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SCHOOL OF COMPUTING
Faculty of Engineering

TECHNOLOGY AND INFORMATION SYSTEM

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Industrial Visit 1 – MAGICX UTM

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Introduction and Details of the Visits

On 7th October 2019, we had visited the Media and Game Innovation Centre of Excellence (MaGICX) which organized in T03, Level 1, University Industry Research Laboratory (UIRL), Universiti Teknologi Malaysia. This event started at 2.00pm until 5.00pm. Our faculty, that is faculty of Computing had participated in this event. It was around 30 of our faculty's member had took part in it accompanied by our lecturer, Dr. Zuraini. We were given three hours to visit the booth.

We realise that Technology is a body of knowledge devoted to creating tools, processing actions and the extracting of materials. The term 'Technology" is wide, and everyone has their way of understanding its meaning. We use technology to accomplish various tasks in our daily lives, in brief; we can describe technology as products and processes used to simplify our daily lives. We use technology to extend our abilities, making people the most crucial part of any technological system. Technology is also an application of science used to solve problems. But it is vital to know that technology and science are different subjects which work hand-in-hand to accomplish specific tasks or solve problems.We apply technology in almost everything we do in our daily lives; we use technology at work, we use technology for communication, transportation, learning, manufacturing, securing data, scaling businesses and so much more. Technology is human knowledge which involves tools, materials, and systems. The application of technology typically results in products. If technology is well applied, it benefits humans, but the opposite is true, if used for malicious reasons. Many businesses are using technology to stay competitive, they create new products and services using technology, and they also use technology to deliver those products and services to their customers on time and within budget.

Figure: Media and Game Innovation Centre of Excellence (MaGICX)

A. MAGICX Background Introduction

Before we visited all the projects by MAGICX, we were briefed by Dr. Wong, one of the research officer in MAGICX. He explained that MAGICX is actually stands for Media And Game Innovation Centre Of Excellence. It was established in 2013. The main point that they were doing was about media and game development. He also said that MaGICX is actually a strategic cooperation between Universiti Teknologi Malaysia (UTM) and Iskandar Regional Development Authority (IRDA) to support and promote the development and ecosystem of creative industry that focuses on gamification and enrichment of digital content. Then, after he introduced about the background of MAGICX, he explained about the main product of MAGICX. One of them was Augmented Reality (AR) technology that being used for kids learning and also some kid training . Next, he also explained roughly about Kinect Interactive Wall that can be used for sports and education training despite for games and also for information tracking only. After that, they also develop some games in mobile and apply gamification in systems such as in E-learning. At this moment, MAGICX have one project and they have a project with industry for health executive system in web development. They also have some expertise and MAGICX also did the training course by inviting the students and also industry to join the course and provide the certificate also. Example of the courses are android development, Kinect and others. The services provided by MAGICX are training to be a technopreneur and help them in marketing. Then, they also provide service for intellectual property, which is for patent and copyright of product.

MAGICX's vision is to be the anchor for Games and Gamification industry & the nucleus for Iskandar Malaysia Innovation Valley while the mission is to provide necessary support and technical expertise in research, business development, publishing, marketing and training for industry players to develop commercially viable products and services.

