
Faculty of Economics, University of Ljubljana
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Faculty of Computer and Information Science, University of Ljubljana

Mentor:
Matjaz B. Juric

PROJECT: Osmosis

Osmosis is a charity-based web platform designed to efficiently transfer funds and knowledge between the developed and developing world. The first phase of the project will focus on building infrastructure such as roads, schools, medical facilities, and water sources.

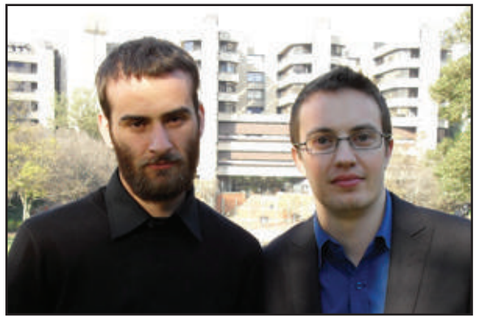
The platform works by encouraging individuals and orgainzations to help with devlopment projects by donating what they can. Individuals or organisations can apply for help on a project via our platform and get the community involved. An economist can donate her time by developing a grant proposal to help with funding. An organization can donate funds transparently and efficiently. A construction engineer can provide feedback on the design or suggest something completely different, more efficient and affordable. Users will be engaged on platform with personalized results of projects and challenges where they may have abilties and/or interests.

Osmosis also brings advances on a technological level. We have developed an algorithm that can, with a high degree of certainty, predict whether or not a project is genuine. We have introduced a way to provide a 3D image that reflects a current state of a project. Osmosis will be available as web platform, but users will also be able to access it with mobile phones, tablets and game consoles.

Technology Used: Asp.net MVC, Windows Azure, Bing Maps, Skydrive, Photosynth, Skype

Inspiration: We come from a little country in Europe, Slovenia, which was hit by a massive earthquake in 2004. Ordinary people from all walks of life gave up thier time to help a particularly heavily impacted region. That event inspired us to build the Osmosis platform. We want to export that "good will" to the World!

Future Plans: We want to revolutionize the term charity. We want to make it "cool". We want to make it part of our everyday lives. We believe our solution has great potential and will make a seismic shift - for the better - for people around the World that need our help.



Asclepius

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Mentor:
Duncan Coulter

PROJECT: Detecting Tuberculosis in Chest Radiographs using Image Processing Techniques

South Africa is estimated to have the third largest number of tuberculosis cases in the world, with only India and China having a higher number, according to the World Health Organization (2011). The high incidence of the disease in this region is sustained through a large number of new infections each year, with approximately one percent of the South African population developing tuberculosis infections annually. According to the United Nations Millennium Development Goals Report (2010) with regards to infectious diseases, worldwide tuberculosis remains second only to HIV in the number of people it kills. To address the tuberculosis problem a CAD (Computer-Aided Detection) system has been developed using GPGPU (General-purpose computing on graphics processing units) image processing techniques. This system is a test bench for image analysis that assists a radiologist in the diagnosis of tuberculosis structures in a chest radiograph by using Local Binary Pattern (LBP) texture classification methods. The parallelization potential of a GPU (Graphics Processing Unit) has been exploited to accelerate the image processing techniques utilized in the system, increasing patient throughput.

Technology Used: Windows 7, Windows Azure

Inspiration: The project started out as an application that statistically analyses the texture properties of arbitrary images such as tiles, clothing or paper. Using that data, areas were identified that are similar to other given samples. Once it was possible to identify and analyze those types of textures, this technique was applied to more complex textures, such as those that need to be analyzed in the detection of tuberculosis.

Future Plans: After the evolutionary development phase has been completed, further testing will take place during clinical trials. During these trials a larger database of training images will be acquired. A larger number training images will allow increased accuracy during analysis. Possible filtering techniques will also be explored. Another avenue to be explored will be macrostructure analysis, allowing the shape of the lung to analyzed before the statistics of the microtextures are observed.

SPAIN

HealthConnect

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PROJECT: Highway to Health

In the 21st Century, advances in medical techniques and infrastructure are occurring at full speed. Developed countries enjoy hospitals, the best medical care and medical diagnostics that can heal most of the population. However the situation in the rest of the world is very different. They don't have the same transportation infrastructure or medical facilities. The cost of medical attention is too high for many and there are too few doctors to treat all of the patients causing much of the population to rely upon NGO's to provide medical services.

Highway to Health gives medical volunteers and doctors a simple and efficient way to collect information from patients, perform remote consultations with specialists, monitor vital signs of patients and promote healthy habits. It also allows for remote consultations via videoconference with specialists for patients from disadvantaged areas.

Technology Used: Kinect, Silverlight, Windows Azure, Windows Phone, Bing Maps

Inspiration: Our motivation emerged from the need to facilitate access to health resources in the most disadvantaged areas of the world. The Imagine Cup gives us the opportunity to bring this idea to reality and to try to solve a real problem.

Future Plans: After the Worldwide Finals we are thinking of starting a business so we can continue to develop and improve "Highway to Health". We would also like to connect with NGOs, so they can tell us their needs and we could make their work easier. There are several months of intensive work ahead of us but we like to think that we can improve the lives of people.

SRI LANKA

V360

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Mentor:
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PROJECT: Back2Earth

Back2Earth is a mobile-based IT solution to aid Environmental Destruction Management. It is comprised of a mobile application to tag, monitor, run and evaluate a given problem through crowd sourcing and information sharing. It then transmits the validated data to relevant public authorities with interest in environmental protection. Whether it be tagging pollution, tree-cutting offenses, smoking vehicles, emissions or other forms of environmental destruction, Back2Earth can capture it all. Moreover, we have incorporated a gaming element to gather and retain the interest of social media users, through Facebook, to keep them alert and interested in contributing to a social cause where it be online or on-the-go. Anywhere, anytime, anyplace as long as you have a device that can access the Internet, Back2Earth helps you to support the protection of your environment. In an age where the world is driven by mobile apps, where people prefer living online and are highly focused on convenience, mobility and accessibility, we decided to make an IT-based environmental solution that is locally customizable, socially engaging for a significant cause and which is mobile and easily accessible!

Technology Used: Bing, Windows Phone, Silverlight

Inspiration: Decades ago, 14% of land was covered by rain forests. Today it's merely 6%. Our familiar environments and climates are changing to the detriment. Despite the efforts of many Organizations to counter this, destruction continues costing $15 trillion per year, with no substantial impact due to lack of person-level involvement. Thus our mission is to draw on busy individual lifestyles and the crucial role of social media to create an effective impact for a global cause.

Future Plans: To make the world a better place!

uCHAMPsys

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Mentor:
振興 王

PROJECT: uCHAMPsys

Physical inactivity and poor sleep have become BIG issues in the modern society and are strongly correlated to the chronic diseases such as heart disease, stroke, and diabetes. Many individuals do not realized how their lifestyle is impacting their health. To solve this problem, uCHAMPsys provides users with web-based tools to assess their personal health, in order to lead a better lifestyle. uCHAMPsys consists of a body sensor network, a user application software that executes in a PC or a smart-phone, a cloud-based server system, and an user-friendly interface.

Technology Used: Visual Studio 2010, Windows 7, Windows Phone, SQL Server

Inspiration: Limitations in data collected from existing activity monitoring tools make it difficult to fully analyze the relationship between an individual's activity and their health.

Future Plans: We plan to start a company providing health management services to individual customers through a direct and thru-partner model and to enterprise customers through other health management companies, sleep centers and health evaluation centers.

SOFTWARE DESIGN

Novitat

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PROJECT: TheSmartHouse

Aging society has raised concerns in many countries. The plan for satisfactory living standard for the elderly population will soon become global and national priorities. The Smart House is an assistance technology which is the best solution to one of the toughest problems as aging society. TheSmart House provides extra care or monitoring so the elderly can safely live alone, both temporarily and permanently.The design of the Smart House focuses on reusing the existing technology to which they are already familiar with so they can easily live without having to learn about the new, sophisticated tools. By doing so, it keeps the system's cost at a minimum. The system is designed based on the Pluggable Component Concept, meaning that the system might consist of several components. Each can work independently. This not only enables flexible implementation but also allows the whole system to function properly even when some components are down. The features of the smart house are medical consultation and long-distance social interactive monitoring.

Technology Used: Kinect, Skype, Windows 7, Windows 8, SQL Server, .NET Framework, Speech SDK

Inspiration: Advancement in medical technology has brought about a tremendous change to the lives of the human population. People are living healthier and longer lives. As a result, the ratio of the elderly population to the whole population in Thailand has been increasing. The elderly population ratio is expected to be increased to 1:4 in the year 2030. An aging Society has raised concerns in many countries and has been recognized as one of the toughest problems.

Future Plans: Since the Smart House was designed with Pluggable Components, the possibilities are limitless. We can plugin any modules to extend the capability of the system. For instance, one hospital recommened that we develop the rehabilitation management application to control and monitor rehabilitation therapy to restore patients to lasting good health.

Heroes come Back

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PROJECT: Call U

Call U allows disabled individuals, amputees and those suffering from Parkinson's Disease to use their smartphones without touching them by using voice commands. The idea is to enable users to assign voice commands of their creaion to any command within any given application. This way, users are able to customize the full set of applications installed on their smartphone. We enable the user to achieve this thanks to a cloud-hosted web application plus the help of a distant agent. Additionally, by using Kinect for Xbox 360, users can independently operate their smartphones remotely through gesture-driven commands.

Technology Used: Kinect, Windows 8, Windows Phone, Windows Azure, Microsoft TellMe

Inspiration: We were inspired by the implementation of Wii-U, from Nintendo. The communication between the Wii consol, Wimote, Wiipad and television made us think about how we could use the cloud to bring together the PC, phone and a Kinect sensor to solve the worlds toughest problems. The result was Call U.

Future Plans: Our next step is to search for companies interested partnering with our team to enahance and commercialize the solution.

Repharmers

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Mentor:
Nihat Adar

PROJECT: Repharm

Our main objective is to reduce the waste of medicine by reintroducing unused and unexpired medicine back into circulation. United Nations Millennium Development Goal 7 "Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources! Our initial desire is to ensure that surplus medicine should be used up by people before their expiration dates. When medicine is thrown into nature, it gives huge damage by chemically affecting the entire ecosystem. We believe that the outcome of this project will make the world a better place to live. Develop a Global Partnership for Development Goal 8 "In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries" Although the most effective way of treatment in health is medicine, it is quite expensive. So, sometimes it could be hard for people to buy medicine. What we want to achieve by means of this project is to help people have their medicine without paying any money. By our project the rest of unused medicine can be distributed to people, especially to those having low-income. In addition, when a natural disaster happens, the people who are affected can be helped by Medicine Collection Centers. Our second desire is to stock the medicine collected. Furthermore, if a country tends to assist other countries, we can send our stocked medicine to the requiring countries. By doing this, a cooperation will be easily created between the countries.

Technology Used: Bing, Windows Azure, Windows Phone, Asp.Net,HTML5, Silverlight, WCF Services, SQL Azure

Inspiration: Probably there are lots of boxes of medicine in all of our houses, and most probably their dates expire and become garbage. Our goal is to provide this leftover medicine to people in need. In order to increase awareness and ease of use, to build a business process automation and to spread such centers all over the world, we decided to build a medicine recycling platform supported by Microsoft technologies such as, Windows Phone7, Asp.Net, HTML5, Windows Azure Platform.

Future Plans: We are planning to open our platform to anyone who can use a recycling platform. In order to spread medical collection centers all over the country, we will propose our solution to the Health Authority of Turkey.

UGANDA

cipher256

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Mentor:
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PROJECT: WinSenga

WinSenga is an affordable mobile antenatal diagnosis solution implemented via a Window Phone. It comprises a modified Pinard Horn to which microphone is attached to detect and pick sounds which it feeds into the application. From this the application enables diagnosis to be carried out. The antenatal diagnosis is hence made timely, effective and most importantly, affordable. It can by used be medical personnel as well as expectant mothers, thus empowering them to monitor their pregnancies. However, WinSenga is also used to generate real-time statistical information on trends like Fetal Heart Rate (FHR) during labor, effectively substituting and/or complimenting the partograph. The application is localized to meet the respective communities' needs. In addition, the mother is educated on various issues regarding antenatal care and pregnancy and advice availed via the application. For medical personnel, the application allows them to store and monitor patient records in the cloud, receive information on new findings, among other services. It also avails useful statistics that stakeholders can use to mitigate various health issues.

