THE PORTFOLIO

AN INSIGHT TO CREATIVE COMPUTING PROJECTS

SCHOOL OF COMPUTING AND INFORMATICS
CREATIVE COMPUTING

SCI//CC #02-2018

ALL PROJECTS ARE A PRODUCT OF UTB

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FOREWORD

The Portfolio: An Insight to Creative Computing Projects was introduced in 2017 to commemorate the first intake graduates of Creative Computing Programme Area. It is therefore my greatest pleasure to welcome you to the second issue made by the graduates of the second intake of Creative Computing Programme Area under the School of Computing & Informatics (SCI), Universiti Teknologi Brunei (UTB).

This creative magazine dedicates to annually showcase innovative projects made by the students which correlates with the main aims of the programme area. Not only that, the magazine offers an opportunity to exhibit students' fundamental knowledge and skills that could potentially attract future employers. This could be a good head start for us in the uprising competitive employment in Brunei.

Naqiuddin Ihsan

Awang Muhammad Naqiuddin Ihsan bin Awang Mat Japar
Bachelor of Science (Hons) in Digital Media
Creative Computing
School of Computing & Informatics
Universiti Teknologi Brunei

PREFACE

Under the School of Computing & Informatics (SCI), Creative Computing Programme Area consists of two creative courses; Bachelor of Science (Hons) in Creative Multimedia and Bachelor of Science (Hons) in Digital Media, that was introduced in 2013 and attained accreditation from the British Computer Society (BCS), the Chartered Institute for Information Technology, earlier this year. With the current high demands in the creative industry, this programme aims to bridge the gap by providing all-rounded students in creative skills to offer. With this, it will not only help to train and nurture students, but also further polish their knowledge in creative arts to be future professionals. Moreover, both courses follows the rapidly growing technological advancements to ensure the skills equipped to the students are relevant to current industrial demands.

3D ANIMATION & SHORT FILMS

Ady Majurinah binti Haji Majin

// Ady

When you feel like quitting, think about why you started.

CONTACT DETAILS

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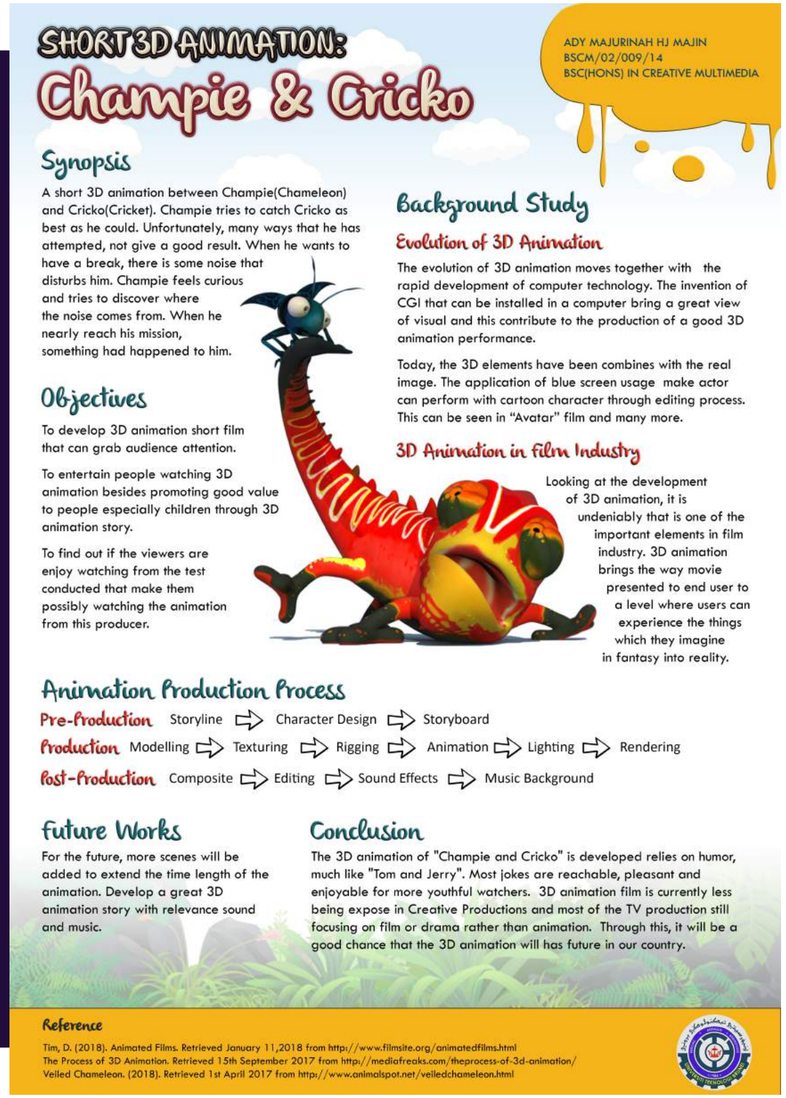
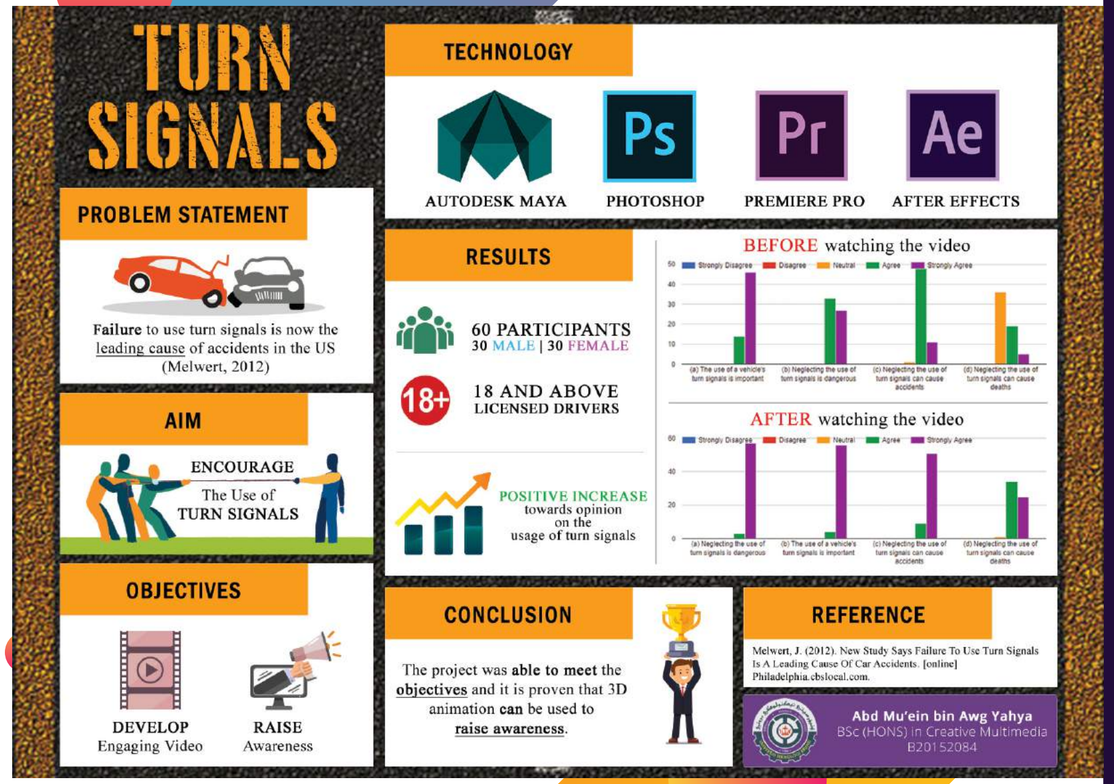
Short 3D Animation: Champie and Cricko

