UTM
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FACULTY OF
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MAGICX REPORT

TECHNOLOGY AND INFORMATION SYSTEM
SECP1513
SECTION 9

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MEDIA AND GAME INNOVATION CENTRE OF EXCELLENCE

Media and Game Innovation Centre of Excellence, MaGICX has been launched by the Prime Minister of Malaysia Dato'Seri Najib Tun Razak on 6 December 2016 during the 10th anniversary of Iskandar Malaysia. This is the one of the best strategic cooperation between University Technology Malaysia(UTM) and IRDA known as Iskandar Regional Development Authority. The aim of the programme are to support and promote our ecosystem of creative industry on gamification and digital content. MaGICX was located at UTM as their based location which provides four companies of 20 paxs and its helps many people include the students its self to join into their programme that they provided. With the incubator ecosystem, MaGICX provides the perfect stepping stone for start-ups to have a stable footing to learn and strengthen further their capability to compete in the industry. So basically, we have been visited MaGICX on 6 October 2019 during our class industrial visit programme. We have been introduced about the product that develop under MaGICX which are Driving Car Simulation, Kinect Interactive Wall, Virtual Reality of Oculus Quest,3D-Printer and Augmented reality.

MAGICX introduction

The categories of exhibition include Biosciences and Biotechnology, Physical Sciences and Engineering, Information and Communication Technology. Driving car simulation are used for entertainment as well as in training of driver's education courses taught in educational institutions and private businesses. Driving simulators are frequently used for vehicle system development, human factor study, and vehicle safety research by enabling the reproduction of the actual driving environments in a safe and tightly controlled environment which is the track that the MaGICX used for the driving simulator based at Universiti Teknologi Malaysia itself. The driving simulator of MaGICX used of powerful desktop computer workstations that can of producing high level audio, sound and most important which is graphical. Furthermore, this technology of driving simulator gives the people out there some experience like drive actual on the road because of the vehicle motion, visual and audio. This research is intended to provide a test bed for simulating driving related task using virtual reality technology. So basically, we are really grateful to have an opportunity to get the experience about driving simulation. We realise that the conditions on roadways throughout the world vary, so it's impossible to encounter every possible scenario in real life. However, training using a driving simulator will provide the level of preparation you need in those on-road situations that will help you a lots. Last but not least, there are many job specifications under driving car simulation which is simulation technician operator, senior autonomous driving controls engineer, senior autonomous driving localization engineer and many more.

Car driving Simulation

Next, MaGICX also have the Kinect interactive wall which used to get information about the MaGICX itself. Kinect interactive wall used the capabilities of the Microsoft Kinect to develop new and interactive customer information center by using a sensor which is it did not use a controller, that's all by a sensor on that PC so user just need to move this hands to something that they want to know and the sensor will detected that information. Movement of passers-by is caught by the sensor and it affects the move of images shown on the screen. Next images are revealed progressively according to the movement to the left or to the right. Only one person interacts with the app until they leave sensor's reach. Kinetic wall has many usages for example an interactive learning platform, for develop advertisement or modern form of presenting art. The job that require under this programme (Kinect interactive wall), which is website creator, java software engineer, computer scientist and many more.

Kinect Interactive Wall

Besides, Oculus Quest is a product of Oculus VR. Before this they have another VR. Namely Oculus Rift and Oculus Go. This is the latest VR develop by them. There were some difference between the old VR and the new one. It is only set up with the mobile app from Oculus so we can explore VR from virtually anywhere. Sensors inside the headset detect our movements reliably and convert them into VR instantly while allowing you to steer clear of nearby objects. And our hand detected in the game with Oculus Touch controllers, so we can see every movements of our hands and feel the power of every impact, this will take the next level of VR gaming. The Oculus Quest has a design similar to the Oculus Go but has more powerful graphics chip and active cooling. It is claimed that the battery life is around 2-3 hours. The Oculus Quest serves two Pentile OLED diamond displays each with an individual resolution of 1440/1600 and refresh rate of 72 Hz. The Oculus Quest features the same Oculus Rift S inside out tracking system, named Oculus insight. The Oculus Quest uses the same second generation Oculus Touch controllers used by the Oculus Rift S. The tracking ring in the new controllers was moved to the top of the controller to a accommodate the new inside out tracking system, as it was located on the back of the older Oculus Touch controllers. The handbag of the quest has ingrained headphones, which allow the user to use wireless headphones. Although the Oculus Quest has built-in audio, official in-ear headphones can be brought from Oculus. Oculus Quest is a way of increasing the interest on the product and raise awareness among us and other. Our hope is one day we can bring the best version of oculus quest in the future.