Technology Used: Windows 7, Windows Azure, Windows Phone, Visual Studio 2010 Professional, Silverlight, XML Webservice

Inspiration: Just a stone's throw from our University campus is Mulago Hospital, the biggest hospital in Uganda, where antenatal care is subsidized but even then many expectant mothers can't afford it and even if they did, the Hospital is understaffed. Only 47% of Ugandan women receive antenatal care and only 42% of births are attended by skilled health personnel. The bottleneck we identified is cost of the service, human resource and lack of necessary skill-set, especially in rural areas.

Future Plans: Future plans include: Adapting the application to other platforms like Android, iOS and BlackBerry (This is to consolidate our main objective of saving as many expectant mothers' lives as possible, as well as those of their unborn children; hence, meeting MDG 5);Make WinSenga more than just an antenatal diagnosis tool by incorporating the functionality of other health diagnosis devices; and Partner with various NGOs and International Agencies to subsidize the price of the product.

UKRAINE

Quadsquad

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PROJECT: EnableTalk

The 21st century is the age of technology, the age of communication. More than 40 million people suffer from hearing and speech impairments. To communicate they use sign language. Alas, very few people understand them and they feel isolated. Our team has developed "Enable Talk " to solve the language barrier between sign language users and the rest of the world. A smartphone and a pair of our special sensory gloves is all that is needed. Now here's how our system works - the gloves capture hand movements and transmit the movement pattern - the sign - to the mobile device. Then our application matches the incoming pattern with stored signs and plays the sound for that sign. The first part of the process is capturing the hand movements. This is implemented by our sensory gloves. To do this we have equipped each of them with numerous flex sensors that capture finger movements, a compass, a gyroscope and an accelerometer which are used to define the position of the gloves in space. These sensors gather raw data and then transmit it to the microcontroller. The microcontroller then normalizes that data and transmits it to a mobile device via the Bluetooth module. That's where the signs are being recognized and matched to the existing signs and patterns. When a pattern is recognized, the text equivalent of the sign is generated. Then, using the Microsoft Speech API and Bing API the sound is played via the mobile device sound system. That's how we give voice to 40 million people. This is not the future - this is reality. Enable Talk - and the whole world will hear you.

Technology Used: Bing, Windows 7, Windows 8, Windows Phone

Inspiration: A while ago, in the supermarket we saw a cashier having difficulties understanding a speech impaired person and we thought how useful it would be to have a device to overcome this communication barrier. We were very surprised to find out that no such devices are available on the market. Later, our interaction with hearing-impaired athletes at our school confirmed that such a solution is needed for them to communicate more fully with the world. That is how "Enable Talk " was born.

Future Plans: Conceptual design of our system is complete, but there's obviously always room for improving efficiency, optimizing performance and driving down costs. We plan to pursue further development in those directions. Concurrently, we hope to attract some investment and start a company to be able to produce and sell our system to people who are in need of it.

SOFTWARE DESIGN

RevolUtion

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Shawn Frank
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PROJECT: Reutilizar

Petrol prices are on the rise and fossil fuel reserves are becoming more scarce. Biofuels have been touted as a viable alternative. Biofuels can be derived using kitchen waste, animal fats and carbon compounds, but currently only make up 0.04% of the worlds fuel production. There are many factors contributing to this small percentage including the following; people are not aware of what biofuels are and their power, people are not motivated to recycle, and biofuel plants only collect in bulk as it is not profitable to collect all the raw materials.

The reutilizar solution helps to remove the barriers limiting Biofuel production and adoption. Reutilizar helps individuals and organizations donate biofuel raw materials to local biofuel plants. This is made possible by the reutilizar phone app and the website. Users can register and donate while checking their progress. The more companies and individuals donate, they are eligible for rewards. Individuals who use the mobile app will also have the functionality to report a biofuel rich site. The more users in nearby regions report sites, that particular region gets marked off as a green zone and analysts are sent to extract the raw materials in those locations.

Here are some of the impacts the reutilizar solution will have:

- Reutilizar helps educate people and raise awareness for the issue of environmental sustainability.
- Reutilizar helps for promotes a healthy carbon cycle as biofuels burn cleaner and release less hazardous fumes compared to petrol.
- Unused food waste no longer ends up in landfills and water sources as pollutants while overall promoting a sustainable environment where we would not be too dependent on fossil fuels.
- The solution helps countries become independent as biofuels can be produced locally.
- Reutilizar gives rise to new and emerging industries therefore creating job and entrepreneurship opportunities.

Overall reutilizar enables the U.N millennium goal of environmental sustainability.

Technology Used: Windows Azure, Silverlight, Windows Phone, Windows 8, PHP, WCF Services, Microsoft SQL Server, .Net Microframework, Bing Maps

Inspiration: We are originally from India; a country with the world's cheapest car but the most expensive petrol prices. This left us wondering why petrol prices keep going up. Throught research, we discovered that the world has reached a stage of peak oil production. This along with the fact that Environmental Sustainability was a U.N. Millennium goal with the least progress, served as our motivation.

Future Plans: Well the first plan would be to catch up on some sleep before doing anything else. We have identified potential investors and have set up meetings after the Worldwide Finals. We are also in talks with some local biofuel plants to plan out logistics. Finally we plan to launch the solution with students in a cash for trash campaign.

Team EyeWorks

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PROJECT: Mobile Intelligent Retinal Analysis (MIRA)

Sight loss is a major issue throughout the world especially in the developing countries. The leading causes sight loss in the developing world are cataracts, glaucoma and age related macular degeneration. This is a major problem because the equipment required for detecting these disorders is expensive to procure and requires a well-trained human for diagnosis. The equipment is not portable or easy to maintain so it is ill-suited for developing countries. To solve these problems, we decided to build a solution that will be intelligent, cost effective, and provide a way to easily diagnose retinal images and help prevent sight loss.

MIRA is a combination of a physical lens attachment and software solution that can be installed onto any recent smart phone enabling diagnosis of various sight loss causing disorders. Apart from acquiring images, the mobile app will be capable of analyzing the acquired image. We call this process as an offline analysis. It will be done using neural networks due to the limited memory and computational capabilities of smart phones. A cloud platform using Microsoft Azure will also be used to store patient records along with an online analysis mode to make sure that the diagnosis done on the mobile phone is accurate.

Technology Used: Windows Phone 7.1, Windows Azure, SQL Azure, Solid Works, Rapid Prototyping, Microsoft C# with the ADO.Net open source scientific library, Microsoft Silverlight

Inspiration: The inspiration for the project came from the idea of doing an ultrasound probe that could run off a mobile device, however realising that Microsoft was already funding an identical project we decided to shift the idea to another area but we kept the notion of running off a mobile device. One of our professors upon looking at what we were doing for our final year projects suggested we attempt to turn a mobile phone into a fundus camera. Upon some investigation we came to the conclusion the idea was feasible and awesome :)

Future Plans: We have a long list of features we want to develop in the future. We would like to add more algorithms to detect additional eye disorders, skin conditions and mouth disorders. We would also like to expand to support more devices. The goal is to realease MIRA in developed countries first and then bring it to developing countries.

FlashFood

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Mentor:
Richard Filley

PROJECT: FlashFood

FlashFood is a smartphone application and website designed to reduce food waste and feed the hungry. When the manager of a business has leftover food at the end of the night, she can create a post on our network which will notify a group of volunteer drivers to pick up the donation and deliver it to a local community center, such as a school or church. Meanwhile, qualifying subscribers to the network will receive a text alert of when and where they can pick up the donated meals. Donating businesses will benefit have the option to leverage the "FlashFood Certification Badge" in their advertising to communicate their dedication to sustainability and social responsibility. While there are many food recovery agencies in operation, most require food to be frozen and pickup times to be scheduled days in advance. FlashFood will add flexibility for these existing agencies to manage unexpected and unscheduled food donations, allowing them to further reduce waste and safely transport more food to more people in less time.

Technology Used: Windows Phone

Inspiration: We want to reduce food wasted and feed the hungry.

Future Plans: We are incorporating as a business and will scale our operations worldwide.

Arbel

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Mentor:
Ricardo Casanova Nébola-Kopak

PROJECT: Arbel

Arbel is an interactive virtual whiteboard created to support education. It is operated through a computer, projector, Wii video game controler and an LED pointer. The whiteboard is augmented by a set of mobile, server and desktop apps that support the full learning scenario for students, teachers and administrators. Arbel Mobile, a windows phone app, provides easy access to all the information students and teachers may need for their academic term, the Arbel Admin tool handles all the relevant information for institution management and the Arbel Server application stores all the information for Arbel's system.

Technology Used: .Net, WPF (Windows presentation foundation), ASP.net, SQL server 2008, Windows Phone 7, Kinect, Nintendo's Wiimote

Inspiration: We are inspired by real needs from students and teachers on our campus. Our tutor Ricardo Casanova began the project as a class assignment. We used this foundation to develop the incredible system that is Arbel today.

Future Plans: We have several enhancements already planned. We want to eliminate the traditional notebook with Arbel Books. We want to bring universal education with Arbel Remote. We want to see kids playing with Arbel Kids and much more. We have plenty of ideas and work to do. Our goal is to change education as we know it. With Arbel, education will be anywhere, everywhere.

GP3S

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Mentor:
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PROJECT: GP3S - Public Problems Warning System

GP3S is a public warning system that citizens can use to alert authorities to threats and potential environmental risks. Through the smartphone and web-based applications, authorities receive the information and can address the problem, while also giving feedback to the community. Users access the application to search for daily problems, threats, potential risks that might influence their life. They receive information shared by other users or public agencies displayed visually on a map. When they witness an event that is necessitates a warning, they can easily enter the information in order to share the notice to the authorities and other users.

Technology Used: Windows Phone 7, Bing Maps, .NET Framework 4.0 (Microsoft Visual Studio 2010), Microsoft SQL Server 2008, Windows live SDK

Inspiration: Each day, we have to face problems, threats, potential risks that influence our life. We saw an opportunity to build a solution that helps people share warning information with each other and the authorities.

Future Plans: We would like to find sponsors for coordinating deployment of this system in Ho Chi Minh City, Vietnam. We would like to then deploy it in other areas in our country and possibly in other nations which have similar demands.

GAME DESIGN: XBOX WINDOWS

Game On!

The Game Design: Xbox/Windows competition asked student teams to create a game that is not only entertaining but also illustrates the 2012 Imagine Cup Theme. The Game Design competition is seen by industry and students alike as a terrific opportunity for learning and advancement towards these team's budding careers as game developers or entrepreneurs in the game business.

The finalist teams, profiled on the following pages each competed in three rounds of competition before being selected to advance to compete at the Worldwide Finals.

3-D or 2-D. Multi-level or single player. The structure of the games was up to each team. But the goal was related to one central thing: use technology to better the world. Games were designed to teach ways to improve the environment or increase overall health. The Game Design Competition made changing the world just a little more fun!

BELGIUM

Hotfix_Windows

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Howest Kortrijk

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Mentor:

Ptacek Mike

PROJECT: Hotfix

Influence introduces adolescents and young adults to the power of positive action. We all want to live in a better, cleaner, happier world. A world with solutions to the problems of pollution and violence against both man and nature. But no one seems to think that their own individual attitude can make a difference. The game is designed to show that starting within your own little circle, you really can cause a change for the better. Acting positively attracts other peoples' positive actions. One consistent little improvement, a helping hand, a flower planted, a tree cured, a simple smile offered grows exponentially into a big positive wave. People start copying each other's positive behavior. Influence allows the gamer to visualize and test this powerful concept.

Technology Used: XNA

Inspiration: We were mostly influenced by each other. By talking to each other, we were able to test our ideas and obtain something great.

Future Plans: We want to grow our game. Make a online community. By creating an online community, we will be able to grow our game and share it with many more users. We also want to produce extra levels where you will be able to create large cities.

BRAZIL

The Doers

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Universidade Positivo

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Mentor:

Michael Bahr

PROJECT: Do More

Our world suffers from several problems, and everyone can do their part on helping out. What truly makes a difference, though, is union. Through union, our intentions and efforts are magnified. That's when the real difference happens! Our objective with the game is to make our players aware that through union, every problem can be solved. We would like to encourage people's participation in this process, either by inciting donations to causes, or putting their own hands to work as volunteers, or even simply by changing their mindsets. Together, we do more!

Technology Used: Windows 7, 3ds Max, Adobe Photoshop, XNA Game Studio, Adobe Illustrator

Inspiration: Our team has seen in the Microsoft Imagine Cup the opportunity to make a change in the world! Games have great power do influence people because they can be fun! We hope that with our game, people can have fun at the same time they become aware of the world toughest problems.