I have a passion in 3D animation for short animated film or series, movies, live actions and commercials. It is also my focus on TV production to improve the country's entertainment that can be aired at the nation's state broadcaster.

I enjoy doing it even though it is challenging. It requires some skills to make the 3D objects to life through movement. I need to be patient with overall animation process. From doing this project, I gain more knowledge, experience and skills.





Turn Signals - A 3D Animation Short

I specialize in videography and filmmaking. So I was not really into 3D animation although it is part of my degree programme. So I was basically doing this to push my limits and uncover my hidden potential. On the other hand, I really want to encourage you people to use your vehicle's turn signals.

Turn signals was quite an experience to develop as I myself have limited knowledge and skills in 3D animation. But I really did not expect that I can eventually do and finish this project, of course with the help of fellow lecturers, colleagues and my bestfriend "YouTube". To sum up, never be afraid to try new things.

Abdul Mu'ein
bin Awang Yahya

// Pakzaki

> *My formula for success is a combination of passion and hard work. 97% of the time, it works every time.*

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Farhanah binti Julaihi

// Farh

> *You'll be surprised at how strong you are when you keep on having positive thoughts.*

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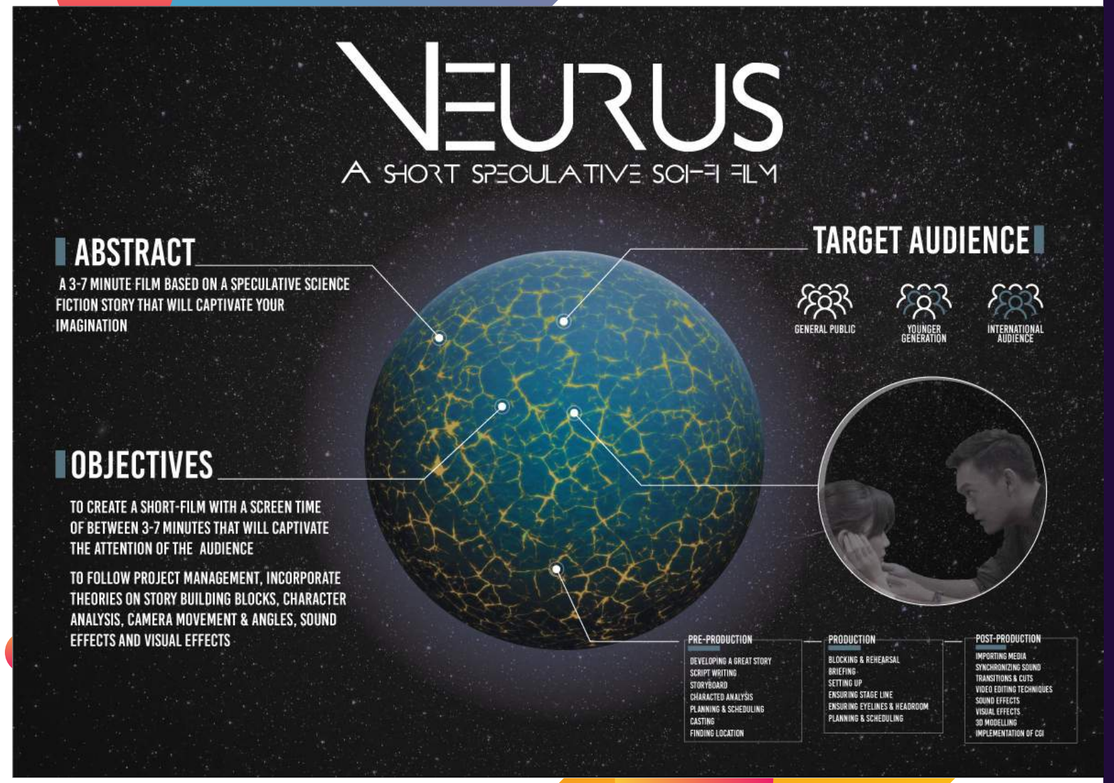
Speculative Fiction Film: Here Again

Editing videos is a hobby of mine, so what's more fun than doing what you like for a project? However, the addition of CGI and VFX is interesting yet challenging, and exploring this aspect of film-making gave me the motivation to overcome the project.

Creating a video is easy, everyone can do it. However, the tasks involved are not to be underestimated and they could still be very challenging especially when you want to evoke certain emotions from the audience. Doing the project was enjoyable, but I had also gone through many trials and errors during editing in order to produce the desired result.



Neurus: A Short Speculative Sci-fi Film

All my life I have been mesmerized with the wonders of films. I define films as a gate way to the improbable, a spaceship that transports you to a different dimension, a world in the eyes of the film makers. I wanted the audience to see the world as I see it, endless possibilities.

I am not going to lie, the journey (of this project) was not an easy one. Problems arose left and right, however it taught me more than I could've imagined. I have a new found respect for all film makers.

Paul Michael
Corporal Marquez

// Paul Marquez

> *Quam bene vivas refert non quam diu.*

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AUGMENTED AND VIRTUAL REALITY

Hajah Nur Amalina
binti Haji Abdul Manaf

// Lina

> *Do something that makes you happy, even if it means you have to work twice harder than the others.*

