Universiti Teknologi MARA

Mobile App in Learning Mathematics for Secondary School Student Focusing on Geometry Topic Through Augmented Reality

Siti Nur Shahidah Binti Zaman Shah

Thesis submitted in fulfillment of the requirements for Bachelor of Computer Science (Hons) Faculty of Computer and Mathematical Sciences

January 2019
SUPERVISOR’S APPROVAL

Mobile App in Learning Mathematics for Secondary School Student Focusing on Geometry Topic Through Augmented Reality

By

SITI NUR SHAHIDAH BINTI ZAMAN SHAH
2016565891

This thesis was prepared under the direction of thesis supervisor, Madam Azilawati Binti Azizan. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfilment of the requirements for the degree of Bachelor of Computer Science (Hons).

Approved by:

Azilawati Binti Azizan
Thesis Supervisor

JANUARY 8, 2018
DECLARATION

I certify that this report and the research to which it refers are the product of my own work and that any ideas or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

SITI NUR SHAHIDAH BINTI ZAMAN SHAH
2016565891

JANUARY 8, 2018
ACKNOWLEDGEMENT

First of all, I would like to express my gratitude and praises towards Allah the Almighty for the chances given for me to finish up this project. I would like to express my deepest appreciation to those who contribute in this final year project as a beautiful time, hardship, enjoyable experience and good memories for me. Million thanks to my supervisor, Madam Azilawati binti Azizan and my co-supervisor, Miss Mahani binti Kadri for all the helps, guidance, knowledge, motivation, advices and support. For me, all the knowledge and advices from my supervisor will contribute for my future and it will be the beautiful memorial in my life.

Besides, I would like to express my grateful and thanks towards my family especially both my parents, Zaman Shah bin Md Nor and Faridah binti Mohamed Yusoff for always being there for me. Thank you so much for giving me supports, understanding and always motivate me whenever I felt down and lost. Their prayers made me being strong and success in this world especially during this written thesis. Lastly, many thanks to my friends which indirectly gave me support, ideas and solution through my hardship and struggling during my final year project. Special thanks to those directly and indirectly contribute in my final year project. May Allah bless all of you with happiness and kindness.
ABSTRACT

This project is about designing an Augmented Reality (AR) mobile application for learning geometry topic in Mathematics. The main purpose of this application is to help the students in understanding the geometry concept. AR displays the virtual 3D object of the geometry shapes that help the students to understand the geometry shapes easily. Student will memorize each geometry shapes better by using AR compared to reading and observing through a textbook. This will help the students in memorizing the formula of the geometry shapes such as area and volume. The use of AR in the learning process provides a new learning environment to students. The learning process becomes fun and interesting with AR. In order to ensure the project is successful, SDLC model has been used in the development of this project. There are seven phases involved in the model to make sure that the project runs smoothly. The phases are planning, requirement gathering, requirement analysis, design, implementation, evaluation and documentation. This project was developed using Unity platform. As a result, students improved their skills and knowledge in geometry topic after using this application. Based on the post-survey result, they understand the topic better compared to the result from pre-survey. Future work for this application is by adding more geometry shapes in this application and a database for parents or teachers to measure the performance of their children or student.