Future Plans: The team intends to finish the game by implementing features which address issues not yet covered by the game: Maternal Health, Child Mortality and Nutrition Education. Furthermore, we would like to widely distribute the game in order to reach more people with our message of awareness.

GAME DESIGN: XBOX WINDOWS

CHINA

xidianembed_6

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Xidian University
Shuguang Li
Xidian University

Mentor:
Gang Yang

PROJECT: TaiJi

The team designed an interesting Kinect game, Taiji, to improve mental and physical health for elderly people. Standing in font of the Kinect sensor, your actions of playing Taiji are checked and evaluated by your computer, which makes it easy and funny to play TaiJi. Planying this game will ease of the loneliness and enhance the health for not only the old man, but also some yong people and national friends. What's more, Taiji represents a kind of Chinese culture and this game will promote cultural development and exchange.

Technology Used: Kinect

Inspiration: Currently, ageing of the population has become one of the toughest problems in the world. The problem of old men's loneliness and health has been a concern. Meanwhile, the cost of healthcare had increased in recent years. So, the team designed a Xbox/Windows game in order to mitigate the problem.

FRANCE

Nano

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Fabien D'oliveira
Supinfogame
Pierre Blanchon
Supinfogame

PROJECT: Nano

Nano is a fun and challenging game about the use of nanotechnology for medical purpose. Control Nano, the powerful Nano robot, is in a battle to save the human body. It collects sequences of genetic data on pathogens and destroys them. But beware, as the pathogens are extremely hostile and dangerous!!

Technology Used: XNA 4.0

Inspiration: Our main inspiration is a project (still under development) of creating minuscule robots through nanotechnology and sending them inside the human body. The use of Nano robots against pathogens could save millions of lives, therefore we strongly support it. However, we have noticed one major challenge: to most people, nanotechnology seems extremely complicated and even scary. We want to make people discover this wonderful project and see the benefits it could bring to the ones they care for.

Future Plans: Make the game as big and fun as possible, there is still so much to be done! Add new levels, challenges and enemies, plus some extra features that will make the player's experience as rich as possible.

GAME DESIGN: XBOX WINDOWS

ICELAND

Radiant

Team Members:

Haukur Steinn Logason
Reykjavik University

Sveinn Fannar Kristjánsson
Reykjavik University

Gudmundur Valur Vidarsson
Reykjavik Multimedia School

Axel Örn Sigurðsson
Reykjavik University

Mentor:

Daníel Sigurgeirsson

PROJECT: Roberts Quest

Robert's Quest is a singleplayer 2D platformer, set in the distant future where society has lost its connection to nature. The citizens of Westview Falls have become overly dependant on non-renewable energy sources, making their daily lives smog filled and miserable.

The story revolves around Robert, a squirrel, who is by chance cast into a journey of cleaning up the city by providing it with cleaner alternate energy sources.

Technology Used: Windows 7, Windows Phone 7, Microsoft Visual Studio, Skype

Inspiration: The team members are recent graduates of the Icelandic school system, we believe that many important concepts can be introduced and taught to students in a fun and interactive way.

We decided to make a game about the benefits of renewable energy. We believe that by introducing these very important concepts to children at an early age, we can encourage them to lead a more environmentally friendly lifestyle.

Future Plans: Radiant wants to design and produce, fun and innovative, games and tools which will educate the user. In the near future we want to finish our first title, Robert's Quest, publish it and work closely with schools in Iceland to get it featured as an appendix to children's courses.

JAPAN

Esperanza

Team Members:

Hitomi Sato
Vantan Game Academy

Shunta Nomura
Vantan Game Academy

Yositugu Maekawa
Vantan Game Academy

Mentor:

Kiichi Hirose

PROJECT: BLUE FIELD

On March 11th 2011, an earthquake occurred in Japan. This earthquake is called 2011 earthquake of the Pacific coast of Tohoku. Due to this disaster buildings collapsed and many people were moved into temporary shelters. Since then, due to the tsunami that came after the earthquake, many areas in Tohoku became a wasteland, mantled in a heap of rubble. Due to the vast support of various countries all over the world, the Tohoku area is thought to have regained peace. But in reality, even though a year has passed and memories of this disaster is starting to fade from peoples mind, many areas are left with the scars of the disaster. Heaps of rubble are not cleared and due to this many problems are yet to be solved. The first step of reconstruction is to remove rubble that covers the Tohoku area. Therefore, we have expressed this confronted mission in the form of game. Without disposal of rubble, new buildings can not be built, transport facilities can not be fixed. Reconstruction cannot advance. When playing this game, we wish people to not only to think about the rubble problem caused by 2011 earthquake of the Pacific coast of Tohoku, but also to think of various disasters and problems happening all around the world. As a record of incident, for people to feel disasters more close, and for to prevent the memories of disaster to fade, we have created a game based on a documentary, the new form of contribution to the society from the game industry.

Technology Used: XNA Game Studio 4.0

Inspiration: We have developed our project Blue Field, gaining inspiration from the 2011 earthquake off the Pacific coast of Tohoku. Seeking for what the game industry can do for the world, after experiencing such disaster, we have reached to the goal of "documentary game".

Future Plans: In Imagine Cup, we have achieved the first step of "documentary game". As next step we will be the speaker of "documentary game" as finalist of Imagine Cup 2012, spreading the genre of "documentary game". Our goal of "documentary game" is to inform our experience and knowledge of disaster across the whole world. This will become the new form of contribution from game industry, to the world

JAPAN

Team Blossom

Team Members:

Honoka Naiki
Trident College of Information Technology
Shiho Nonaka
Trident College of Information Technology
Shota Baba
Trident College of Information Technology

PROJECT: Bloom*Block

Bloom*Block is a 3D puzzle game based on the unicursal concept. We want our users, especially children, to feel the beauty of nature and the comfort of walking in nature in "Bloom*Block". And, we want children to have awareness of and interest in environmental issues.

Technology Used: XNA Framework

Inspiration: We can find many games focusing environmental issues. And, in my opinion, most of them appeal the need for protection of nature in a realistic way. However, we would like to appeal to people's sensitivities by creating scenes of a contaminated nature recovering beautifully as you play the game.

Future Plans: We want children to enjoy the game, and then connect with nature. So we plan to add to the variety of graphics, and implement the ability to collect medals and badges.

PORTUGAL

Red Phoenix Studios

Team Members:

João Alfredo Dias
Universidade da Beira Interior
André Barbosa
Universidade da Beira Interior
Pedro Pereira
Universidade da Beira Interior

Mentor:
Frutuoso Silva

PROJECT: Clean World

Clean World is a 3D game created with the purpose of producing awareness about environmental problems The game shows what we can do to protect nature and keep our planet clean from pollution. In Clean World, we combine a classical platform game with RPG elements, such as quests. The player receives several quests related with environmental problems to complete in order to progress in the game and storyline. These quests may range from picking up a specific item, completing a puzzle or completing a mini-game based on the theme of the game.

The game takes place on the Anglas islands, in the year of 2022. Due to the greed of big corporations, planet Earth is now completely polluted. People can't walk on the streets without breathing masks due to the polluted air, and the big cities became giant industrial complexes that try to explore to the maximum the last resources of a dying planet. On the remote island of Cypricene Kate, a 16-year-old girl, struggles against a disease that now affects almost the entire human population. Kate is alone on the island and she's too weak to get off, so she uses technology to find help. She ends up finding Boris, a small robot with unique abilities, and sends him in search of help. During his quest to aid Kate, Boris finds out that there is no antidote for the disease, since it's caused by the pollution. So, in order to save Kate, Boris takes on the task of cleaning the world.

Boris will then travel through the Cypricene islands, to clean the landscape, recycle objects and convert factories and machines to use clean energy. All this work will be done with skills that will be acquired during the game. These skills include transforming into a sphere to roll, absorbing solar energy to recharge, collecting garbage to recycle, among others that will be obtained as the player progresses in the game. By progressing within the game, environmental factors are impacted. Factories start using environment-friendly energy forms resulting in a cleaner environment and contribuitng to Kate's healing process.

Technology Used: Microsoft Visual Studio 2010, XNA 4.0

Inspiration: We need to realize as a society that it is necessary to protect the environment. But how can we do it? Well, what better way than to instill these values into children? They are the future of our planet, and their actions will depend on the values that we teach to them today. But how can we stress the importance of preserving and protecting the environment? The answer is simple: in a way that not only helps them understand, but is also fun. As game designers, this was our chance to help. Using our knowledge, we tried to create a game that was fun to play and that taught these important concepts to children.

Future Plans: We intend to create our own game development studio and finish Clean World. Much work remains, but since we've made it this far, we are sure we can make it to the end.

GAME DESIGN: XBOX WINDOWS

TANG Thai

Team Members:

Chanakarn Chinchatchawal
Mahidol University

Krittinun Sirodom
Mahidol University

Panawut Poungsin
Mahidol University

Sirisak Nakaviwat
Mahidol University

Mentor:

Srisupa Palakvangsa Na Ayudhya

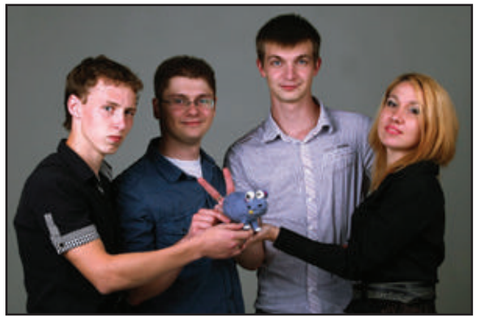
PROJECT: TANG Thai - Verdant Fantasy

Verdant Fantasy is a real-time strategy (RTS) game, developed to increase the youth population's awareness of the deforestation. The game depicts deforestation threats via various kinds of in-game monsters. For example, wood cutting and forest burning monsters. The player is a human who has been chosen by the Sacred Sprout, and has now become a Verdant Savior. Players need to command and support their comrades, the animals, in order to stop and chase out the evil robots from the forest. Meanwhile, they also have to protect the Sacred Sprout, which is the source of their verdant power. If the sprout is destroyed, the game is over.

Technology Used: Microsoft Visual Studio 2010, Microsoft .NET Framework 4.0, XNA Game Studio 4.0, Windows Azure

Inspiration: From "Millennium Development Goals (MDGs) - United Nations" GOAL 7: ENSURE ENVIRONMENTAL SUSTAINABILITY Target 7.A Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources "The rate of deforestation shows signs of decreasing, but is still alarmingly high"

Future Plans: We're planning enhancements to support multiplayer gaming and Microsoft Window tablet gameplay.



HammerBird

Team Members:

Olexiy Markarov
STEP Computer Academy

Zhenia Egorov
STEP Computer Academy

Natalya Panchenko
STEP Computer Academy

Gena Moroz
STEP Computer Academy

Mentor:

Alex Tumanoff

PROJECT: InBalance

The game is created for the purpose of teaching environmental awareness. It represents the interaction between man and nature and aims to teach responsibility. Players start with an area where the environmental balance between man and nature is violated. The effect is represented by natural habitat destruction, animal extinction, and lack of natural resources. By completing proposed missions, players are able to restore the natural balance. During the game it is necessary to develop new technologies that help industry transition to renewable sources of energy, recycling of resources, the use of "clean" materials. It is necessary to search and cultivate rare species of animals and plants. Players must restore and sustain the environmental balance of the planet. Society and nature represent a single dynamic system. Changes in one cause a change in the other to support the integrity of the whole system. We hope that our project increases environmental consciousness.

Technology Used: XNA

Inspiration: As a society, we need to teach environmental awareness from an early age. Only then will we have the broad support of public opinion to adopt a more environmentally-friendly public policy. Our team "HammerBird" decided to create a game which describes the environmental problems. We want to show to the people the significance of balance and harmony between nature and society..

GAME DESIGN: PHONE

Creativity is Just the Beginning!

The Game Design: Phone competition asked student teams to take advantage of the unique features available in mobile phones to create a game that is not only entertaining but also illustrates the 2012 Imagine Cup Theme..

The finalist teams, profiled on the following pages each competed in three rounds of competition before being selected to advance to compete at the Worldwide Finals.

The Game Design: Phone Competition gave students the opportunity to learn the art of mobile game design and enabled them to showcase their talents on the world stage. They responded creating games that are fun to play while teaching children math or providing awareness of global issues concerning environmental sustainability, health awareness and hunger. Plus there's always a little bit of fun built in when you design games!