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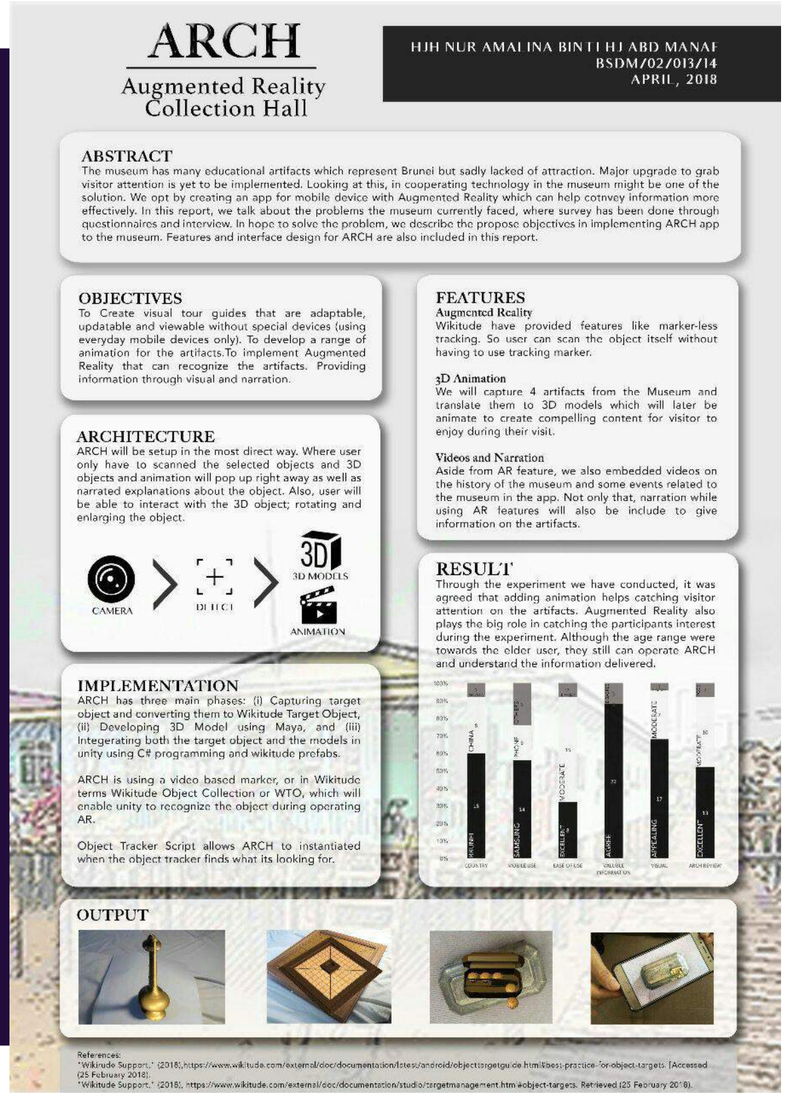
ARCH - Augmented Reality Collection Hall

I wanted to create an object recognition AR (Augmented Reality) application with 3D animation to provide information through visuals.

It (the project) was really challenging but it was worth the time. All the hard work going back and forth with the design and implementation paid off when receiving positive feedbacks from the users.



Augmented Reality (AR) Jerudong Park (JP) Postcard

This project was done to expose the innovation of Augmented Reality in Brunei Darussalam especially in Tourism industry. It also to make the postcard popular again by providing enjoyable experience by displaying pop-up animation and sound.

It might be tiring doing the project that I have never experienced before, but it it was indeed a very enjoyable and rewarding experience along the way. I have grown to be stronger, patients, and understanding and able to learned Unity for developing this project.

Dayang Amirah Husna binti Awang Osman

// Amirah

My name is Amirah and I am a student of creative multimedia. I'd like to bring my creativity and views to both design company and its customers that appreciate my skills.

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Nur Afiqah
binti Haji Awang Tengah

// Fiqah HT

> *DUIT: Do'a, Usaha, Ikhtiar, Tawakal*

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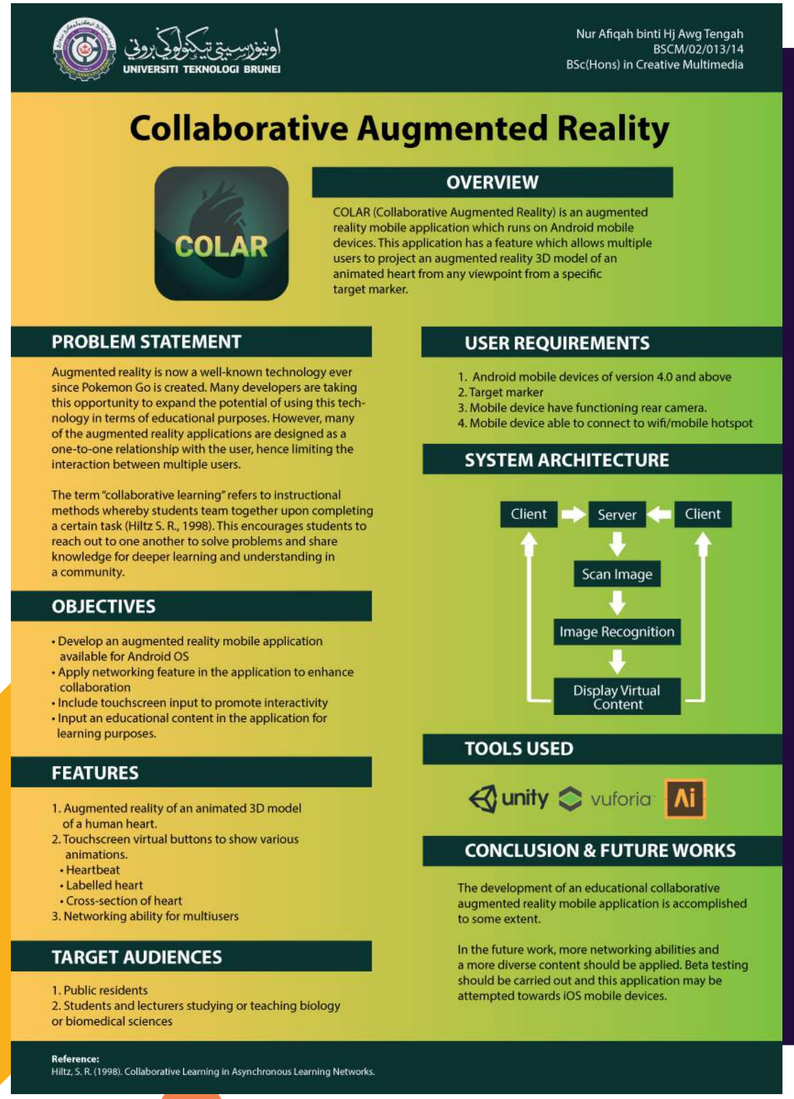

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UNIVERSITI TEKNOLOGI BRUNEI

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BSCM/02/013/14
BSc(Hons) in Creative Multimedia

Collaborative Augmented Reality

COLAR

OVERVIEW

COLAR (Collaborative Augmented Reality) is an augmented reality mobile application which runs on Android mobile devices. This application has a feature which allows multiple users to project an augmented reality 3D model of an animated heart from any viewpoint from a specific target marker.

PROBLEM STATEMENT

Augmented reality is now a well-known technology ever since Pokemon Go is created. Many developers are taking this opportunity to expand the potential of using this technology in terms of educational purposes. However, many of the augmented reality applications are designed as a one-to-one relationship with the user, hence limiting the interaction between multiple users.

