BORANG PENGESAHAN STATUS TESIS*

JUDUL: MOBILE EDUCATIONAL GAME: TIMES MANIAC
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MOBILE EDUCATIONAL GAME: TIMES MANIAC

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This report is submitted in partial fulfillment of the requirements for the
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UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2010

DECLARATION

I hereby declare that this project report entitled

MOBILE EDUCATIONAL GAME: TIMES MANIAC

Is written by me and is my own effort and that no part has been plagiarized without citations.

STUDENT : _____ Date:_____

(ZURAIHA BINTI MOHAMAD)

SUPERVISOR : _____ Date:_____

(DR SAZILAH BINTI SALAM)

DEDICATION

Specially dedicated to my beloved parents, Mohamad Bin Mat Yassin and Eshah Binti Ibrahim,

For my supervisor, Dr.Sazilah Salam,
(UTeM)

And lastly to my beloved friends and who have encouraged, guided and inspired me throughout my journey in education

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ABSTRACT

This project is a mobile education game entitles Times Maniac and developed using Adobe Flash CS3 Professional and Adobe Flash Lite 2.0. This game is about multiplication number. The objective of this game is to train the primary school kids about one of the basic operations in mathematic which are multiplication. This project is to set the primary school kids mind that mathematic subject is easy and fun. This project's target user is to the primary school kids aged from 7 to 12 years old. This game was developing based on ARCS Model of Motivational Design by John Keller as a development methodology. This project will be deliverable on mobile phone which easier to bring anywhere.

ABSTRAK

Projek ini adalah sebuah permainan didalam telefon mudah alih bertemakan pembelajaran bertajuk Times Maniac yang dibangunkan dengan menggunakan Adobe Flash CS3 Professional dan Adobe Flash Lite 2.0. Permainan ini adalah melibatkan nombor pendaraban. Tujuan permainan ini dibangunkan adalah untuk melatih kanak-kanak sekolah rendah menguasai salah satu operasi asas matematik iaitu pendaraban. Permainan ini juga bertujuan untuk memupuk kanak-kanak sekolah rendah bahawa matematik ialah subjek yang senang dan seronok untuk dipelajari. Projek permainan ini disasarkan kepada golongan kanak-kanak sekolah rendah terutamanya yang berumur diantara 7 tahun hingga ke 12 tahun. Permainan ini dibangunkan mengikut ARCS Model of Motivational Design yang diasaskan oleh John Keller. Permainan Times Maniac ini akan dimainkan didalam telefon mudah alih yang begitu senang untuk dibawa ke mana-mana sahaja.

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LIST OF ABBREVIATIONS

PSM	- Projek Sarjana Muda
OS	- Operating System
PDA	- Personal Digital Assistant
ICT	- Information and communication technologies
MECC	- Minnesota Educational Computing Consortium
PSD	- Photoshop Data File Extension
PNG	- Portable Network Graphics
RAM	- Random-Access Memory
Swf	- Shockwave Flash
Wav	- Waveform Audio File Format
GIF	- Graphics Interchange Format
JPEG	- Joint Photographic Experts Group
DVD-R	- Digital Versatile Disc Recordable

CHAPTER I

INTRODUCTION

1.1 Project Background

Nowadays, game has becoming one of the hobbies when we have free time. Game is part of multimedia element that can deliver the lesson, moral values, and also entertainment. Games also become some of technology as a platform to develop a system or product that delivers the message to the public. Game can be played on personal computer, mobile phone, Microsoft Xbox, Playstations and so on. Most of the people find games is more interesting aid in learning rather than educational books. Game can be interesting, attractive and educational for people.

An educational game is a new way in teaching and learning method. It now becomes a trend in the market for this educational game. It can teach a lesson and users can have fun at the same time. Mobile phone is not only use for calling and messaging, it also can be use as educational tool. There a lot of educational games in the market using mobile phone as their platform for teaching.

In this project, mobile game which entitles Times Maniac is developed. This game is developed to help the children between ages 7-12 years old to remember and memorize the times table 2-9 in an easy way. This game is about learning the basic multiplication number. There will be three levels in this game. First level is easy which suitable for children between ages 7-8 years old. First level needs the player to choose the correct answer. There will be given four choices of answers. First level only consists of times table 2-4. Fifth teen questions will be given in the first level. Second level also knows as medium level. Second level is more suitable for children between ages 9-10 years old. This level needs the player to input a number in order to get the correct answer. Times table 5-7 involves in this level. The total question is also fifth teen in this level. Third level is hardest level especially for children between ages 11-12 years old. This level involves times table 8-9 and also has ten questions. This level also needs the player to input some numbers to get the correct answer. This game will help the children to learn, remember and calculate the times table fast.

This game is easy to understand and easy to play. It is also an interactive and fun while can get a benefit at the same time. Children always have difficulties in memorizing the time table. Therefore, this project will provide an easy way for the children to memorize the time table without having difficulties anymore.

1.2 Problem Statement

Currently, there are lots of mobile games in the market. But mostly the application is just for fun. There were several applications that only focus on educational term. Mathematic has become an important subject that the children need to master. Mathematic is useful in our daily life such as calculate money, time, and so on. All of above state need a mathematical concept. Basic mathematic elements consist of addition, subtraction, multiplication and division. Multiplication is one of the core elements in mathematics that the children should be master at their

young age. If they fail to master it now, they will face a big problem in the future where the mathematics subject will be harder and harder at highest level.