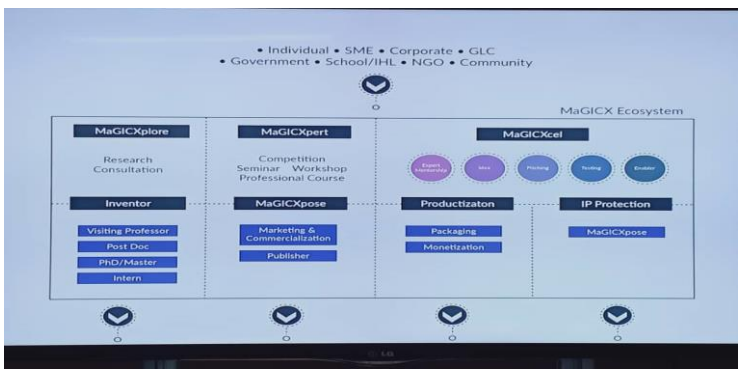


Figure: Introduction Background of MAGICX

B. Exhibition on 3D printer

In this industrial visit to MAGICX UTM, we had visited the exhibition on three dimensional (3D) printer. The 3D printing process builds a three-dimensional object from a computer-aided design (CAD) model, usually by successively adding material layer by layer. The term "3D printing" covers a variety of processes in which material is joined or solidified under computer control to create a three-dimensional object,[4] with material being added together. The printing process can be broad explained in three phases: pre-processing, production and post-processing. In pre-processing, the blueprint of the object is created. A digital model of the object needs to be created using computer-aided design (CAD) software, or any animation software. This file is fed to the printer is anstereolithography (STL) format. Followed by production process. In this stage, the printing process takes place. Suitable materials are added to the printer, and the printer will deposits layers of these material to create the object. During this process, various types of filaments are used to print the object such as ABS filament and PLA filament. All the filaments have different colours and properties. For few filaments had been shown, the filaments are available in black, orange and purple colour. For information, ABS filament has a greater tenacity when compared to PLA filament while PLA filament has a high line precision that can print out more-detailed object. The temperature of ABS filament is 220℃ while the temperature of PLA filament 190℃. In post-processing phase, the additional material deposits on the object are cleared. Thus, the final 3D printed object is created.

Figure: The 3D printer and PLA Filament

C. Driving Car Simulation

Driving simulators are used for entertainment as well as in training of driver's education courses taught in educational institutions and private businesses. They are also used for research purposes in the area of human factors and medical research, to monitor driver behavior, performance, and attention and in the car industry to design and evaluate new vehicles or new advanced driver assistance systems. In MAGICX we've also visited the UTM Driving Car Simulation. The simulator is based on the UTM campus map. And it is developed by the students of School of Computing and School of Mechanical Engineering. They said the last update of the simulator was made of July 2018. There is no clear idea that if they are going to use it as business purpose and launch it for all. Till now it is using as educational purpose. The simulator is so nice and features are good. The only problem is the high sensitivity. That's why it's difficult to control the car for beginners. For information, the simulators are available in various types such as car simulator, modular-design simulator, multi-station driving simulator and so on. The car simulator were used to train and test novice drivers in all the skills required to pass a driver's license road test as well as hazard perception and crash risk mitigation.

