



UTM
UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

SECP1513-09 TECHNOLOGY AND INFORMATION SYSTEM

Industrial Visit 1 – MAGICX UTM

NO.	TEAM MEMBER	MATRIC NUMBER
1	LOW WEI CHIEH	A19EC0079
2	LIEW WEI XIAN	A19EC0070
3	SIAH WENG TZE	A19EC0161

SECTION : 09-1SECR

COURSE NAME : BACHELOR OF COMPUTER SCIENCE
(COMPUTER NETWORK & SECURITY)

LECTURER'S NAME : DR. ADILA FIRDAUS BINTI ARBAIN

TABLE OF CONTENT

NO.	CONTENT	PAGE
1	1.0 Introduction and details of the visits	3
	2.0 Detailed descriptions include organization structure, services, achievements, projects that have been developed or maintained by MAGICX	
2	a. MAGICX background introduction by the MAGICX Managers)	4
4	b. Exhibition on 3D printer	5
5	c. Driving Car Simulation	6
6	d. Explanation on Kinect Interactive Wall	7
7	e. Demo on Virtual Reality of Oculus Quest	8
8	f. Demo on Augmented Reality, Ameen Daily Prayer and wARna	9
	3.0 Reflection	
9	a. What is your goal/dream with regard to your course/program?	10
10	b. How does this visit impact on your goal/dream with regard to your program?	11
11	c. What is the action/improvement/plan necessary for you to improve your potential in the industry?	12
12	4.0 The task for each member	13
13	5.0 References	14

1.0 Introduction and details of the visits

Last Sunday, we had spent approximately 3 hours at T03, UTM to have a visit of Media and Game Innovation Centre of Excellence (MAGICX). Dr Adila Firdaus Binti Arbain, our lecturer of course, Technology And Information System Section 9 (SECP1513-09) was the lecturer in charge for our section. MAGICX involved all students from SECP1513-09 and also students from few other classes. There was crowd of people when we arrived T03, UTM at around 2.15 pm. Firstly, we had a short briefing on MAGICX background by Dr Wong Lih Fong at the basement of MAGICX before we started our visit to different departments of MAGICX. After that, we separated to a group of 15 students and started our exploration at MAGICX. Firstly, we had demonstration on VR Quest by Shamine and continued with explanation and demonstration on Kinect Interactive Wall by Syafiq. After that, we listened to the explanation on 3D printer by Hakam and lastly we experienced the Driving Car Simulation that briefed by Imran. Our visit ended at around 4.30pm. As soon as MAGICX began, one of our team members, Low Wei Chieh had distributed a work plan for us.



Group photo of our section

2.0 Detailed descriptions include organization structure, services, achievements, projects that have been developed or maintained by MAGICX

a. MAGICX background introduction by the MAGICX Managers

MAGICX manager, Dr Wong Lih Fong gave us a briefing on MAGICX background. He said that MAGICX wanted to be the anchor for Games and Gamification industry & the nucleus for Iskandar Malaysia. MAGICX provided necessary support and technical expertise in research, business development, publishing, marketing and training for industry players to develop commercially viable products and services. Dr Wong mentioned that MAGICX provided job opportunity and also collaboration opportunity. For example, Dr Wong stated that MAGICX provided some job vacancy to graduated UTM students and also had collaboration with HUAWEI company. Lastly, Dr Wong said that MAGICX had a modern classroom in renovation that students in the classroom will surrounded with projectors. It targeted to let students experienced themselves in different study atmosphere and boosted their efficiency. The whole briefing took about 40 minutes.



(From left to right) Siah Weng Tze, Low Wei Chieh, Liew Wei Xian

b. Exhibition on 3D printer

The explanation on 3D printer was in charged by Mr. Hakam. He firstly told us the condition that allowed the 3D printer to produce a product. Only “.x3g file” of image was acceptable to print out in the specific 3D printer, Flashforge. It was a type of 3D printer that made from China and it accepted two type of filaments as the material. It cost not less than RM2000 for a Flashforge 3D printer and Mr. Hakam told us that an object as small as a 300ml mineral water took 3hours to 4hours to complete it. Mr. Hakam also briefed us about how to use the 3D printer which is we made the picture in the computer application and saved it in a SD card. The SD card was then inserted to the machine and it will started producing the object. The whole explanation on 3D printer took around 20minutes. 3D printer was definitely a modern technology, however, we think that it was still unable to be used wisely as it took a long time to produce a small object and the printer was costly as well.