The term "collaborative learning" refers to instructional methods whereby students team together upon completing a certain task (Hiltz S. R., 1998). This encourages students to reach out to one another to solve problems and share knowledge for deeper learning and understanding in a community.

OBJECTIVES

- Develop an augmented reality mobile application available for Android OS
- Apply networking feature in the application to enhance collaboration
- Include touchscreen input to promote interactivity
- Input an educational content in the application for learning purposes.

FEATURES

1. Augmented reality of an animated 3D model of a human heart.
2. Touchscreen virtual buttons to show various animations.
   - Heartbeat
   - Labelled heart
   - Cross-section of heart
3. Networking ability for multiusers

TARGET AUDIENCES

1. Public residents
2. Students and lecturers studying or teaching biology or biomedical sciences

USER REQUIREMENTS

1. Android mobile devices of version 4.0 and above
2. Target marker
3. Mobile device have functioning rear camera.
4. Mobile device able to connect to wifi/mobile hotspot

SYSTEM ARCHITECTURE

TOOLS USED

unity vuforia Ai

CONCLUSION & FUTURE WORKS

The development of an educational collaborative augmented reality mobile application is accomplished to some extent.

In the future work, more networking abilities and a more diverse content should be applied. Beta testing should be carried out and this application may be attempted towards iOS mobile devices.

Reference:
Hiltz, S. R. (1998). Collaborative Learning in Asynchronous Learning Networks.

Collaborative Augmented Reality

I was interested to try this project as the experience I had in developing an augmented reality mobile application during my CGP (Computing Group Project) period motivated me to explore the use of this technology further. The potential it has for the educational system and that it benefits the society, brings value to the purpose of developing the application. I believe that augmented reality helps improve learners' motivation and anticipation.

I find it very challenging to do this project as it actually requires an intermediate level of programming skills and I am still in the beginner level. I honestly think the application needs more improvements but overall doing the project helps me gain more knowledge and experiences.

LAREVENT

This project is an entertainment application, developed using the IOS platform. It is to tackle the current obesity problem the public is facing. This has become a problem within our society and with the help of this application, Larevent, which is a combination of both Technology and Fitness into one convenient application, it will hopefully help tackle the current obesity issue.

Alhamdulillah. Even though the time duration to complete this project is limited, and yet the scope of the Final Year Project has been achieved. This project can be expanded to a bigger scope. As of now, the prototype is included with Augmented Reality, Games and a centralized of run events.

Haji Azhar Lizam bin Haji Zainuzzaman

// Azhar

> *The thing about graphic design is that it has no limits. Designers must always think outside the box.*

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Muhammad Khairul Fadhli bin Sani

// Fadhli

> *A person who never makes a mistake will never try anything new.*

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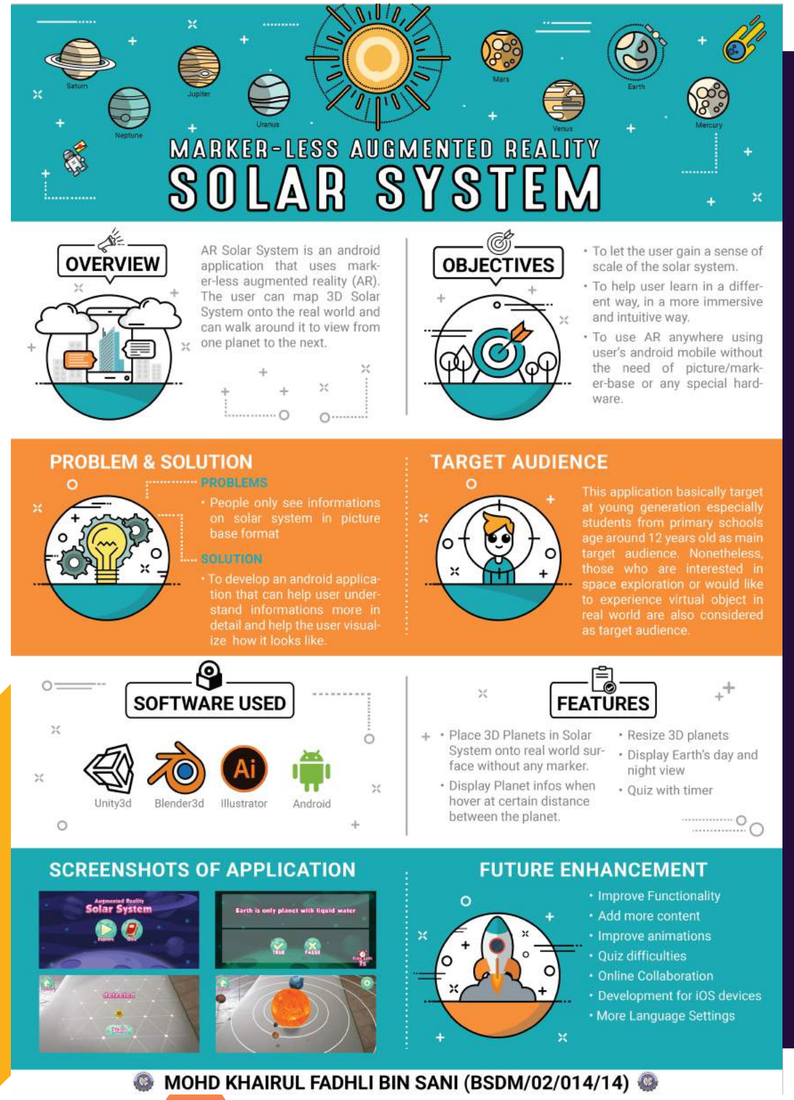

Marker-less Augmented Reality Solar System

The reason why I decided to choose this project is because I want to experiment and to test my skills that I had gained throughout my four years as an undergraduate student at Universiti Teknologi Brunei (UTB).

It was the most adventurous and memorable project I have ever experienced. From meeting new people to gaining new knowledge. I can say that it has been a crazy roller coaster ride.

Brunei Virtual Museum (A Prototype Android 3D Game Application)

This project is created out of my personal interest and devotion towards Brunei traditions and culture. I personally like the concept of preserving our precious cultural heritage in any kind of form and I also happened to have a huge interest in trying to develop my own video games. So, combining the two personal interests together, I have managed to create a prototype of Brunei Virtual Museum game app for Android phones and tablets. And so far, I have received positive feedback from the people who had tried out my game app saying that they do like the concept of using video games to help preserve Brunei cultural heritage and would like to see more of it in the future.

I enjoyed creating the game app and it had definitely given a huge impact to help me discover my own style of graphic designing, 3D modelling, code scripting, project managing and many other various skills. If given the chance of having a better platform, knowledge and skills in the future, I would like to develop the game app further with better enhancements or even start from scratch to develop a similar concept game with a different approach to the game genre.