Monkey Pepper

Team Members:

Diego Sato de Castro
Universidade Estadual Paulista Júlio de Mesquita Filho

Paulo Infante
Universidade Estadual Paulista Júlio de Mesquita Filho

Leandro Kamimura Saito
Universidade Estadual Paulista Júlio de Mesquita Filho

Rodrigo Yasuhiro Ueda
Universidade Estadual Paulista Júlio de Mesquita Filho

Mentor:
Danilo Balzaque

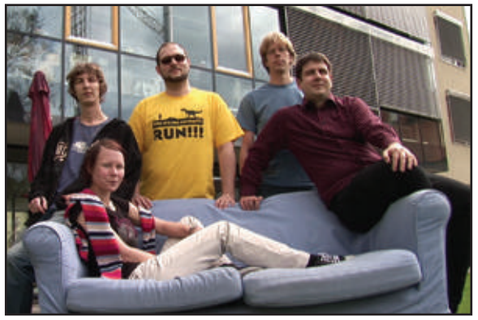
PROJECT: Little Changes

Our game is an adventure experience! It consists of 5 mini-games with different mechanics, concepts and challenges. The game tells the story of the Littles, a family that returns from their perfect vacation to be surprised by their careless hometown. As a result, they decide to get their hands dirty and turn the city into a more sustainable place to live. Little Changes is an immersing experience where the player can have fun and get inspired to practice small changes both in the game and in real life.

Technology Used: Windows Azure, Windows Phone, Microsoft XNA, Microsoft Silverlight, Microsoft Expression Studio

Inspiration: At our university we get to work on experimental and educational projects. We have the opportunity to get involved with people and social issues. The Imagine Cup is great opportunity for us to engage on a larger scale project where we can learn a lot. Maybe we can create something that inspires people to change in a way that improves our world.

Future Plans: We are planning on publishing the full game worldwide for free. We are working on social network integration and a blog where players can share the nice little changes they have made in their environment. It would be a dream come true to really make a difference and to see people get inspired by our project.



Wicked Games

Team Members:

Rudolf Kajan
Brno University of Technology - Faculty of Information Technology

Michal Zachariáš
Brno University of Technology - Faculty of Information Technology

David Jozefov

Martin Wilczák

Mentor:

Markéta Dubská

PROJECT: Yggdrasil: The Tree of Life

Yggdrasil: The Tree of Life is a real-time strategy simulation which takes place on a small planet with a tall tree — Yggdrasil. The players control the game's three tribes and help them to save the tree from destruction. On their quest to build a sustainable ecosystem, players learn the principles of natural resources conservation and environmental protection. All information is presented in a unique and innovative way - through augmented reality, which supports intensive communication among players throughout the whole game, since their decisions have influence on all parts of the virtual ecosystem.

Technology Used: Windows Azure, Windows Phone

Inspiration: Real-time strategy simulations have the ability to offer interactions among players and attract players' attention during longer periods - virtual worlds in these games continue to evolve and prepare new challenges for players. But unfortunately, most of these games are not fully aware of their potential - to educate players and to bring their attention to world's toughest problems. This is the main reason why we have created our project - Yggdrasil: The Tree of Life.

Future Plans: In the near future we would like to focus primarily on augmented reality component of the game. We strongly believe that augmented reality is a promising idea which can enhance the player's gaming experience by providing exciting new ways to control his actions. Despite their limited computation power, we think handheld devices are the best choice if we want to provide a truly immersive augmented reality experience for our players.

Ecosia

Team Members:

Timothée Graveline
ESTEI Bordeaux

Pernel Arthur
Ingesup

Julien Gossins
Ingesup

Julien Noble
Ingesup

Mentor:

Frederic Pedro

PROJECT: Ecosia

In a distant future, mankind polluted the universe but Doctor Ehka found a way to repair it, Ecosia, and gave Atmos the mission to clean up everything. Meet Atmos and help him clean up the universe. Lead Atmos to Ecosa terraform and play! There are no limits to what you can change. Will you find your way to the end? With more than 80 levels and a editor for the community, the possibilities are endless!

Technology Used: Windows Phone

Inspiration: We tend to take more and more from the environment without thinking that one day there wont be anything left. This is what we wish to show with Ecosia, a world that we didn't take care of. But it also shows that some people are ready to take the leap and fight for what's right. Atmos on his quest to clean up the planets will learn about recycling & atmospheric pollution. What we need is the motivation to not let this happen. All it needs is a little spark, something to show that not everything is lost.

Future Plans: We plan to port the game to Windows 8 devices so that it is released on Windows Phone and Windows 8 for everyone to play

FRANCE

Swifteam

Team Members:

Cyril Lacroix
Ingesup

Lejard Erwan
Ingesup

Antoine Bernard
Ingésup

PROJECT: Swifty Ball

Swifty Ball takes place in a world where waste gathers in landfills without being reused. The waste decides to gather into a ball and to go to the recycling factory, and players have to help this ball get there. The game player's job is to help the ball get to the recycling center. In order to help it, you have to use the physics and the gameplay elements to change the speed or the trajectory of the ball. As levels are acheived, the player is rewarded with tips about the situation in our world. We are particularly insisted in making this game fun because we know that we learn more when we're having fun.

Technology Used: Windows Phone

Inspiration: Society today wastes so many resources that could be used to help less fortunate people. That's the main reason for Swifty Ball's existence! Our game is a simple and fun way to get involved with recycling and energy conservation so we can provide for the less fortunate.

Future Plans: We plan to update the game graphics and sound, create more levels. Once we have implemented these updates, we plan to release the game on Windows Phone and then exend to other mobile platforms.

HUNGARY

Turtle Games

Team Members:

Márk Pintér
Moholy-Nagy University of Art and Design

Róbert Pregardt-Paur
Moholy-Nagy University of Art and Design

Dávid Kiss
Eötvös Loránd University of Sciences

Ádám Kapos
Eötvös Loránd University of Sciences

Mentor:

Krisztian Pellek

PROJECT: Rum Run

Rum Run is a strategy game, where the player controls ships and trades goods. The player has to supply food to a village using the profit made from trading rum and food. Helping the village with food provies the player upgrade points, which can be spent for example on new, faster ships or higher quality goods to sell or supply. We aim to raise awareness on poverty and hunger, to teach the basics of sustainable development and to show players how important it is to develop a global partnership. All of that in a really fun way.

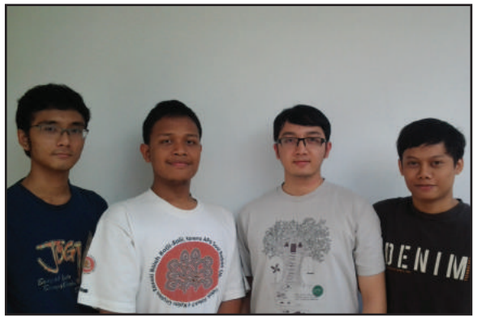
Technology Used: Windows Phone

Inspiration: Most would not believe, but nearly 49 million Americans, including more than 16 million children, do not have access to healthy, nutritious food on a regular basis. We think that this is a serious issue that is to be found everywhere in the world, including developed countries. We would like to raise awareness of this issue to the world and show that they can make a difference.

Future Plans: We are working on additional maps and an enhanced tutorial among many other smaller changes. We are currently beta testing the game with 100 players and we are shaping the game using their feedback for its best.

GAME DESIGN: XBOX WINDOWS

INDONESIA



Org.Com mobile

Team Members:

Hilman Hilman
Bandung Institute of Technology

Mahardiansyah Kartika
Bandung Institute of Technology

Alfian Ramadhan
Bandung Institute of Technology

Prisyafandiafif Charifa
Bandung Institute of Technology

Mentor:
Beren Hijak Beren

PROJECT: Cronus

Cronus is a Windows Phone game about a man who travels back to the past to prevent some of the worst ecological disasters in human history such as the Exxon Valdez oil spill and Chernobyl nuclear accident. Cronus is a puzzle physics game of the construction genre. There are two types of gameplay. The first gameplay goal is to make fluid flow from a source to it destinations. The second gameplay goal is to prevent people from getting hit by stones and to direct the stones to a warp machine. The player is given resources such as construction poles, pipes, and ropes to accomplish the tasks within a limited time.

Technology Used: Windows Phone, Scoreloop

Inspiration: Our inspiratin is from experiencing many ecological disasters in our country, Indonesia.

Future Plans: Our plan after the Worldwide Finals is to build in-app purchasing into our game , and to maybe add few more levels.

KOREA

Gaon Nuri

Team Members:

Chaill Kim
Soongsil University

Hanmilu Bang
Soongsil University

Ji Hoon Kim
Hanyang University

Suhyun Kim
Dongguk University

Mentor:
Amy Eunsung

PROJECT: KnockingHope

Knocking hope is a functional game which is targeted at the todays youth. Also, Knocking hope is under the theme of appropriate technology. We thought 'the hero who can change the world is student who will lead the next generation!' We decided to make a mobile game because we thought that it was the most effective way that we could let students know about appropriate technology. Appropriate technology is connected with the culture and environment of the Third World. It is in the spotlight as one of relief ways by advanced nations because it's not only cheap but also effective. Our team had thought that we needed to inform many people about appropriate technology. So, we made 'Knocking hope' to inform people more amusingly and closely about it. Knocking hope consists of 'village mode' and 'factory mode'. In the village mode, game provides 30 kinds of information about appropriate technology to users. Also, The main goal in this mode is to develop the village by building the store which sells technology. In other hand, factory mode has a story about five villages. In each village, children wait in line in order to get items which they want to have. Before they leave, users have to make the items for them. By total positive actions processed in the game, the happiness value and theme value is increased. With these values, users can know if the village is happy or not. The ultimate goal of our game is to increase the village happiness as much as users can.

Technology Used: Windows Phone

Inspiration: One of our team members learned about appropriate technology by travelling and another member by contributing a column on the environment. We heard again about it in the WHAF(World Hope Asia & Africa Foundation, NGO of Korea) secretary general's lecture. We were impressed by the fact that can help people with appropriate technology. So, We decided to change the world through it as game.

Future Plans: We will provide more information about appropriate technology in the game, add more features to village mode for user's pleasure (more decoration, more upgrades), add mini games about use of other appropriate technology in factory mode and upload user's achievement and information with SNS.

GAME DESIGN: XBOX WINDOWS

LITHUANIA

LevelUp

Team Members:
Gytis Valatka
Kaunas University of Technology
Justas Šalkevičius
Kaunas University of Technology
Liudas Ubarevičius
Kauno Technologijos Universitetas
Leva Auželytė
Vilniaus Academy of Art

PROJECT: Never Future

The main objective of this game is to show the player that it is very important to save the surrounding environment. It is important for us to unite to solve our ecological problems rather than focus on where to place blame. The game shows that only together we can achieve what seems to be impossible and that with the help of technology we can do anything.

Technology Used: Windows Phone

Inspiration: We were looking for a way to address the problem of increasing global pollution and people's alienation and indifference to environmental issues. Therefore, we present our game "Never Future " for the mobile platform. The game is fun and addictive. Through the involving story and unexpected game mechanics, the player is taught how to protect the environment and sort unsorted waste. Thus our game is not only a fun way to kill some time but it is also useful.

Future Plans: We will develop a more in-depth story experience and add more environmental actions within the game missions. Our goal is to draw attention to a wider range of environmental problems and their solutions. The game is scheduled for release with three episodes, which will reflect different scenarios: the worker, scientist and also business approach to ecology. In the future, we will increase the educational content in the game and improve the game mechanics.

ROMANIA

AVe

Team Members:
Grigoriu Alecsandru
Faculty of Computer Science, Universitatea Al Ioan Cuza Iasi
Victor Porof
Universitatea Al Ioan Cuza Iasi

Mentor:
Sabin Corneliu Buraga

PROJECT: CITYQUEST

CITYQUEST is an action game about raising awareness of osteogenesis imperfecta (a bone disorder) through player actions and social media interaction on Twitter. The players actions throughout the game are directed towards helping friends get well and dealing with diseases such as osteogenesis imperfecta.

Technology Used: XNA, Windows Phone, .NET REST API's

Inspiration: We were inspired by the U.N. Millennium Development Goals & the "Unbreakable" movie for "Brittle Bone Disease".

Future Plans: We want to publish the game to the Windows Phone Market and keep updating it based on player feedback.