Flashforge 3D printer

c. Driving Car Simulation

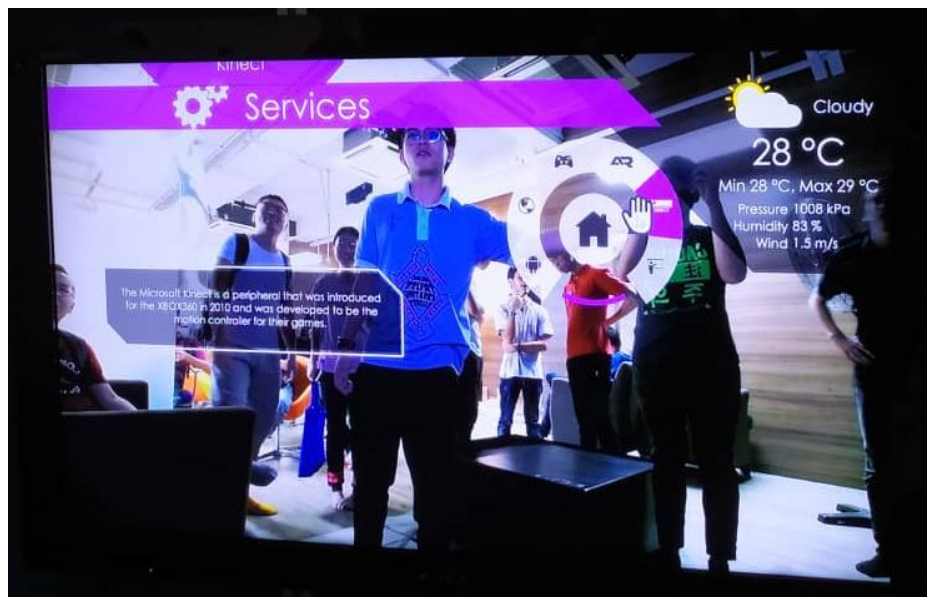
Besides that, we visited the driving car simulation room. It simulates the environment driving in a car by gathering around the car parts like steering, the seat and the handbrake and display is shown using three screens, which give a wider view to the user hence giving more immersing driving experience. The controls are simple; directions are controlled using the steering, presses the gas to go and stop by pressing the brake, shift the gear using the gear lever and pulls the handbrake to pause the simulation. The simulation takes place in UTM, allows the user to experience driving inside UTM. The purpose of this simulation is to raise the awareness of driving safely on the road. The physic inside the simulation is realistic so that the user can know the consequences of driving recklessly. This project is still under development which explains the quality of the graphic and the choppiness of the control. Despite that, it is a really good idea which can be applied in driver license examination in future, allows the examination to run more efficiently. This simulation might not be limited to just driving car or maybe to something big like drive a plane. Combine together with VR headset can give a more realistic experience and surely will be a hit in gaming industry.



View of Driving Car Simulation

d. Explanation on Kinect Interactive Wall

In addition, it was the interactive wall using Kinect. It was a project initiated by Mr. Mohamad Yahya Fekri Bin Aladin, a senior engineer in UTM back in 2014. The concept of this device is simple, which is making your body the controller. The combination of Unity and Kinect is what makes it possible. Kinect is Microsoft's motion sensing input device for the Xbox 360 gaming console, but in this case it was the PC. The application, the interactive wall is made using Unity and a specific SDK is required to make the whole thing work. This application will capture and track the motion of the user and execute the command. For instance, moving the hand around to select and clench the fist to enter into the selection. So far project developed using this technology is Boboiboy Versus and Dinding Interaksi Mosti. They plan to make it part of the future classroom element, as the interactive wall using Kinect has great potential in enhance and creating a more meaningful interactive learning environment. This technology can also combine with some other robots to create something like a smart space. Inside that space user movement is tracked and the robot helps execute the command like in some futuristic film. People with trouble moving round can utilize this technology to command the robot do things like bring him something with just moving his hand.



Siah Weng Tze was trying on Kinect Interactive Wall

e. Demo on Virtual Reality of Oculus Quest

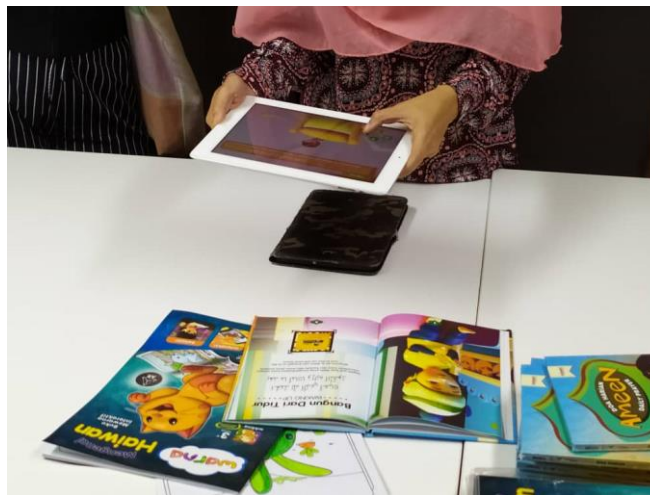
Next, we visited and got the chance to try on the Oculus Quest. A division of Facebook Inc, Oculus VR developed this virtual reality headset. This VR headset is completely standalone, where it has built-in operating system and graphic card. Therefore, there is no wire tangling around like headsets before it which required the headset rely on the PC to work. While that being said, the graphic of Oculus Quest can't compete with the PC-driven VR headset like the Rift. Besides, "Oculus Insight Tracking" feature found in Quest offers full track controller, which means that no external sensor required to track the user's movements. The audio is built directly into the headset so no headphone is required anymore to hear the audio coming from the device. Putting on the headset really makes the user "dive" deep into the device cause it is so realistic, as if the user is really being in that environment. VR headset. So far this VR technology been focusing on the gaming industry, but it will sure be the trend in future for immersing learning experience. For example, learn how to cook without having to cook with real food and don't have to worry about wasting the ingredients after failed. Besides, it also have a great potential in virtual shopping so that people don't have to go out and be there in person at the physical shop but to shop inside the virtual shop. This can avoid the disappointment when the item bought online different from the image and avoid crowd. Last but not least, it can be a chance for those who disable or paralyze to experience going around freely inside the virtual world.