Rabiatul Adawiyah binti Mudim Haji Amran

// Rabi

> *I am very passionate in doing my creative works that are often fused with my organization skills and I would usually deliver tasks efficiently to the highest standard possible.*

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Nursheila binti Ziziumiza

// Sheila

> *Reliable Work*
> *Sustain Discipline*

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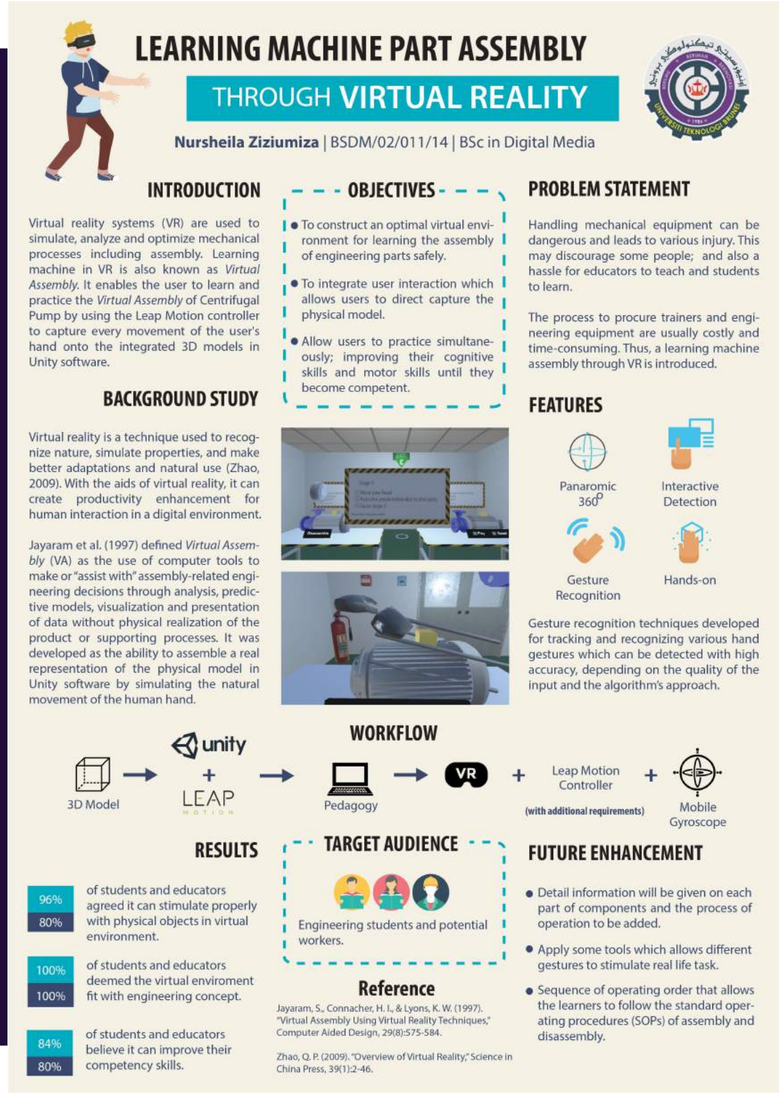
Learning Machine Part Assembly Through Virtual Reality

The project's motivation is to develop virtual assembly simulations for basic learning and training for employees and students using VR (Virtual Reality) technology and Leap Motion sensors. It also serves as an educational tool to enhance the efficiency of practicing assembly and disassembly in Centrifugal Pump.

Overall experience in building this project is challenging as it requires programming skills and modelling skills in 3D. However, I really enjoyed doing this project because I learned a lot during the development process and with hard work, patience and understanding, I was able to solve and overcome everything to create this project.



ELECTRONIC VIRTUAL AND PHYSICAL BOARD GAMES

Muhammad Ahmad Shafiee bin Sufray

// Schaff

> *1 + 1 = 3*

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ArcLight

I wanted to create a multiplayer game that is unrestricted to platforms and enjoyable to all, and I have always wanted a reason to create an indie game.

During the development of this project, there were stressful times, but it was also fun on certain stages. Creating this game is like making a dream nearly come true.

Farhan Nuradli bin
Abdul Karim

// Farrens

> *Always find your reason to create.*

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Project HIKAYAT (Demo)

I have always considered myself a pretty hardcore gamer but my curiosity always been a trait of mine that I have wanted to know more about how can I make one myself. I believe video games has a lot of potential beyond entertainment value. Through games, I have made new friends and teammates, gained new ideas and insights that have crossed beyond borders. That is something I really appreciate and wish to share with everyone else. Even more coming from this little country of ours.

It (the development) was an eye-opening process considering there are many aspects developers should cover in the creative process. The interactions, the feel, the real-life references and relations, the aesthetics... These are just the 'little' things that make a very memorable title. I do hope this project can leave an impact to those who try and looking forward to playing it.