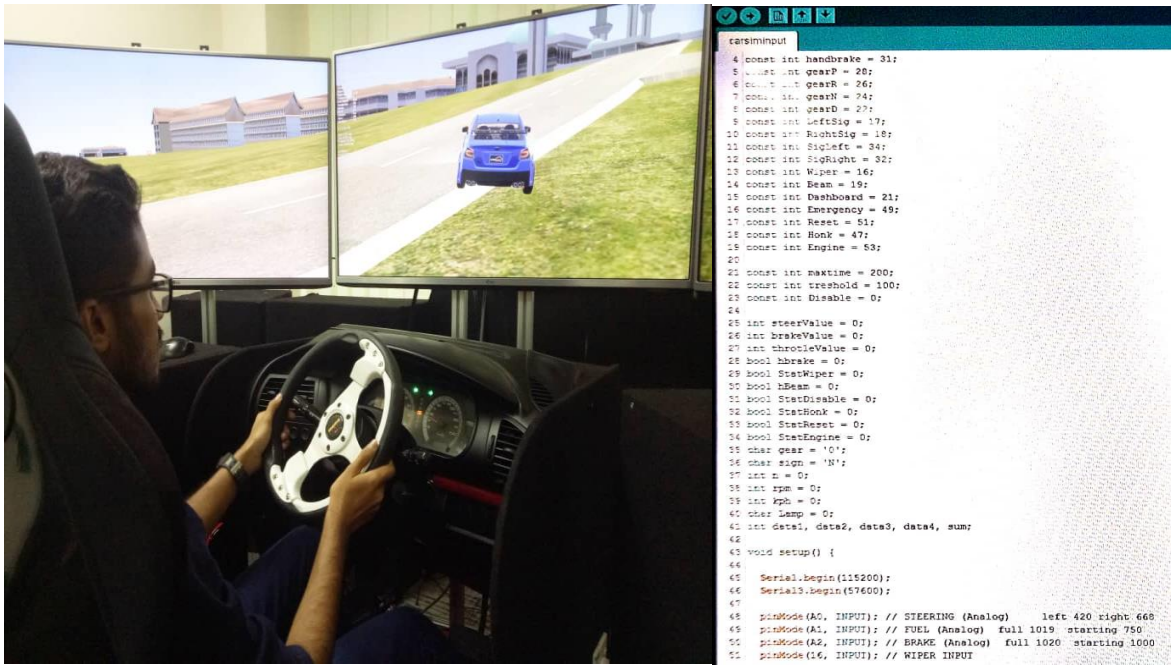


Figure : Driving Car Simulator and Programming

D. Explanation on Kinect Interactive Wall

The element of interactive on the wall featuring the latest information, news, information on funds and grants, ePerkhidmatan, customer satisfaction, department or agency in accordance to their cluster, key performance index (KPI) and enjoy the game using depth motion sensor technology. Kinect Interactive Wall by MagicX is the next generation gesture tracking platform with endless possibilities. This Kinect product is developed by MaGICX UTM under Ministry of Sciences, Technology And Innovation.The Microsoft Kinect is a peripheral that was introduced for the XBOX360 in 2010 and was developed to be the motion controller for their games.

Secondly, this innovation was capable to function with the gesture of user hand which is using sensor to detect the movement of the user hand's. At first, it will detect the user face's by standing in front of the screen which is sensor is allocate below of the screen to detect the user face's before the user can access the information. After that, the sensor will detect the movement of user hand. The selection of information will pop out on the screen and the sensor will follow the hand movement. Next, the sensor will detect the choosen information made by user then click at the information. By that, the information choosen will display on the screen.Then,the user can started playing games such as paper plane game. This made this wall looks so interactive and very useful innovation.

Besides that, there have some of information were programmated in this Kinect Interactive Wall. As an example, there have information about the background of MaGICX itself. In addition, there have also Islamic information in this technology called as Rabbani media which is coincides with their slogan " Dakwah Melalui Teknologi ".Lastly,V3X Malaysia SDN.BHD and COOL CODE also one of the selection of the information programmated in this wall.

Figure: Kinect Interactive Wall

E. Demo on Virtual Reality of Oculus Quest

On September 26, 2018 Oculus VR announced a stand-alone virtual reality headset named "Oculus Quest" which launched at retail on May 21, 2019. The device uses the same Oculus Touch motion controllers used in the Oculus Rift S, and features displays with a resolution of 1600 x 1440 per eye, and an option to adjust the lens spacing. Launch price was 399 USD for the 64 GB version and 499 USD for the 128 GB variant. The Quest is powered by the Qualcomm Snapdragon 835 mobile chip. While the computer built into the Quest may not be as powerful as a standalone PC, not requiring a personal computer to operate, enables users to move around without restrictions. Contrary to the Oculus Go, which lacks positional tracking, the Quest includes four wide-angle cameras which provide it with inside-out positional tracking, thus providing the six degrees of freedom provided by the Rift and other headsets.

Figure: Demo on Virtual Reality of Oculus Quest

Reflections

a. What is your goal/dream with regard to your course/program?

Our goal in this course is that we want to seek new knowledge and gain more experience in this field. This will help me in understand more about this course. So, we will be able to set a proper future. In order to be a good programmer, we have to been exposed with various types of exhibitions to gain our knowledge in this field. By following each of the steps, it help us able to think out of the box and try explore new things. It also allows us to build self-confident in handling each of the tasks especially our soft skills. Hence, we will try to be more confident to achieve our goals in the future.