Liew Wei Xian was experiencing the Virtual Reality of Oculus Quest

f. Demo on Augmented Reality, Ameen Daily Prayer and wARna

Last but not least, we were introduced by the person in charge about Augmented Reality (AR). To demonstrate this, she used Ameen Daily Prayer and wARna as example to show us how its work. Ameen Daily Prayer can taught users about the prayer in a more creative and interactive way, while wARna combined AR with colouring activity to let users obtained a better experience when they were colouring. In order to show the functionality of both products, the users must download the application after buying the AR book. Next, the users can scan the picture from the book and let the character inside the book to come to life. For Ameen Daily Prayer book, not all the characters can be scanned, instead, only those characters with a specific marker can do so. In our opinion, it is not practical for an AR book to have their own AR applications, it is better to have only one AR application that can works on every AR book. Besides, perhaps this function can be implemented for a wider field, for instance, architecture 2D structure and quantity survey.



The person in charge was demonstrating AR function using wARna book

3.0 Reflection

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

Our main goal regards to this program is to become an expert and professional network security analyst. Since data leakage is occurring quite often nowadays, our concern is to improve the security level in the Internet and thus minimise the happening of information theft or unauthorised use and access of user's data. At the same time, we wish to invent a new strong encryption algorithm for the Internet users and let them feel protected when they are filling in their personal information through online website. Furthermore, their information and the databases should be secured at a highly confidential storage so that malicious codes or unethical hackers can never intrude them.



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

As an outcome of the visit, we are glad to see that information age are now on the way to achieve its peak. Many technologies such as 3D printing, Virtual Reality (VR) and Augmented Reality (AR) that are impossible to be realised before are achieved now. Thus, the existence of these product inspire us to continue our effort to do research about computer science field and finally create an encryption algorithm. Nothing is impossible until we decide to stop trying it. Simultaneously, the dedication of implementing maintenance phase by the innovator of the product is also essential for us to be learnt. The reason of having this phase is to provide the user a better experience when they are using the product. For instance, the developers of Driving Car Simulation are still ameliorate their product to minimize the lag of game interface. This remind us to maintain the security level of our encryption algorithm if we could invent it in the future, so that the user's information is always secure.



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

In order to improve our potential in the industry, we definitely have to keep ourselves up-to-date to the newest information in computer science field. We can implement it by attending talk regards to IT and computer science, reading online articles and watching videos from YouTube and from other resources. We keep ourselves on the right track so that we are able to compete with others when we are working in the future. Apart from that, the purpose of learning ethical hacking is also necessary for us. We can participate in ethical hacking skill class held by CyberX society, PERSAKA club, lecturers or perhaps YouTube and workshop from IT company to gain knowledge on how to secure data from being hacked by other people. Meanwhile, we can also try to intrude our own software to determine the vulnerability of our program so that improvement of security level can be made. Last but not least, we can participate in competition related to our course to gain extra experience. It is also a good platform for us to view our standard compared to other contestants. We can also share our thoughts and ideas among each other, and of course, meet with someone who is more expert than us and ask him or her for advice to improve ourselves.



4.0 The task for each member

TEAM MEMBER	MATRIC NUMBER	Task
SIAH WENG TZE	A19EC0161	Photoshooting, Report writing (Introduction,MAGICX background introduction, Exhibition on 3D printer)
LIEW WEI XIAN	A19EC0070	Report writing (Driving Car Simulation, Explanation on Kinect Interactive Wall, Demo on Virtual Reality of Oculus Quest), Gather and arrange report
LOW WEI CHIEH	A19EC0079	Report writing (Reflection), team member's task distribution

5.0 References

- B.Lang (2019, May 21), *Oculus Quest Review – The First Great Standalone VR Headset*. Retrieved from <https://www.roadtovr.com/oculus-quest-review-the-first-great-standalone-vr-headset/>
- M. Rouse (n.d.), *What is Kinect? Definition from Whatls.com*. Retrieved from <https://searchhealthit.techtarget.com/definition/Kinect>
- *Oculus Quest | Features* (n.d.). Retrieved from <https://searchhealthit.techtarget.com/definition/Kinect>
- *Ameen Daily Prayer | MAGICX* (n.d.). Retrieved from <https://ihumen.utm.my/magicx/project/ameen-daily-prayer/>
- *wARna | MAGICX* (n.d.). Retrieved from <https://ihumen.utm.my/magicx/project/warna/>