Ammal Rasyidah binti Muhammad Amin

// Ammal

> *Life begins after coffee.*

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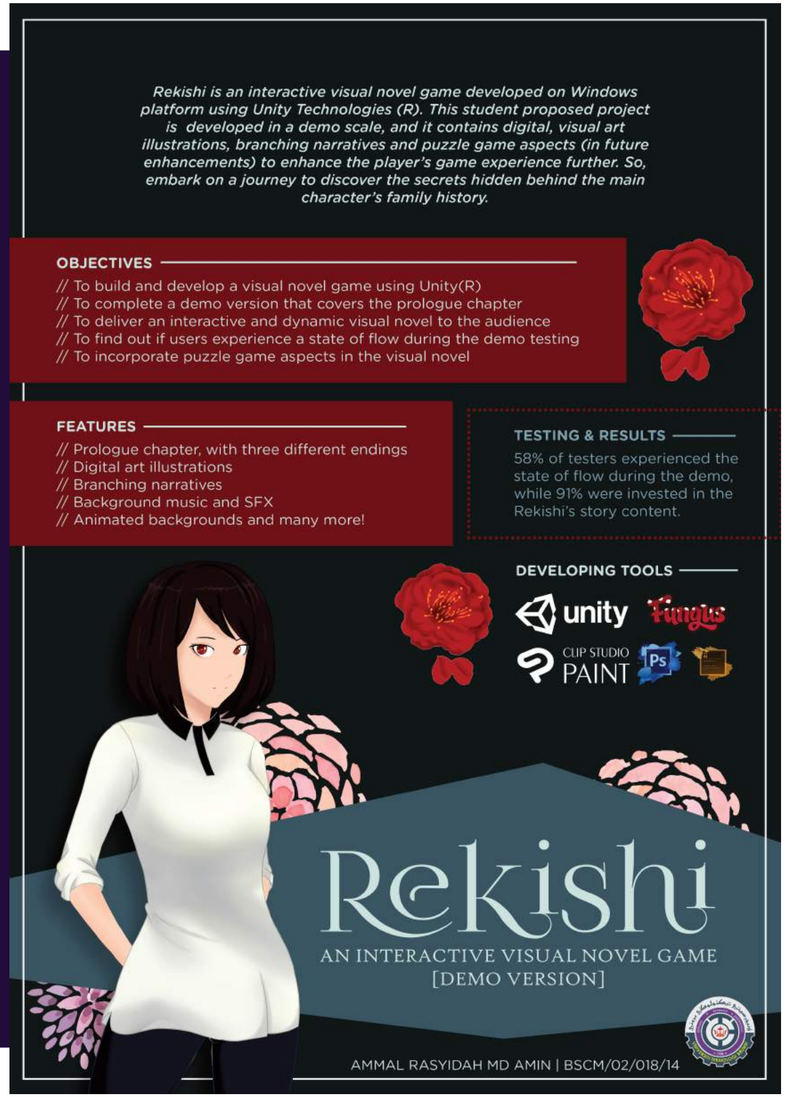
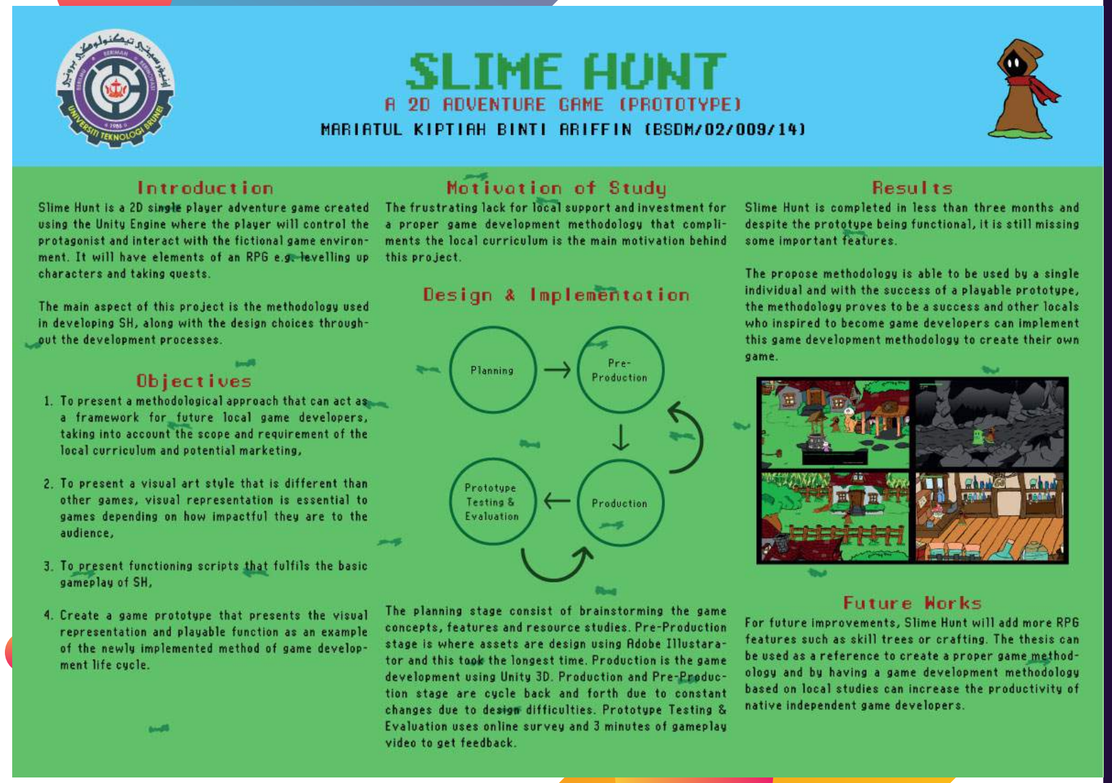
Rekishi: An Interactive Visual Novel Game (Demo)

I have always loved visual novel games, as well as anime-style art, and I have constantly wondered how a person or a group of people make these games. Visual novel games contain rich stories with unique character backgrounds, and the illustrations are most often beautiful, with their rich and vibrant colors. So, from there, Idecided to make one of my own. Besides being a personal interest, it is also a challenge for me to go through as I test myself in terms of storywriting, character designing, and illustrating backgrounds.

I honestly enjoyed working on this project, as I have always wanted to create a visual novel game. It has been a learning experience for myself, as I improved my story writing technique, and I get to improve my skills in drawing illustrations as well as coming up with character designs that fit the concept of Rekishi's story.





Slime Hunt: A 2D Adventure Game (Prototype)

"I like games. I like Slime."

Slime Hunt is a project inspired by my passion for Video Games. It is a 2D adventure game that features basic RPG elements and hand-drawn graphics. Taking control of Linde, a slime monster, players embark on this short prototype to experience this vibrant fictional world.

Game development is challenging especially if it is developed by only one person. I find myself having difficulty with the design aspect due to the constant need to redo the design. Yet, I found myself enjoying the experience, venturing to new and unknown territories with preparation from my past modules.

Mariatul Kiptiah binti Ariffin

// Mar

> *If your goal is blocked, slither your way through!*

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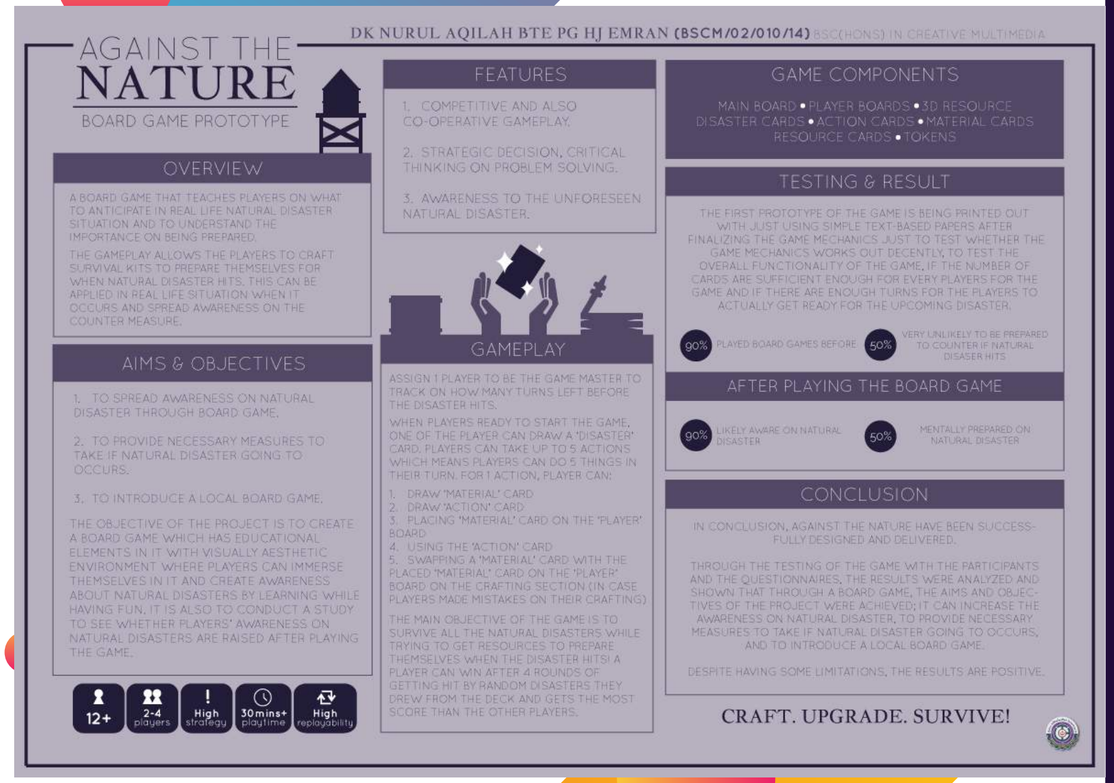