The problem is that some of the children seem to have difficulties to memorize the times table. They are too many numbers that need to be memorized by them. They can memorize the numbers but it only can last a day. They will not remember it on the next day. Therefore, the children will become more frustrating if they have to memorize the same thing again and again every day.

Moreover, children seem to be lazy to do the tutorial every day. They need to have a book, pencil and eraser when doing the exercise. That is the reason why they ignore and lazy to do the exercises. Besides, there is no interactivity or fun when they do the exercises on the book. Therefore, this project will provide an educational aid in order to help the children in memorizing the times table fast and easy.

1.3 Objectives

The objectives of the project are describes briefly as following:

i. To develop mobile game for learning the basic multiplication time table 2-9 that supporting in Flash Lite 2.0 which requires interaction, input data and also data manipulation.
ii. To design interesting and attractive mobile game to assist the children in improving their multiplication skill in interactive way and to help them remember the times table quicker and easier.
iii. To assess the effectiveness of the mobile game.

1.4 Scope

The scopes of this project will include the term of target user, contents to be developed and deliverable. The scopes are described as following:

1.4.1 Target User

Children are the target user whose has the potential user for this project.

i. **Children**

The age of the children is around 7 until 12 years old. It is better for them to learn and memorize the times table when they are still at young age. The age range between 7 until 12 years old is where the children are a fast learner.

1.4.2 Contents

The contents to be developed cover the followings:

i. Develop a mobile game about time table 2-9.
ii. The content should include interaction, input data and data manipulation.
iii. The product will use Adobe Flash CS3 Professional and Flash Lite 2.0.
iv. Consist of three levels which represent three modules.
v. First module is easy level that involves only simple multiplication of times table 2-4. The children need to choose the correct answer. First level consists of fifth teen questions.
vi. Second module is medium level that involves a little bit harder multiplication of times table 5-7. Second level consists of fifth teen questions. The player needs to input a number.
vii. Third module is hard level that involves multiplication of times table 8-9. Third level consists only of ten questions.

1.4.3 Deliverable

The product will be deliver using mobile phones on Symbian S60 OS which are compatible with Flash Lite 2.0.

1.5 Project Significance

This project will provide an easy way to memorize the time table for the child. The project that is been developed is focusing on using technology to help target users learn faster and perform better. Below are some of the significant of the project:

i. To help the children to calculate fast using their brain

The aim is to give an easy way for the children to memorize the time table. This game will teach the children to choose the correct answer.

ii. As a good platform for learning

Game is more interesting rather than just reading the time table book. That is the reason why the children have difficulties in memorizing the time table. The time table book is quite boring and not interesting at all. Therefore, mobile game is the best platform to teach them. This project will change the way to deliver the information.

Mobile learning can be an effective method of learning because it gives immediate information support to use anytime and anywhere. Mobile learning approaches allow learners to access learning efficiently anywhere and anytime as it is one of the hand-held devices instead of bring the books. Mobile is also easier to bring anywhere and at anytime.

1.6 Conclusion

This chapter is an introduction of a mobile edutainment games which are to be develop. It describes the project background; the problem statements, objective, scope and project significance. The problem statements explain the problems from the current situation and why this project should be develop. The objectives of the project are clearly stated which must be achievable and measureable at the end of the projects. The scopes describe the specific target users, contents and deliverable. The project significance describes the benefits that children will get from this project.

For the next chapter, it will discuss about literature review of several journey related with mobile games and methodology that will use to develop the mobile games.

CHAPTER II

LITERATURE REVIEW & PROJECT METHODOLOGY

2.1 Introduction

This chapter will be discuss in details about related literature review of several journey related with mobile games and methodology that will be use to develop the mobile games. The purpose is to ongoing research to develop that knowledge as publish material in order to establish the current knowledge of the project.

Literature review is secondary sources that refer to the study on collection of published materials in selected areas such as articles, journals, thesis, online library, technical's document and case studies.

This chapter also explains all the software and hardware that required to developing this project.

2.2 Domain

Nowadays, it would be difficult for children to focus on their studies. This is because the exercises books do not interesting and attractive to them. Game is already become a trend in the market but there is less game that related to education. Game can be played on Personal Computer, PlayStation, Xbox and others. While a mobile game is a game played on mobile phones, PDAs and Smartphone. Mobile Game-based Learning is a hybrid product that combines mobile learning and traditional game-based learning. The general definition of mobile learning is the knowledge transfer events, content, tools, and application built using Mobile Information Architecture and accessed on handheld computing device. The intent of Mobile Game-based Learning designers is to provide a user with a gaming experience that produces in a change in a mental state or behavior that can be recalled or repeated later.

There are several number of environments in which mobile applications can be develop such as Symbian operating system, BREW (Binary Runtime Environment for wireless), Microsoft's Windows CE and Windows Mobile, J2ME (Java 2 Micro Edition) and Flash Lite. Mobile game is categorized under ICT in mobile application. This is because the developer under Symbian Operating system mobile phone platform. Player will be challenged with the multiplication calculations.

Education is now become necessity in our daily life. Every subject which taught in school has both information and knowledge. Both knowledge and information have importance and clear aims. Mathematics education in primary school was aims to build students understanding of number concepts and their basic skill in computation. All these will be used by them in order to solve daily life problems effectively and responsibly. With mathematics, students are able to manage their daily life with discipline in keeping with the needs of building a developed nation and society as well as able to further their education [1].