GAME DESIGN: XBOX WINDOWS

Drexel Dragons

Team Members:

Keith Ayers
Drexel University

Matthew Lesnak
Drexel University

N. Taylor Mullen Taylor
Drexel University

Mentor:
Frank Lee

PROJECT: MathDash

Although math is a critical skill for succeeding in today's society, many students around the globe find themselves struggling to understand even math's most basic concepts. MathDash is a game that aims to fix this by providing players with an environment where they want to practice and get better at math. Traditionally students learning to solve math problems in school are forced to sit down and memorize common solutions. This approach has a fatal flaw, it unintentionally teaches our children that there's only one right answer. MathDash is a game that aims to remove this boundary by allowing a player to explore all possible solutions, by giving the player a continually changing, limited selection of numbers. A user quickly learns that by trying to solve any problem with only a single solution in mind won't always work. MathDash provides a fast-paced, rewarding gameplay experience that reinforces math skills taught to elementary aged students. It encourages players to approach problems from a different perspective, giving them an intellectual advantage by teaching them to think outside the box. At the same time, players of any age can enjoy the simple, engaging gameplay while competing for the highest scores.

Technology Used: Microsoft Visual Studio, XNA Game Studio 4.0, Windows Phone SDK, Microsoft Advertising

Inspiration: As computer science majors, math is an integral part of our daily lives. Seeing people struggling with math, we felt there had to be something we could do to help resolve this problem.

IT CHALLENGE

The IT Challenge was the ultimate test for students around the world to simulate running enterprise infrastructures while managing diverse customer needs and scenarios.

The IT Challenge competition highlights the art and science of developing, deploying, and maintaining IT systems that are efficient, functional, robust and secure. IT professionals work their way through custom needs and configurations that require an intimate understanding of how it will all fit together. They have to understand how far the systems can be pushed before they might break. Every business, organization, university, and government agency requires IT professionals who are proficient in these skills and abilities.

The finalists in the following pages have competed in three rounds of challenges including a 24 hour virtual hands-on lab. They have demonstrated great proficiency in the science of networks, databases, and servers, along with their keen ability to analyze and make critical decisions in the implementation of these technologies.

Sherif Talaat

Team Members:
Sherif Talaat
Modern Academy - Computer Science

Your Imagine Cup Experience
A long story short, I started my journey with Imagine Cup in 2006. In six years I was lucky to represent my country three times in the WW Finals in 2009, 2010, and 2012.

What I really like about this competition and what made me compete year over year is that IT Challenge helped me to increase my endurance, knowledge, and experience.

The Most Rewarding Part
It's an amazing feeling when you represent your country in such a competition. So, the most rewarding part is when I raise Egypt's flag on the stage

The Most Challenging Part
The most challenging part of this competition is the 24-hour of the final round. In these 24 hours sleeping and eating become optional things, our first priority is given to the technology.

Plans After the Imagine Cup
I learned a lot of things about cloud technologies like Windows Azure and Office365 during the Imagine Cup 2012 – IT Challenge competition. So, my plan will be developing my skills and talents in these new technologies.

Advice for Future Competitors
Imagine Cup is a unique opportunity to have a shiny future—don't waste it. Doing your best is the key to winning the Imagine Cup. All you have to do is trust yourself, unleash your talents, and work hard.

Alexandru Ticlea

Team Members:
Sherif Talaat
Modern Academy - Computer Science

Your Imagine Cup Experience
I participated in each of the last two years, 2011 and 2012, with good results. With the quality and number of participants, I was obliged to prepare and to hope for a place in the finals. It's a very tough competition, but very rewarding, especially in the final stage.

The Most Rewarding Part
Certainly it was when the finalists were announced. I had confirmation of a good project. I was very excited about the final challenge — the 24-hour hands-on-lab.

The Most Challenging Part
After each milestone, the judges announced that all competitors had done well. That forced me to be better. Technically all the tasks were difficult, but time was the greatest enemy.

Plans After the Imagine Cup
I'll look for an interesting job. I also plan to go to a few IT conferences to encourage other students to participate in the Imagine Cup.

Advice for Future Competitors
Learn. Read once, practice twice. Get inspired from real business cases.

Anything Else you Want to Tell the World?
Trust the people, not machines!

Joshua Sim

Team Members:

Joshua Sim
Nanyang Polytechnic School of IT

Your Imagine Cup Experience
The competition kicked into high gear once I received the Round 2 Case Study, the following weeks were spent delving into Microsoft Technical References and Microsoft TechNet to craft my Round 2 Essay for submission. I was overjoyed beyond belief that my Round 2 Essay was selected as the top six, followed by a brief moment of panic as I realized my practical knowledge was not up to scratch.

My preparations for Round 3 began immediately after the announcement, and I poured through installation guides on Microsoft technologies and services, trying out the various scenarios and finding the best way to apply them. Round 3 was definitely the most intense part of the competition, 24 hours of non-stop setup and configuration will test the mental of anybody in the competition, but I managed to fight through the fatigue and focused on the task at hand. The Imagine Cup 2012 IT Challenge has been an incredible journey in learning for me and if given the opportunity to return next year I will definitely do so.

The Most Rewarding Part
The learning experience that I gained and the friends I made during the course of the competition, will always remain in my heart. That is the biggest reward that I take away from this competition.

The Most Challenging Part
The most challenging part was definitely during Round 3, fighting off the effects of sleep deprivation while trying to troubleshoot an error was not the easiest thing to do. But a combination of adrenaline and coffee kept me from dozing off while in the competition.

Plans After the Imagine Cup
Currently I am in the middle of my Diploma in Information Security course at Nanyang Polytechnic, I plan on entering University once I complete my current studies.

Advice for Future Competitors
Preparation is key in this competition, don't forget to plan your schedule as it is easy to get sidetracked while practicing. The most important thing is to have fun and take regular breaks in between practicing sessions!

Anything Else you Want to Tell the World?
I would like to thank Microsoft and all the judges for the opportunity to compete in this wonderful competition and I hope to be able to participate in next year's Imagine Cup.

KINECT FUN LABS CHALLENGE

The Kinect Fun Labs Challenge asked students to think about entertainment with a social conscience and to bring the Imagine Cup into the living room. It is a unique opportunity for students to develop applications that change the world with the Fun Labs area of Xbox 360 and Xbox LIVE.

Each team submitted an application that leveraged the Kinect sensor to deliver natural user interface features such as skeletal tracking, speech recognition, face recognition, and gestures.

The finalist teams in the following pages have shown how Kinect can be used in creative new ways, from manipulating 3D models to helping patients of all ages rehabilitate injuries. See how their projects demonstrate what we call the Kinect Effect.

SPONSORED BY:

Microsoft® Studios

Interlab

Team Members:

Eduardo Sonnino
Universidade Estadual de Campinas

Keila Keiko Matsumura
Escola Politécnica da Universidade de São Paulo

Roberto Sonnino
Escola Politécnica da Universidade de São Paulo

Mentor:
Romero Tori

PROJECT: Fusion4D

Fusion4D is an innovative 3D user interface that lets users interact with 3D objects, allowing users to move, rotate and scale the models, explode them into their parts, and navigate in time to see what the objects would look like in different stages of its evolution.

Fusion4D is simple to learn and use: users can manipulate 3D objects using their hands and buy using speech commands. The system is based on low cost devices, such as Kinect, and it doesn't require any kind of special display for the 3D images.

Technology Used: Unity 3D, Microsoft Gadget Accelerator Kit, Kinect for Windows SDK, Microsoft Speech Platform SDK, Bing, Visual Studio, Skye

Inspiration: The inspiration for our project came from the needs of improving access to better education. We do believe that we can contribute to reduce the gap between traditional methods of teaching and technology, solving many problems like student motivation in class and access to 3D technologies by everyone.

Future Plans: We believe Fusion4D is a great candidate to become an actual Kinect Fun Labs gadget. Besides that, we are working with companies that are interested in integrating Fusion4D's concepts and technologies in apps, presentations and games.

Team Flexify

Team Members:

Adam Kuczyński
Adam Mickiewicz University

Michał Kulikowski
Adam Mickiewicz University

Piotr Kowalczyk
Adam Mickiewicz University

Tomasz Malesza
Adam Mickiewicz University

Mentor:
Marek Banaszak

PROJECT: Reh the Dragon

Reh the dragon is an interactive game in which children control virtual characters inspired by the story of "Dragon Girl". Our idea is to weave a series of exercises into the gameplay and generate the desire to do the next sets of trainings and explore the world. Moreover, our storyline gives sense to the performed exercises which are divided into chapters. Objects inside our game are placed randomly, so gameplay every time is a bit different - no one can memorize the sequences of moves. By the usage of Kinect sensor children can control virtual characters in reaching their goals while performing sets of exercises planned by physiotherapists. Our biggest innovation is to adapt the Kinect SDK so that it could be used with traditional treatment tools.

Technology Used: Kinect

Inspiration: The inspiration for this project was our friends daughter. She is 4 years old but she started to grow very fast and doctors told her father to do many kinesitherapy exercises; like bouncing on the training ball. Their everyday training was so boring that after some time her motivation was completely gone. This inspired us to solve this problem and make these exercises more interesting!

Future Plans: In close cooperation with physiotherapists, we are going to create a more complex exercise editor and new training levels which would use other rehabilitation tools. New training scenarios will be based on popular books among children. Moreover, the exercise engine which we have created, can be used also in other to prepare preventive exercises for all of the children. Growing sedentary lifestyle is also a problem and our solution could also lower scale of this problem.

Whiteboard Pirates

Team Members:
Austen Hayes
Clemson University
Patrick Dukes
Clemson University

Mentor:
Larry Hodges

PROJECT: Duck Duck Punch

Duck Duck Punch is a low-cost virtual reality rehabilitation game system for upper arm stroke therapy using the Microsoft Kinect sensor. The game scales to the participant's level of impairment and has been designed with usability in mind, based on feedback from stroke therapists and stroke survivors.

Current post-stroke motor rehabilitation is unable to significantly benefit the majority of stroke survivors and insufficient for the stroke survivors who are able to participate in therapy. Two components that could stimulate more motor redevelopment are extended therapy sessions with increased motivation (extended practice) and the perception of unimpaired movement controlled by the stroke survivor's impaired movements (action-observation). We developed a rehabilitation game that presents motivating tasks for patients to complete through movement of a virtual arm controlled by their own impaired arm using the Microsoft Kinect. By incorporating components not found in conventional therapy, we have created an engaging and visually stimulating therapy system which is accessible to more stroke-survivors and could increase rehabilitation through action-observation.

Technology Used: Kinect for Windows

Inspiration: We saw several problems with current stroke therapy that we could address by building a rehabilitation system using the Kinect. Since we knew nothing about stroke therapy, we collaborated with stroke therapy expert Dr. Michelle Woodbury to design a system that would extend and improve the way survivors are rehabilitated. Given the high cost and limited availability of current therapy, we also saw a need for a cost-effective system that could be used at home. We were excited to use the Kinect to design a system for the needs of stroke survivors.

Future Plans: Our system is currently being evaluated with stroke survivors for both usability and effectiveness at at the Medical University of South Carolina Stroke Center. Data from the first five participants show a significant treatment effect. We are currently working on the next version of our project with improvements based on both therapist and stroke survivor feedback. Our system is currently being evaluated with stroke survivors for both usability and effectiveness at at the Medical University of South Carolina Stroke Center. Data from the first five participants show a significant treatment effect. We are currently working on the next version of our project with improvements based on both therapist and stroke survivor feedback.

WINDOWS AZURE CHALLENGE

The Windows Azure Challenge asked students to build a web solution powered by the cloud and tested each team's ability to leverage the Window Azure platform features and services. The solutions combined originality and innovation with intuitive user experience to produce a highly polished end product.

The finalist teams in the following pages have demonstrated the power and flexibility enabled by cloud-based solutions. They help patients manage their diabetes, connect NGO's to potential donors and engage students and teachers in an interactive learning experience. They have proven they are ready to be a part of the next big thing in the technology industry.

ALGERIA

The Klein Team

Team Members:

Mohamed Amine Aboura
Hassiba Ben Bouali - Chlef University

Amine Mohamed Bounoughaz
IGEE Mhammed Bouguerra

Tahar ZANOUDA
The Higher School of Computer Science

Mentor:
Ali Rebaie

PROJECT: DiaLife

DiaLife is a healthcare platform that helps make diabetic patients and their families' lives easier and simpler by combining the elements of diabetes management into a software solution.

Technology Used: Windows Azure , Windows Phone , Windows 8 , Skype , Kinect , Twilio API ,ASP.NET MVC 3 , HTML 5 , Javascript

Inspiration: Through interviews with diabetic people we discovered the challenges they face on a daily basis. Our inspiration was to develop a a solution that helps them manage their challenges and live a normal life.