Against the Nature Board Game Prototype

I chose to do this project because I wanted to challenge myself in creating a physical game and how to actually design a game mechanic from scratch.

This project was a good experience despite all all the difficult times. Designing an entire game as a gamer was a fulfilling experience because I get to contribute a game for gamer enthusiasts and friends.

Dayangku Nurul Aqilah
binti Pengiran
Haji Emran

// Aki

> *When writing the story of your life, don't let anyone hold your pen.*

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CREATIVE AND INNOVATIVE TOOLS

Muhammad Aminuddin
Hidayat bin Haji Amir Hidayat

// Amin

> *Learning something new is never gonna stop me.*

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Quran E-Learning using Speech Detection (QeSD)

I always thought to myself, what can I contribute to my country in terms of innovation and education. Hence, Quran E-Learning using Speech Detection or in short 'QeSD' was developed.

I enjoyed developing this project. It also gave me the experiences in learning how mobile learning is important to the country. It also gave me the opportunity to learn how voice recognition is implemented to some applications that are already built.

QeSD

Quran E-Learning Using Speech Detection

INTRODUCTION

QeSD is a learning application for mobile. It used speech detection program to detect the user voice and convert it to text so the application can compare the text with the pre-program phrases available. This application is developed by using Unity and the targeted build for Android OS.

OBJECTIVE

To develop a mobile learning application that can detect the user voice using the voice recognition.
To develop a mobile learning application for learning Doa from the Holy book Al-Quran
To help the users in term of learning on reciting Doa properly.

FEATURES

Voice Recognition
Part by part Doa recitation
Audio playback recitation of selected Doa

CONCLUSION

Mobile learning is not just needed in the educational environment, it also needed for the developement of the country and the future generation. With mobile learning, users can access the application anytime and anywhere no matter where they are.
This application will detect the user voice and convert it to text, therefore it can compare the user voice with the phrases that was program in the application. This application can help with improving the user recitation of Doa.

FUTURE WORK

Implement the voice recognition for the full sentences
Addition of more Doa to the list
Provide Roman translations for each of the sentences
Addition of tutorial or guide on how to use the application

Khairuddin bin Kiffle

// Chai

> *"Creativity is thinking up new things. Innovation is doing new things."*
> *— Theodore Levitt*
>
> *If you get tired, learn to rest, not to quit.*
> *- Banksy*

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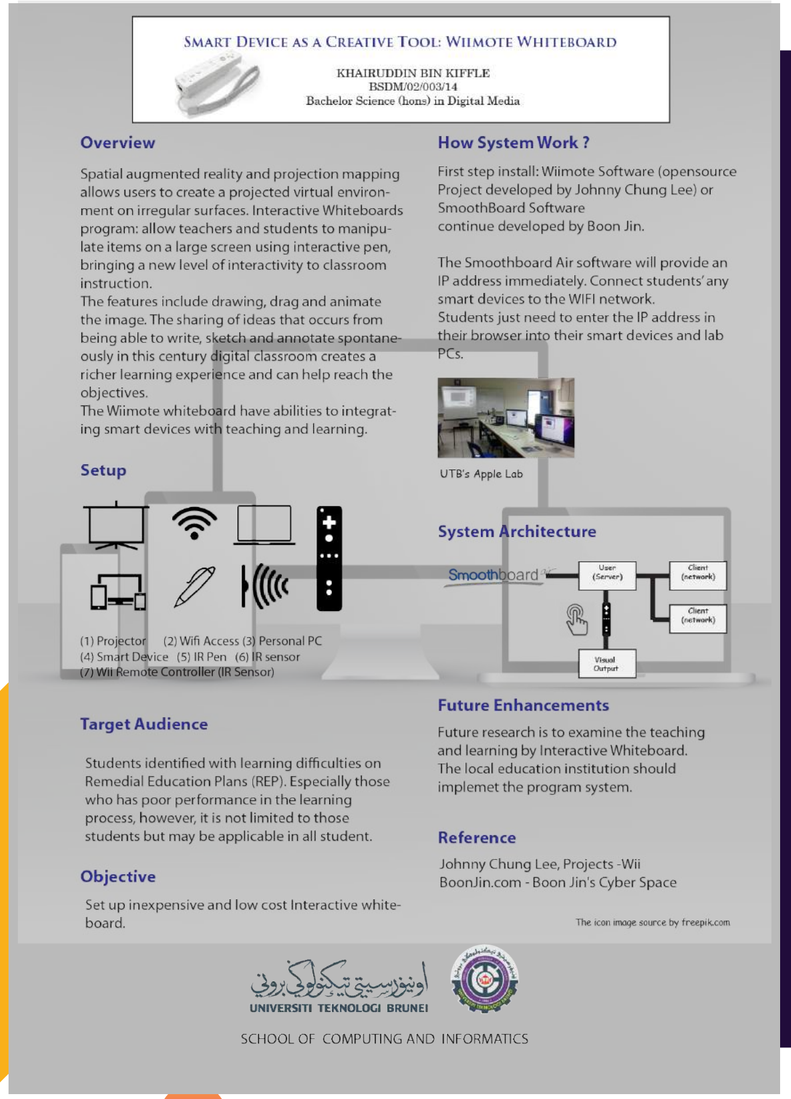

SMART DEVICE AS A CREATIVE TOOL: WIIMOTE WHITEBOARD

KHAIRUDDIN BIN KIFFLE
BSDM/02/003/14
Bachelor Science (hons) in Digital Media

Overview

Spatial augmented reality and projection mapping allows users to create a projected virtual environment on irregular surfaces. Interactive Whiteboards program: allow teachers and students to manipulate items on a large screen using interactive pen, bringing a new level of interactivity to classroom instruction.
The features include drawing, drag and animate the image. The sharing of ideas that occurs from being able to write, sketch and annotate spontaneously in this century digital classroom creates a richer learning experience and can help reach the objectives.
The Wiimote whiteboard have abilities to integrating smart devices with teaching and learning.