Oculus Quest VR gaming

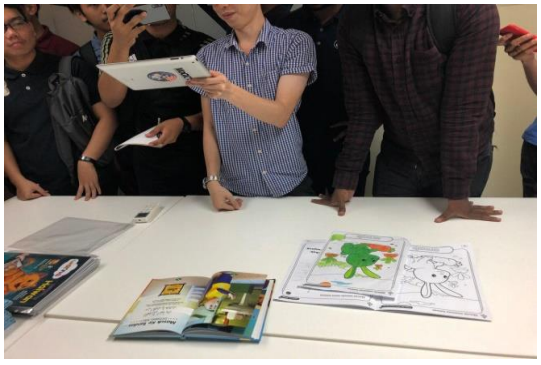
Moreover, in recent years, 3D printing performing decisive role as important manufacturing, custom art and design including architecture. Based on what we learnt from visiting the exhibition on 3D printing, we could say that this product has a bright future especially in graphic and multimedia industry because it will be more convenience in creating 3D model. It can also be one of the profit earning sources because the cost for 3D printing services always use the duration of printing and including the weight and size of the product to be printed. The process usually will take minimum 6-7 hours per product depends on the size of the product. As if MagicX want to maintain this project, it should be develop more to provide more function and upgrade the quality of the product such as makes it faster, cheap cost for student and more user friendly system to apply the machine setup. Although it seems to possible in future , it also have downside of it which we can look from the authority , 3D printing are not cheap especially when it comes to tools for setup 3D printing , there should have the filament for the ink and the printer. The price for the printer is a bit pricey, it cost for more than RM 3000, and not everyone can understand how to setup the printing process. In a nutshell , what I can conclude is all of the flaws of 3D printing can be improves from time to time in hopes that I will be part of these project while I am studying here so that I can develop my skills through learning new things and work with experience people especially in this 3D printing project. My goals are at least I can create another type of machine or systems that can bring benefit to others.

3D printer

Filamen for printing ink

Another innovation that we got the chance to invite is **'Augmented Reality'** also known as AR. AR is a new innovation only that combines the existing technology and then adds information on it to attract the users to have a new experience of realworld environment across sensory system including visual, auditory, and haptic. This application can have in both mobile operating system (OS) which are iOS and android. AR suitable for picture books and book without pictures. Picture books or non-fiction books can be coloured or not and picture books are aimed most at young generation. Basically, AR help the children to develop their reading and learning skills because the application will spell about the picture and then users can listen what the reader is reading through their mobile device. We got the opportunity to try this application by scanning to rabbit picture and it really works. For example, we heard how the rabbit's sound when users scanned to the rabbit's picture. However, for non-picture books such as story book or daily prayers book can be read based on inputs that scanned through the apps too. That's why I think AR is a good technology and very benefits for every level of age because users can have new and exciting experiences. Moreover, AR's application is free for all to use and user-friendly. One of the careers in IT correspond to AR is **"Augmented Reality Designer"**. Augmented reality designers should create programs depends on user's current environment and enhances it with virtual information, for this type of reality. These designers often work with multiple media platforms, including laptops, desktops, and smart devices and utilized in variety of industries. Students need to be creative, deepest thinker and must have excellent technical design abilities in order to create useful and secure application. Communication skills also one of the requirements since the designer needs to collaborate with colleagues for the development of virtual applications. Therefore, students should recognize their potential by embracing challenge as opportunities to make you qualified in this field.

Books for AR



AR demonstration

As a conclusion, “Media and Game Innovation Centre of Excellence, MaGICX” had provided many innovations that focus on gaming and enrichment of digital content to enhance the development of this industry. However, MaGICX not only focuses on creating innovations but they also provided the first-class facilities, guidance from expert trainers, we can join their workshops or seminars and their competition too. The exhibitions that we have invited just a part of their innovation only because they have a lot of innovation more and one of the most exciting for us is about the future of the classroom innovated by MaGICX. So, how about the achievement of MaGICX? One of their biggest achievements is they successfully developed more than 100 applications that related to the education of children, primary school and university students to achieve UTM’s goal as a university moving towards on digital and learning revolution. Next, MaGICX also appointed as a creative centre network partner for Malaysia Digital Economy Corporation (MDEC). We are interested to be a part of MaGICX members in the future. Our goal regarding our course is to research one of the big-name companies and maintaining the network and security for the company’s organization. We are also planning to upgrade our skills and build a new self-confidence in ourselves, so that we can have successful careers. We think that this industrial visit gave us a new experience to trying out the new innovation and we hope there is much innovation that will be produced by MaGICX in the future. In a nutshell, this visit gave a big impact on us which is we need to be more motivate, independence and be more creative in order to contribute to the success or ability that we have to our country.