Future Plans: Following the Imagine Cup Worldwide Finals, we intend to launch a startup company and make the solution available for diabetic people around the world.

BRAZIL

Virtual Dreams Azure

Team Members:

Eduardo Sonnino
Universidade Estadual de Campinas

Roberto Sonnino
Escola Politécnica da Universidade de São Paulo

Mentor:
Bruno Sonnino

PROJECT: Eureka!

Eureka! is a system for creating and sharing interactive lessons that enables a motivating experience for students, as well as easy creation and presentation of the content by teachers. Eureka! brings the non-sequential learning model to the classroom, with many contents visible at the same time and the possibility to freely navigate among them, making the lesson more interesting, personalized and attractive. It also allows easy creation and customization of content, thus helping teachers to create better lessons for each specific student group. Eureka! offers an easy way to create compelling lessons for many devices, including Windows 8, Windows Phone, Kinect and the web, allowing teachers to show the content in an innovative way and capture the students' attention. All devices are fully synchronized through Windows Azure, allowing users to see their content everywhere and pick up from the same point where they were before. After the classes, students can explore and review the lessons in the same way they navigate the web, on their own devices, making studying an interesting task. Additionally, students can annotate the lessons in class or at home, and share information with each other. For more information, please watch our full video at http://bit.ly/eurekavid

Technology Used: Kinect, Windows 7, Windows 8, Windows Azure, Windows Phone, Silverlight

Inspiration: Lack of interest is a huge problem in education. According to the OCDE, about 25% of high school students abandon school before finishing their studies in developed countries. Several research studies show that the main reason for this evasion is lack of interest and not financial issues. Since we're all students, we know firsthand that there's still much to be done to better integrate education and technology in order to revert this situation, and that's how we were inspired to build Eureka!.

Future Plans: We believe Eureka! has an immense potential to impact education, and luckily many people who saw our project believe that too. We are already talking with schools and universities in order to put Eureka's ideas into the real world as soon as possible.

Complex

Team Members:

Bogdan Bondor
Universitatea Babes-Bolyai, Cluj-Napoca

Rosu Cristian Emilian
Technical University of Cluj-Napoca

Paul Stelian Sucala
Technical University of Cluj-Napoca

Mentor:
Simona Motogna

PROJECT: Seedbit

Seedbit is a web application stored in the cloud that, in a fun way, brings regular people, companies and NGO's together around shared social causes. It is the first platform that makes doing good things interactive, social, fun and rewarding. The long term goal of Seedbit is to educate people to` get involved in causes they share empathy with and overall, raise public sense of responsibility and awareness.

Technology Used: Kinect, Windows 7, Windows Azure, Windows Phone, Bootstrap, .Net Framework 4.0 MVC3

Inspiration: Bill Gates said "If you show people the problems and you show people the solutions they will be moved to act." Seedbit brings this idea a step forward by linking specific problems with the right people in order to make a difference. There are a lot of people that would want to get involved in charity, but they just don't know how. It seems like there is a great potential wasted for reasons that could be very easily taken out of the equation, leaving room for great people doing great things.

Future Plans: We started developing a new feature for Windows Phone that provides augmented reality. Imagine walking on the street with your friends, taking out your Windows Phone and pointing the camera to the brand new building across the street: animated tiles of you and your friends appear on the sky, over the building, as a reward for your good will. This is an innovative feature, offering a brand new user experience.

WINDOWS METRO STYLE APP CHALLENGE

Windows 8 is coming, and with the Windows Metro Style App Challenge, students have been asked to take the lead in creating applications for this new platform. This Challenge has tested students' ability to design and build a Metro style app that takes advantage of Windows 8 features and design principles to deliver an experience that wows users across the globe.

The finalist teams have delivered apps that unite people together around a cause, battle malnutrition and enable students and educators to collaborate for a better education experience. Apps are the center of the Windows 8 experience and the finalist teams have demonstrated the power of great apps.

SPONSORED BY:

Windows

Virtual Dreams Metro

Team Members:

Eduardo Sonnino
Universidade Estadual de Campinas

Roberto Sonnino
Escola Politécnica da Universidade de São Paulo

Mentor:
Bruno Sonnino

PROJECT: Eureka!

Eureka! is a system for creating and sharing interactive lessons that enables a motivating experience for students, as well as easy creation and presentation of the content by teachers. Eureka! brings the non-sequential learning model to the classroom, with many contents visible at the same time and the possibility to freely navigate among them, making the lesson more interesting, personalized and attractive. It also allows easy creation and customization of content, thus helping teachers to create better lessons for each specific student group. Eureka! offers an easy way to create compelling lessons for many devices, including Windows 8, Windows Phone, Kinect and the web, allowing teachers to show the content in an innovative way and capture the students' attention. All devices are fully synchronized through Windows Azure, allowing users to see their content everywhere and pick up from the same point where they were before. After the classes, students can explore and review the lessons in the same way they navigate the web, on their own devices, making studying an interesting task. Additionally, students can annotate the lessons in class or at home, and share information with each other. For more information, please watch our full video at http://bit.ly/eurekavid

Technology Used: Kinect, Windows 7, Windows 8, Windows Azure, Windows Phone, Silverlight

Inspiration:Lack of interest is a huge problem in education. According to the OCDE, about 25% of high school students abandon school before finishing their studies in developed countries. Several research studies show that the main reason for this evasion is lack of interest and not financial issues. Since we're all students, we know firsthand that there's still much to be done to better integrate education and technology in order to revert this situation, and that's how we were inspired to build Eureka!.

Future Plans: We believe Eureka! has an immense potential to impact education, and luckily many people who saw our project believe that too. We are already talking with schools and universities in order to put Eureka's ideas into the real world as soon as possible.

WINDOWS METRO STYLE APP CHALLENGE

TokTok

Team Members:

Jua Kim
Dongduk Womens University

Jihyun Kim
Sung Kyun Kwan University

Won Jun Kim
KyungHee University

Jung Ki Moon
Inha University

Mentor:
Seungwoo Lim

PROJECT: Hapeanut

The ultimate goal of Hapeanut is to inform people that the peanut is a relief food and to help them grow peanuts effectively in a fun way. With the help of Hapeanut, users will grow peanuts in real life. We provide various functions to help them grow peanuts successfully. This application allows users to write a 'peanut-diary'. Push notifications keep the users updated with what they have to do in order to grow peanuts successfully. Push notifications have many useful information for the users such as the weather information and proper actions that users have to take for the peanuts of different ages. Users can gain information on how to cultivate peanuts from the 'Library' menu. Also, in this menu, users can learn various nutritional values and benefits of peanuts. And, in this Library, we introduce our project's object of saving people from starvation. People will understand that growing peanuts can save lives of the people threatened by starvation. Users can cultivate peanuts effectively and may have excess to donate to others. Furthermore, Hapeanut informs people about how the peanuts users grew can actually save people's lives. When users write peanut diaries, they receive imaginary peanuts as many as the number of diaries they write. Visuals show users about how many people can be saved from the imaginary peanuts they have. Also, users can see the number of peanuts gathered by all the app users around world. The application displays the number of saved people calculated from the number of gathered peanuts. It keeps the users aware of how many children can be saved from the amount of peanuts they grew. We also created a community space where people can interact with each other about growing peanuts to save people's lives. The Community menu displays the map that shows the locations of the users who are growing peanuts to help them cooperate.

Technology Used: Windows 8

Inspiration: About 30,000 people die every day from starvation and malnutrition. Over 50 percent of them are children. In short, a child dies every 3 seconds from starvation and malnutrition. So, we imagined that we can help people who are starving around the world. We found a way to help them with the relief food - the peanut. So, we imagined the world where "Hapeanut" helps people to realize the reality of world problem and let them have the motivation for cultivating peanuts.

Future Plans: We have a plan to help users grow peanuts and actually donate them to the people in need. We will provide users ways to donate their peanuts to social welfare companies and NGOs. We're working on ways to send peanuts grown to social welfare companies and NGOs where they are processed as a relief food. We're also working on ways to send feed-back to users about how their peanuts were used and how many people were saved by them. These processes give people sense of accomplishment and promote their interests in saving people suffering from starvation and malnutrition.

nLife

Team Members:

Alexander Titov
Taurida National V.I.Vernadsky University

Marlen Arifdjanov
Taurida National V.I.Vernadsky University

Osman Gafarov
Taurida National V.I.Vernadsky University

Mentor:
Yevgen Taran

PROJECT: Solvee

There are many different problems in the World today: social, medical, natural and others. Our project "Solvee" was created to help people work together to overcome the existing problems of local, regional or social nature. Each person can report about a problem, and society can help him to solve it. As well as society, any organization can help to solve the problem. The organization can demonstrate the quality of its work, improve ranking and get feedback by solving certain problems. Information is collected and presented to the user in a convenient form. Any organization or person can keep track of a certain type of problems and timely response them, and by analysing the statistics, generate reports, update their work and development.

The application we are developing works on Windows 8, uses the best possible integration with the system and applies Metro style design. All these problems are stored in the cloud - Windows Azure.

Technology Used: Windows 8, Windows Azure, Windows Phone

Inspiration: The main point, why we decided to create this project is helping people around the world. The fact is that now our society is fragmented, and we all live separately. We wanted to make project that will unite people and help them find the necessary help to solve their problems.

Future Plans: Most importantly - to launch the project. Bring it to the state when it is really helping many people around the world. After that, we want to attract organizations and open regional offices.

WINDOWS PHONE CHALLENGE

The Windows Phone Challenge encouraged students to create software that can really make a broad impact in the world. This competition was all about originality, appeal, and being out-of-the-box.

The Windows Phone applications that are featured in the following pages definitely scream originality, have major consumer appeal, and integrate unique mobile-oriented features to help the visually impaired read, monitor users' overall health or to improve the flow of medical information. The teams have proven that their technical ability and innovative ideas are worthy to be in the top three. Now all there is to know is who will be the champion.

SPONSORED BY:

NOKIA
Connecting People

Vivid

Team Members:

Kariem El-Shazly
University of Ain Shams, Faculty of Computer and Information Systems

Mohammed El-Orabi
University of Ain Shams, Faculty of Engineering

Nour El-Dien
University of Ain Shams, Faculty of Engineering

Mentor:
Fady Fawzy

PROJECT: Health Buzz

Health Buzz consists of two main parts: a mobile application that physicians can use to access a patient's electronic medical records, and a cloud-based storage system that is inexpensive and doesn't require additional hardware.

The frontend is a Windows Phone app. Users (physicians, patients and pharmacists) can access the electronic medical records using an internet connection. They can retrieve, manipulate and save data to the cloud.

The backend is a cloud computing service based on Windows Azure. This service helps to retrieve, manipulate and save medical records (data). Utilizing a cloud service help us to achieve one of the solution's main goals: building cost-effective solution with the available hardware. The solution is provied through mobile phones, cloud service and low-cost subscriptions.

Technology Used: Windows Azure, Windows Phone, Silverlight for Windows Phone, Visual Studio, Expression Studio: Blend, Encoder, SketchFlow

Inspiration: In our country, Egypt, public hospitals are the main provider of the healthcare service and they lack the resources to invest in IT infrastructure. As a result, patient medical records are saved manually in paper files. Paper-based medical records lack data integrity and do not allow for effient access by helthcare proveders.
This inspired our team to think about offering the medical records to the physicians via mobile phones, instead of depending on PCs.

Future Plans: We have been encouraged us to start our own business with this project. After our team qualified as finalists in the Windows Phone Challenge, we became more eager to move our idea and our project to the next level: the real business world. There are some opportunities in our country and some companies that offer support for startups. The feedback we have received to date has been very encouraging and promising. Our first step is project incubation. We will do our best.

Aaltovation

Team Members:

Apurva Jaiswal
Aalto University School of Science

Gitanjali Sachdeva
Aalto University School of Science

Irena Prochkova
Aalto University School of Technology

Maimuna Syed
Helsinki Metropolia University of Applied Sciences

Mentor:
Teemu Tapanila

PROJECT: MotherCare

MotherCare is a 9 month pregnancy guide which keeps a time track of a woman's pregnancy and provides her relevant information on nutrition and diet, fitness, symptoms, baby's growth stages, dos and don'ts etc. All this information can be accessed without the need to connect to internet. Users can listen to all the information using the text-to-audio feature of the app. We have tried to provide the information in the user's native language and based on native health conditions in different countries. The app has a timeline feature through which user can record their symptoms, notes and reminders throughout her pregnancy in the form of text and pictures. All the records can be browsed in the app, and can also be mailed directly to her doctor. The app also takes care of her psychological well-being by providing her happy tips (baby names, baby pictures, books and movie suggestions). In case of an emergency, the app has a single click calling feature to the emergency contact set by the user. There is also a discussion forum where users can discuss issues and problems with each other. We also plan to collaborate with doctors to respond to the queries on the forum. The app alerts users about disease outbreaks and information about maternity health care in different countries by receiving localized push notifications from World Health Organization. They can also receive health suggestions from native doctors with the help of push notifications. To enable use in less developed areas, NGOs can provide a community phone which can be used by several women using the multi-user feature. To enable use in areas of low literacy, the app has text to speech feature in native language, large icons for easy navigation and picture password feature for privacy.