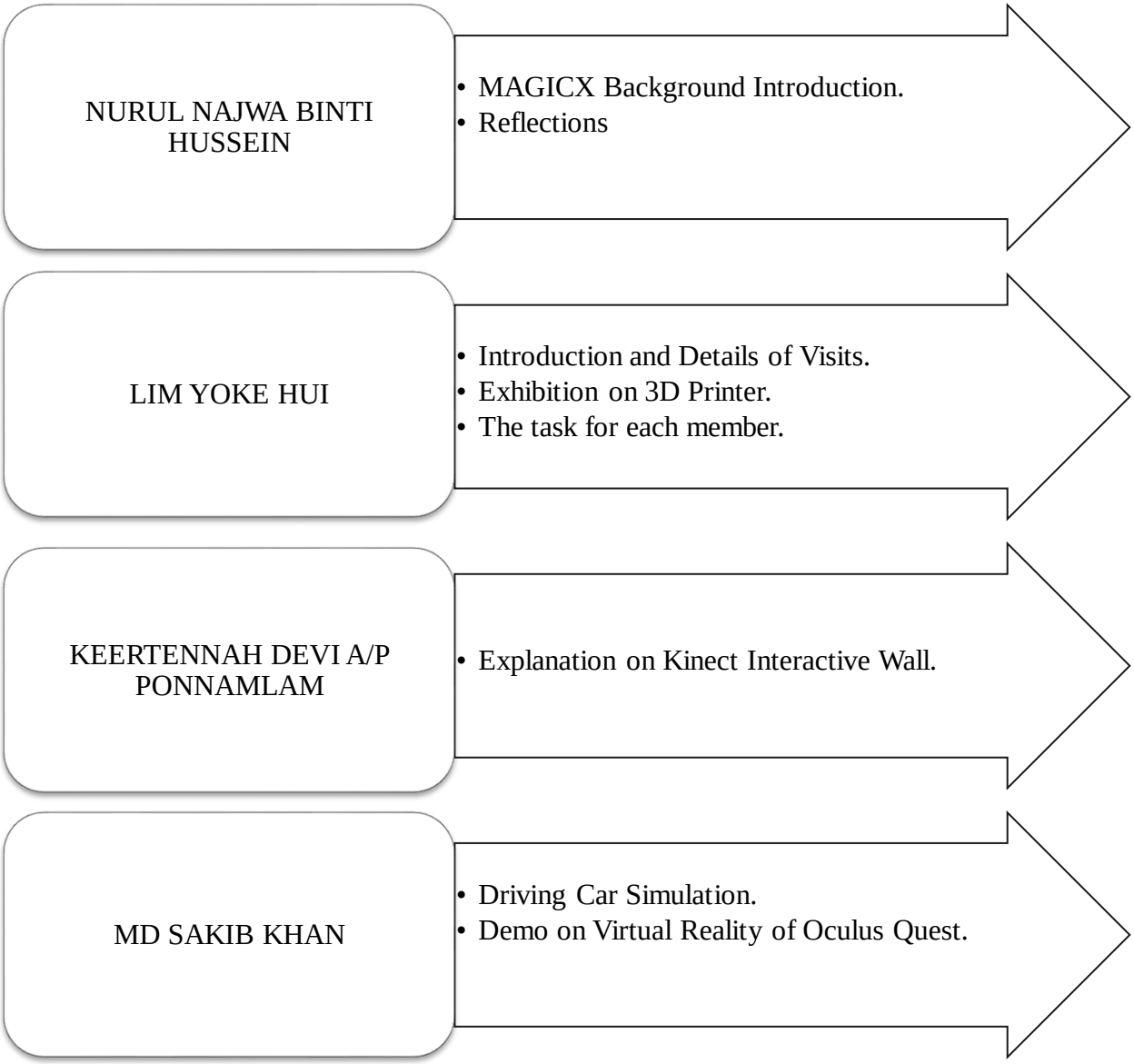
b. How does this visit impact on your goal/ dream with regard to your program?

By visiting this exhibition, it gives us inspiration to invent a new technology in the future. With the knowledge that been provided during the visit, we desire to create a system that is easily accessible and user friendly become greater. We can see all new technologies that being used in development of a product. From the visits, we can know about the requirements and needs for a product in order to attract the industry. By taking computer science course, we think that this is the right path for us in order to develop a new technology and invent a lot of things and make the complicate life become easier.

c. What is the action/improvement / plan necessary for you to improve your potential in the industry?

First and foremost, in order for us to improve our potential in industry is by setting a goal in our life. In order to avoid this awful happening, we need to identify what are the biggest rational wishes for us. Identifying with the goals takes some time and effort, but it is a truly important process in any successful person's journey. Next it is about communication skills. Communication is the key for success in industry. If we lack in that skills, how can we do if we want to propose our ideas to the industry and make them invest to our product. Lastly ,we think we always need to attend the conference and also exhibitions to see the latest demand of industry. To learn about the industry, it is imperative that we attend conferences to gain knowledge and insight into new technologies, products and services related. By investing in a conference, we can connect with others who share the same interests, and learn information that will help us to grow better and improve our potential tremendously.

The Task for Each Member



Reference

1. https://ihumen.utm.my/magicx/about-us/#
2. https://techspirited.com/how-does3d-printing-work
3. https://en.wikipedia.org/wiki/Driving_simulator
4. https://smallbusiness.chron.com/ways-increase-industry-knowledge-24494.html
5. https://www.useoftechnology.com/what-is-technology/