How System Work ?

First step install: Wiimote Software (opensource Project developed by Johnny Chung Lee) or SmoothBoard Software
continue developed by Boon Jin.

The Smoothboard Air software will provide an IP address immediately. Connect students' any smart devices to the WIFI network.
Students just need to enter the IP address in their browser into their smart devices and lab PCs.

UTB's Apple Lab

Setup

(1) Projector (2) Wifi Access (3) Personal PC
(4) Smart Device (5) IR Pen (6) IR sensor
(7) Wii Remote Controller (IR Sensor)

System Architecture

Smoothboard
User (Server)
Client (network)
Client (network)
Visual Output

Target Audience

Students identified with learning difficulties on Remedial Education Plans (REP). Especially those who has poor performance in the learning process, however, it is not limited to those students but may be applicable in all student.

Future Enhancements

Future research is to examine the teaching and learning by Interactive Whiteboard.
The local education institution should implemet the program system.

Objective

Set up inexpensive and low cost Interactive whiteboard.

Reference

Johnny Chung Lee, Projects -Wii
BoonJin.com - Boon Jin's Cyber Space

The icon image source by freepik.com

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Smart Device as a Creative Tool: Wiimote Whiteboard

During Korean Government Invitation Program 2017, I went to visit the Samsung Innovation Museum and I was interested in the Smart Device as a Creative Tool section, so I decided to research this type of innovation technology features which was an amazing discovery.

This project was done inclusive of education learning, and I hope students will find it enjoyable.

Sara Khadhra
'B' Khalidkhan

// Sar

Minimalism is complexity in its simplicity.

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The Creative Deck (Brand in Brief)

The Creative Deck is a creative brief, simplified at your fingertips in the form of a branding tool which helps to figure out your brand identity and media advertising needs. Discovering your brand in an interactive and innovative way.

The Creative Deck is inspired by the drive and motive of supporting the development and creating growth improvement in the local creative industry. It is to introduce an easier interactive approach towards business brainstorming, through the development of a toolkit or service in line with the Wawasan 2035 towards a high quality of life through the enhancement of knowledge, information and art.

It was quite challenging during the development process from the beginning of the brainstorming stage all the way to the execution, as to actually be able to create and bring the idea to life in the best attempt to cover all aspects, not just in terms of design and aesthetics, but as well as functionality which would meet a satisfactory result with quality.

The main aim was to develop a toolkit which enables to collaborate with people and organizations in the communities served to bring quality, learning opportunities and economic development to our region. All while intending to create a conducive environment for development especially through the encouragement of creative and innovative activities.

The overall experience gave a brand new creative buzz with an innovative twist. I feel glad to be given the opportunity to work on this project and it has been great privilege.

Self-Trackam

Photography has become a way to preserve memorable events of our lives in today's society. Relating to this, I wanted to challenge myself by doing something different, by developing an application/product that can up your selfie game. Also it seems fun and simple to do at first.

A lot of sufferings were involved, as this area of study and technology involved were not within my expertise. *Never again...* However, i managed to complete my project, better than expected so that was cool.

Shiqah Natasya binti Muhammad Hadi

// Shiqah

> *If you can't find your motivation, then procrastinate. You'll eventually find it at the end of your deadline.*

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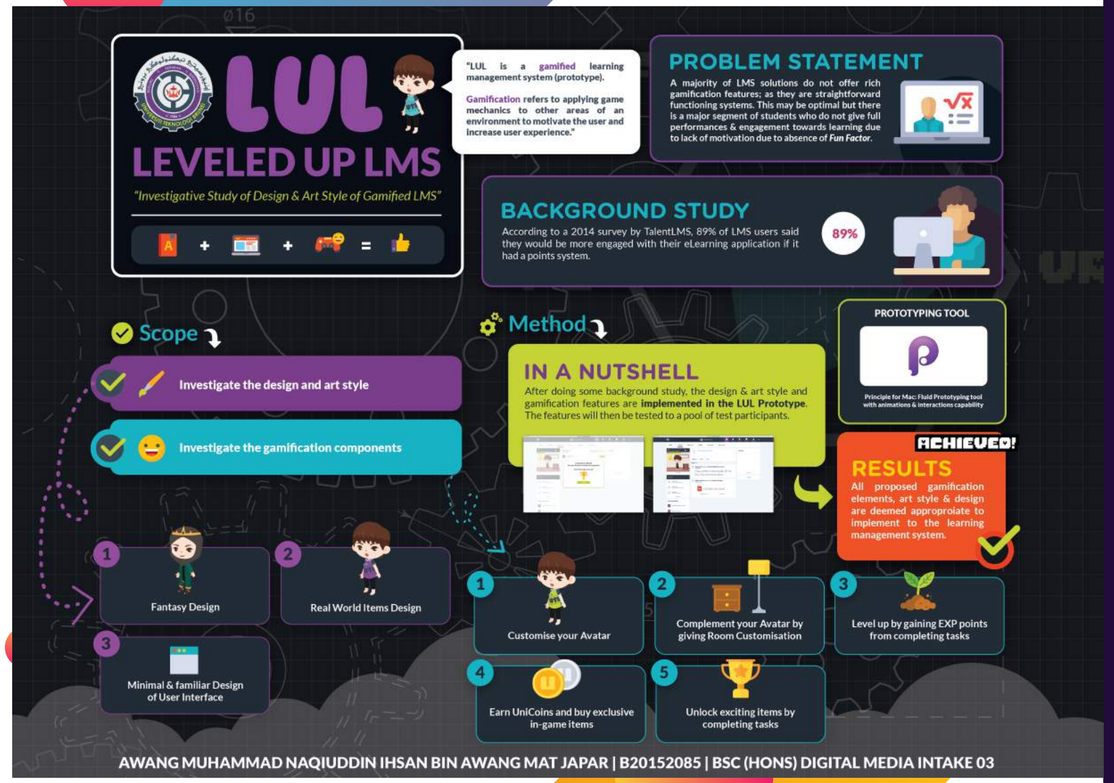
RESEARCH STUDY



Investigative Study of Design and Art Style for Gamified Learning Management System

One of the motivations for me to do this project is my personal interest in how incentive mechanisms help motivate people to do more tasks or activities. Gamification is a way of motivating where a reward is given for every action done. For example, in games, when you complete a certain quest or mission, you will be rewarded with coins or experience points. From several studies, gamification help increase user engagement and improve user performance. I like how reward mechanisms can help motivate individuals no matter how micro the actions are.

Overall, I enjoyed the process of the project development. The initial phase(s) were quite rough and blurry. It taught me how to improvise and devise new methods to meet the project's objective -- There is no one way of completing a task.

Awang Muhammad Naqiuddin Ihsan bin Awang Mat Japar

// Ihsan

> *Don't wait for opportunities. Create them.*

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