Technology Used: Windows 7, Windows Azure, Windows Phone

Inspiration: We all love our mothers and share a special bond with them. Imagine Cup gave us a chance to do something for mothers all over the world. We decided to aim at United Nation's goals of improving maternal health and provide a solution through MotherCare. The infant mortality rate is quite high in third world countries. Pregnant women suffer from lack of proper guidance and immediate action during emergency situation. We tried to imagine their plight and solve their problem.

Future Plans: MotherCare has been our prime focus since we started working on it. We are looking for investors to help us develop MotherCare further. We plan to collaborate with various hospitals and NGOs to help us launch MotherCare in different countries so that we can maximize our user base. We will be taking feedback from pregnant women in order to improve the app accordingly.

POLAND

The Stack

Team Members:
Karol Stosik
Gdansk University of Technology

PROJECT: ZZ Braille Reader

ZZ Braille Reader is an application that enables visually impaired people the ability to read texts (ebooks, notes) on a casual smartphone using Braille alphabet. Files are synchronized with user's SkyDrive account. ZZ Braille Reader has innovative interface, it can be used without any problems by both people who can and who can't see.

Technology Used: Windows Phone

Inspiration: I wanted to create a project that is overstepping the boundary of today's applications. I wanted to help handicapped people because they have many problems that informatics can solve.

Future Plans: My application is available at the marketplace for free. In the future, with cooperation with a bigger company it is possible to create the whole operating system adjusted for visually impaired users.

CHALLENGE AND COMPETITION CAPTAINS

SOFTWARE DESIGN

Rob Miles
Lecturer in Computer Science, University of Hull

I've been involved in the Imagine Cup since the very first world final in Barcelona in 2003. I've seen first-hand the great things that students have achieved in the competition and the way that taking part can change their lives. From my early days as a mentor I now take part in the judging, which means I get to see all the amazing things that students come up with. And I love that. The Imagine Cup provides a fantastic place for you to develop programming, management and presentational skills. If you want to show how well you can develop and present an imaginative idea you should head for the Imagine Cup Software Design Challenge.

GAME DESIGN: XBOX/WINDOWS
GAME DESIGN: PHONE

Andrew Parsons
Sr. Developer Evangelist, Microsoft

Andrew Parsons is a Senior Academic Technical Evangelist working with Client Technologies, based out of Redmond. Andrew has over 20 years experience in the IT industry, as a software developer, web designer, games and technology journalist, and more. He has written a dozen books on different technologies and is passionate about video games and what they can do beyond simple entertainment. Andrew has been heavily responsible for the growth of the Game Design competition in Imagine Cup, leading the way to introduce more teams to the world finals and enlisting the help of the world's elite in the games industry for judging and giving great feedback back to the student competitors.

IT CHALLENGE

Rand Morimoto
President and CEO, Convergent Computing

Rand is an industry expert on Microsoft technologies who has written over 3 dozen bestselling books, most recently Windows 2012 Unleashed and System Center 2012 Unleashed. Rand keynotes and leads over 50 conferences and conventions around the world each year. Dr. Morimoto is the former cyber-security advisor to the White House, is a Trustee on the Governing Board for St. Mary's College, and Board member for the NASA affiliated Chabot Space and Science Center planetarium and science museum. This is Dr. Morimoto's 8th year as Captain and Head Judge of the Microsoft Imagine Cup IT Challenge Competition.

IT CHALLENGE

Chris Amaris
CTO, Convergent Computing

Chris has been in the computer industry for over 25-yrs and is a bestselling author of several books including System Center Enterprise Suite Unleashed, Windows 2008 R2 Unleashed and Exchange 2010 Unleashed. Chris leads some of the largest global consulting engagements in the world. This is Chris' 8th year as a Captain of the Microsoft Imagine Cup IT Challenge Competition, and brings a wealth of knowledge and experience to the competition!

KINECT FUN LABS CHALLENGE

Dan Waters
Producer, Microsoft

Dan is a Producer at Microsoft Studios (formerly Microsoft Game Studios), building technology to help create living room entertainment experiences for the Xbox 360 and Kinect. Dan has been involved with the Imagine Cup since 2007, most recently in 2011, where he served as the Windows Phone Challenge Captain. Dan's areas of expertise include software development, XNA, mobile applications and games.

WINDOWS AZURE CHALLENGE

Jennifer Perret
Principal Program Manager, Microsoft

A 16+ year Microsoft veteran, she has worked as a Software Developer in Test, a Software Developer, and a Program Manager. She has shipped over 12 Microsoft products during her tenure. In her current role, with the Windows Azure Strategic Adoption team, Jennifer supports Microsoft's billion dollar customers onboard to the Windows Azure Platform.

WINDOWS METRO STYLE APP CHALLENGE

Jura Clapman
Program Manager, Microsoft

Jura has been with Microsoft for 11 years. For the last three years, she has been working in the Windows division helping to ship Windows 7 and seeing Windows 8 come together. This year in Imagine Cup 2012, the Windows division is proud to put its product in students' hands and challenge them to build innovative solutions to world problems. The entries received for are truly impressive and she is proud to attend the Worldwide Finals to meet the finalist teams and congratulate them in person on their great work.

WINDOWS PHONE CHALLENGE

Jukka Wallasvaara
Developer Evangelist, Microsoft

Jukka has been in the industry for over 15 years and has worked with Mobile platforms, Azure and .NET during that time. Jukka has been working tightly with Academics the past 5 years at Microsoft and has been involved with Imagine Cup competitions. He brings a great support for students to this year's Windows Phone Challenge where everyone has huge opportunity not just compete but also learn during the process. Jukka is a trusted advisor for companies building Windows Phone solutions and acts as the global captain and judge for the Microsoft Imagine Cup 2012 Windows Phone Challenge.

Microsoft would like to thank the following judges for their support of the Imagine Cup 2012 Worldwide Finals

SOFTWARE DESIGN

Dennis Anderson	*Chairman and Professor of Management and Information Technology at St. Francis College*	United States
Dr. M. Balakrishnan	*Professor and Deputy Director at IIT Delhi*	India
Jose Barata	*Researcher, Uninova*	Portugal
Guillaume Belmas	*Software Solutions Division Manager at vNext*	France
Maria Bielikova	*Vice Dean and Professor at Faculty of InformaticsIT on Slovak Technical Univercity in Bratislava*	Slovakia
Ahmad Yusoff bin Hassan	*Vice Chancellor at Universiti Teknikal Malaysia Melaka (UTeM)*	Malaysia
Beata Bochińska	*President of Industrial Design Institute, Warsaw*	Poland
Sally Buberman	*Co-founder of Wormhole IT*	Argentina
Tiago Oliveira Machado de Figueiredo Cardoso	*Researcher, Uninova*	Portugal
Nannette Cutliff	*CIO, Pacific Service CU*	United States
Amnon Dekel	*Chairman, The Department of Software Engineering, Shenkar College*	Israel
Meziane Djaout	*Economist, Planning Direction, Snatraach Exploration Division*	Algeria
Greg Elphinston	*Director, Sustainability Innovation Fund at Nokia*	Finland
Stephen Forte	*Chief Strategy Officer at Telerik*	United States
Ann Q. Gates	*Associate VP Research, Professor Computer Science at University of Texas*	United States
Samer Geissah	*Vice President, Technology, Network Development, Core and Value Added Services*	United Arab Emirates
Kate Gregory	*Founding partner, Gregory Consulting*	Canada
Samuel González Guzmán	*Founder and Executive President of Fundación E*	Mexico
Andrew Hamilton	*CEO, ICEHOUSE*	New Zealand
Ed Happ	*CIO, International Foundation of Red Cross and Red Crescent Societies*	Switzerland
Dr. Gaurav Harit	*Assistant Professor of Computer Science & Engineering, Indian Institute of Technology Rajasthan*	India
Ed Hooper	*Strategy Manager, Groupon Australia*	Australia
JoZell Johnson	*Global Manager, Intel Higher Education Program*	United States
Yong-Guk Kim	*Professor in Computer Engineering, Sejong University, Head of Sejong Business Incubator, Head of Sejong App Creator (supported by Korean Government)*	Korea
Jeremy Kirk	*Foreign Correspondent*	Australia
Martin Kulov	*Managing Director, CodeAttest; Microsoft Regional Director*	Bulgaria
Ying Liu	*Lecturer in School of Software Engineering Beijing Jiaotong University*	China
Ignacio Lopez	*CoFounder, Wormhole IT*	Argentina
Florian Matthes	*Chair Software Engineering for Business Information Systems*	Germany
Rob Miles	*Lecturer, University of Hull*	United Kingdom
Sébastien Monteil	*CTO, Kobojo*	France
Kotaro Nakayama	*Assistant Professor of Tokyo University*	Japan
Wilson Ng	*Software Design Engineer II, Microsoft Corporation*	Hong Kong
Wemba Opota	*VP Delivery & Chief Technology Officer, Axxend Corporation*	West and Central Africa

SOFTWARE DESIGN *continued*

Domagoj Pavlešić	*Owner, founder and CEO of Web-ideja d.o.o.*	Croatia
Dmitry Peskov	*Head of Young Professionals Branch, Agency for Strategic Initiatives*	Russia
Guilherme Ary Plonski	*USP Faculty - Business Adminstration /Scientific Coordinator - Technology and Policy at USP*	Brazil
Nick Randolf	*Founder & Owner, Built to Roam*	Australia
Riadh Robbana	*Professor in Computer Science, INSAT, Tunisia*	Tunisia
Diomidis D. Spinellis	*Professor in the Department of Management Science and Technology, Athens University of Economics and BusinessDirector of the Information Systems Technology Laboratory (ISTLab)*	Greece
David Strom	*Writer, ReadWriteWeb*	United States
Etienne Tremblay	*Associate Director, Microsoft Technologies at DMR, une division de Fujitsu Conseil (Canada) inc*	Canada
Andrey Ustyuzhanin	*Researcher at Yandex LLCAssociate Professor at Moscow Institute of Physics and Technology*	Russia
Tijmen van de Kamp	*Solution Architect (Director Application Development Avanade Netherlands)*	Netherlands
Adam Wengert	*Avanade*	Australia
Guy Wolleart	*CTO, Coca-Cola*	United States
Maria Mercedes Zaghi	*Business Development at Campus Tec (plus other two)*	Guatemala
Brownwen Zande	*Director, Soul Solutions (ISV) & Microsoft MVP Bing Maps*	Australia

GAME DESIGN – PHONE

Lea Bartlett	*Project Manager / Programmer at StudioAIE Head of School Canberra AIE / Programming Course Coordinator AIE at AIE*	United Kingdom
Kevin Dent	*CEO, Tiswaz Entertainment*	Japan
Patricio Jutard	*CTO, Three Melons Studio*	Australia
Kiyoshi Shin	*Freelance Journalist*	Argentina
Vincent Vergonjeanne	*Co-Founder - VP Products & Strategy, Kobojo*	France

GAME DESIGN – XBOX/WINDOWS

Gordon Bellamy	*Executive Director, IGDA*	United States
Nichol Bradford	*Director of Operations, Blizzard China at Blizzard Entertainment*	United States
Julian Gerighty	*Intellectual Property Development , Ubisoft*	France
Larry Hryb	*Director of Programming for Xbox Live, Microsoft*	United States
Adam Sessler	*Co-host of X-play and editor-in-chief of G4s game network w/ZDNet*	China

IMAGINE CUP AWARDS

ENVIRONMENTAL SUSTAINABILITY AND HEALTH AWARENESS AWARD

Sponsored by Coca-Cola

Together, Microsoft and Coca-Cola are proud to present the Imagine Cup 2012 Health Awareness Award and Environmental Sustainability Award for projects that tackle fitness, well-being and ecological issues.

Environmental Sustainability Award
One of the many ways in which students are changing the world is by creating solutions that help our planet continue to be inhabitable for a very long time to come. Technology will be critical to those solutions and we are looking forward to seeing what the Worldwide Finalist teams have done to encourage environmental sustainability in their projects.

Health Awareness Award
The health of an individual fundamentally impacts their quality of life and, in many cases, the quality of life of those around them. It has been found that, by improving health awareness and conditions around the globe, one can change the world for the better – both physically as well as economically. This Award recognizes Worldwide Finalist team projects that, in some way, help improve health awareness and conditions whether for an individual or a community.

One winning team for each Award will be announced on stage at the Worldwide Finals and will receive $10,000 USD!

At Coca-Cola, innovation and sustainability are the tenets of business continuity. Their partnership with Microsoft to support Imagine Cup is a way they can continue to invest in young people, and in the economic, environmental and social development of communities around the world.

PEOPLE'S CHOICE AWARD

Sponsored by Bing

Each year we ask the world to vote for the Imagine Cup entry that they think is the coolest. The People's Choice Award is the only Award in the Imagine Cup where the winning team is chosen by the general public. The People's Choice Award is a great opportunity for all Imagine Cup 2012 Finalists to share their work with a global audience.

To vote or view videos from the Worldwide Finalist teams, check out www.ImagineCup.com/PCA. The winning team will be announced on stage at the Worldwide Finals and will receive $10,000 USD.

Bing is pleased to be a co-presenting sponsor of this year's People's Choice Award. The search of the future can't look like the search of today because the web has changed fundamentally. Bing needs the next generation of innovators to be thinking about what it should look like. Like the Imagine Cup participants, Bing faces enormous challenges that can only be solved through ingenuity, failure, and ultimately perseverance.

COOL PROGRAMS FOR STUDENTS

CONNECT WITH US BEYOND THE IMAGINE CUP!

The Imagine Cup is just one of the programs from Microsoft designed to empower student technologists to achieve their hopes and dreams in both their personal and professional lives. Other programs include:

DreamSpark is simple; it's all about providing students with Microsoft professional-level developer and designer tools and training - at no charge. For more information, visit **www.dreamspark.com**

Microsoft Student Partners is a global initiative that provides university students who have a passion for technology with real-world skills and resources to help them prepare for successful careers. For more information, visit **www.microsoftstudentpartners.com**

Microsoft Students to Business Program helps students obtain the skills and competencies needed for an IT career through learning resources and connections to local Microsoft industry partners. For more information, visit **www.microsoft.com/studentstobusiness/home**

Microsoft Student Certification Offers help students improve their resumes and differentiate themselves from students competing for the same IT jobs. For more information, visit **www.microsoft.com/learning/student-career/en/us/career-offer.aspx**

Microsoft IT Academy connects the world of education to the world of work by enabling students to acquire new technology skills in an academic setting. Find the IT Academy contact at your school.

For more information, visit **www.microsoft.com/Education/MSITAcademy/ITAPLocator.mspx**

Faculty Connection is a resource site for technology educators that offer access to Microsoft® software, curriculum resources, the latest research and videos of academic relevant topics. For more information, visit **www.microsoft.com/faculty**

Check out **www.microsoft.com/student** for more information on these programs and other student offers.

WORLDWIDE IMAGINE CUP SPONSORS

We would like to thank the following companies and organizations who have helped make Imagine Cup 2012 possible.

PREMIER PARTNER

NOKIA
Connecting People

Nokia is a global leader in mobile communications whose products have become an integral part of the lives of people around the world. Every day, more than 1.3 billion people use their Nokia to capture and share experiences, access information, find their way or simply to speak to one another. Nokia's technological and design innovations have made its brand one of the most recognized in the world. For more information, visit www.nokia.com.

SUPPORTING SPONSORS

avanade®
Results Realized

Avanade provides business technology solutions and managed services that connect insight, innovation and expertise in Microsoft technologies to help customers realize results. Our people have helped thousands of organizations in all industries improve business agility, employee productivity and customer loyalty. With more than 17,000 Microsoft certifications across our talent pool, operating from more than 60 locations in 20 countries, we are the best in the business on Microsoft platforms and applications. For more information, visit ***www.avanade.com***

bing™

Bing is for people who do; for people like you who are always doing more. Whether online or in the real world, Bing gives you results you can trust that will get you quickly from searching to doing. Bing is for doing. For more information, visit www.bing.com

Bradesco

Bradesco is one of Brazil's largest financial institutions, with a presence in each one of the country's municipalities through a comprehensive structure that includes the largest branch network of the private banking system. Bradesco has over 105 thousand collaborators, about 65 million customers, and has been considered one of the world's 10 most valuable financial brands in a recent survey carried out by The Banker/Brand Finance. For the fifth consecutive year, Bradesco has partnered with Microsoft for the Imagine Cup. For more information, visit ***www.bradesco.com.br***.

Coca-Cola

The Coca-Cola Company is the world's largest beverage company, refreshing consumers with more than 500 sparkling and still brands. Led by Coca-Cola, the world's most valuable brand, our Company's portfolio features 15 billion dollar brands including Diet Coke, Fanta, Sprite, Coca-Cola Zero, vitaminwater, Powerade, Minute Maid, Simply, Georgia and Del Valle. Globally, we are the No. 1 provider of sparkling beverages, ready-to-drink coffees, and juices and juice drinks. With an enduring commitment to building sustainable communities, our Company is focused on initiatives that reduce our environmental footprint, support active, healthy living, create a safe, inclusive work environment for our associates, and enhance the economic development of the communities where we operate. For more information, visit www.coca-cola.com.

Microsoft® Studios

We built Kinect to revolutionize the way people play games and experience entertainment. Along the way, people started using Kinect in innovative (or transformative) ways. From games and entertainment to healthcare and education, amazing people are doing amazing things with Kinect. From helping children with autism, to helping doctors in the operating room, people are taking Kinect beyond games. And that's what we call the Kinect Effect. For more information, visit www.xbox.com/kinecteffect.

Windows®

With "Windows 8", Microsoft has created a new and beautiful Metro style interface, which lets you find the information important to you, embodies simplicity, and gives you control. They've built it for touch from the ground up to help you do what you want quickly and naturally. Most importantly, Windows 8 was built to give passionate developers a platform to create a whole new generation of full-screen apps that are based on modern web standards. For more information, visit http://windows.microsoft.com/en-US/windows-8/consumer-preview.

LOCAL IMAGINE CUP SPONSORS

Country/Region	Sponsor Name	Website
Australia	City of Sydney	www.shfa.nsw.gov.au
Australia	HP	www.hp.com.au
Australia	Powerhouse Museum	www.powerhousemuseum.com
Australia	Targus	www.targus.com/au/
Australia	Toshiba	www.toshiba.com.au
Bahrain	Asus	http://ae.asus.com/en
Bahrain	eGovernment Agency	www.ega.gov.bh
Bahrain	Wamda	www.wamda.com
Bahrain	Zain	www.bh.zain.com
Bangladesh	GPIT Ltd.	www.gpit.com
Bangladesh	Telephone Shilpa Sangstha Ltd.	http://tss.com.bd
Bulgaria	Haemimont AD	www.haemimont.com
Bulgaria	Telerik	www.telerik.com
Canada	Polar Mobile	www.polarmobile.com
Canada	University of Waterloo	www.uwaterloo.ca
Canada	Xtreme Labs	www.xtremelabs.com
Côte d'Ivoire, Senegal	AXXEND	www.axxend.com
Côte d'Ivoire, Senegal	Full Technologies and Formation	www.ftf.sn
Cyprus	Bionic Electronics HT Ltd	www.bionic.com.cy
Cyprus	Kiss FM	www.kissfm.com.cy
Cyprus	Philelefthеros	www.philenews.com
Czech Republic	Jihomoravské inovaní centrum	www.jic.cz
Czech Republic	Nokia	www.nokia.cz
Czech Republic	Smartmania	http://smartmania.cz
Czech Republic	Technet.cz	http://technet.cz
Czech Republic	TECHNOLOGICKÉM CENTRU Hradec Králové	www.tchk.cz
Ecuador	Conquito	www.conquito.org.ec
Ireland	Invest Northern Ireland	www.investni.com
Kazakhstan	Nokia	http://kz.nokia.com
Kuwait	Asus	http://ae.asus.com/en
Kuwait	Burgan Bank	www.burgan.com
Kuwait	Kuwait Foundation Advancement Sciences	http://kfas.org
Kuwait	Wamda	www.wamda.com
Kuwait	Zain	www.kw.zain.com
Oman	Asus	http://ae.asus.com/en
Oman	Information Technology Authority Oman	www.ita.gov.om
Oman	OmanTel	www.omantel.om
Oman	Wamda	www.wamda.com
Pakistan	HEC – "Higher Education Commission of Pakistan"	www.hec.gov.pk

Country/Region	Sponsor Name	Website
Pakistan	IIU – "International Islamic University", Islamabad	www.iiu.edu.pk
Pakistan	NUST – "National University of Science and Technology"	www.nust.edu.pk
Peru	Magia Digital	www.magiadigital.com
Peru	Municipalidad de Miraflores	www.miraflores.gob.pe
Peru	Nokia	www.nokia.com/pe-es
Portugal	Fundação EDP	www.fundacao.edp.pt
Qatar	Asus	http://ae.asus.com/en
Qatar	Ebla	www.eblacorp.com
Qatar	Qatar Foundation	www.qf.org.qa
Qatar	TumuhaTEC	www.ictqatar.qa/en/tumuhatec
Qatar	Wamda	www.wamda.com
Russia	ABBYY	http://abbyy.ru
Russia	Agency for Strategic Initiatives	http://asi.ru
Russia	AskCap.ru	http://askcap.ru
Russia	Kaspersky Labs	www.kaspersky.com
Russia	Open Skolkovo University	www.sk.ru
Russia	Russian Venture Company	http://rusventure.ru
Saudi Arabia	Saudi Hollandi Bank	www.shb.com.sa
South Africa	BBD	www.bbd.co.za
South Africa	Council for Scientific and Industrial Research (CSIR)	www.csir.co.za
South Africa	Department of Science and Technology (DST)	www.dst.gov.za
Spain	Santander Universidades	www.santander.com/universidades
Thailand	Chan Wanich Group	www.chanwanich.com
Thailand	KBank	www.kasikornbank.com
Turkey	Casper	www.casper.com.tr
Ukraine	DELL	www.dell.ua
Ukraine	EMOZZI	www.emozzi.com.ua
Ukraine	LIPTON	www.lipton.com/ua_uk
Ukraine	NOKIA	www.nokia.com/ua-uk
Ukraine	SMARTHOLDING	www.smart-holding.ua
United Arab Emirates	Asus	http://ae.asus.com/en
United Arab Emirates	du	www.du.ae/en
United Arab Emirates	Dubai Internet City	www.dubaiinternetcity.com
United Arab Emirates	Wamda	www.wamda.com

NOTES AND CONTACT INFORMATION

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Russia Welcomes You to the World Championships of Innovation: Imagine Cup 2013
Россия приглашает вас на международные соревнования по инновациям: Imagine Cup 2013

Dreams can come true – with the help of technology. This statement is proven year over year by young talented students from all over the world while competing in the Imagine Cup. Next year, this renowned challenge will take place in the cultural and innovative centre of Russia – Saint Petersburg city.

It is the first time Russia will host Microsoft's annual global student innovation competition, once described by Bill Gates as "the Olympics of the software world'. The Imagine Cup has inspired a generation, with 1.65 million students from over 190 countries participating in the competition during the past decade.

Microsoft is deeply committed to student innovation, which is why we see St. Petersburg as a natural choice for Imagine Cup 2013 because the city lives and breathes the values inherent in the Imagine Cup competition: innovation, entrepreneurship, optimism and a strong belief in a better future for everyone enabled by technology.

Russian computer science and technology students from many local universities have participated in the Imagine Cup competition from the very beginning, demonstrating their tremendous potential to the world. A Russian team from Moscow Institute of Physics and Technology and Moscow State University won first place in Software Design in 2005, and in 2008, 2009 and 2010 Russian teams were amongst the top three qualifiers in various categories. The Imagine Cup is in our DNA, that's why hosting the world finals next year is a natural choice for both Russia and Microsoft.

I wish you all the best as you compete at the Imagine Cup 2012 Worldwide Finals! I hope to see you, your teammates, mentors, and others from your country at the 11th annual Imagine Cup celebration at the 2013 Worldwide Finals in St Petersburg, Russia next year.

Good luck! Удачи!

Nikolay Pryanishnikov
General Manager, Russia
Microsoft Corporation

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