

ACTION ADVENTURE GAME BASED ON FTMK ENVIRONMENT



UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BORANG PENGESAHAN STATUS TESIS

JUDUL: ACTION ADVENTURE GAME BASED ON FTMK ENVIRONMENT

SESI PENGAJIAN: 2016/2017

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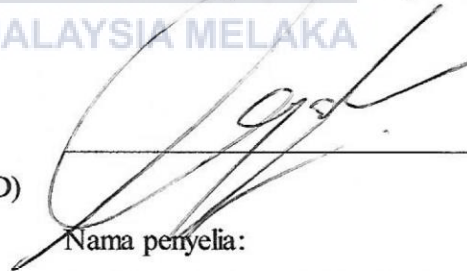
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**DEVELOP AN ACTION ADVENTURE GAME BASED ON FTMK
ENVIRONMENT**



**FACULTY OF INFORMATION COMMUNICATION AND TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA**

DECLARATION

I hereby declare that this project report entitled

ACTION ADVENTURE BASED ON FTMK ENVIRONMENT

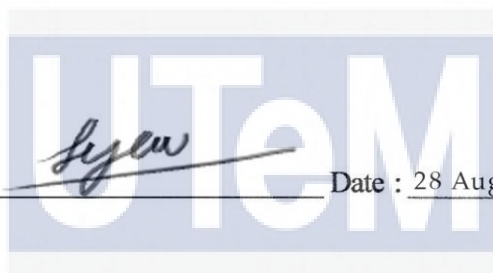
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STUDENT NAME:

Sejau

Date : 28 August 2017



اونيورسي تيكنيكل مليسيا ملاك

I hereby declare that I have read this project report and found this report is sufficient in term of the scope and quality for the award of Bachelor of Computer Science

(Game

Technology) With Honours.

SUPERVISOR NAME:

[Signature]

Date:

28 AUGUST 2017

DEDICATION

To my beloved family, lectures and friends.



ABSTRACT

Aim of this game is to promote Faculty of Information and Communication Technology (FICT) and teach a basic C++ programming using game. FICT is a faculty at University Teknikal Malaysia Melaka (UTeM) that offer computer science and information technology course. The Savior is an action adventure game that consist of several mission and story that need player to follow. The mission is involving of answer the question and fight the enemy. This game is action adventure where the game is not totally full educational game. It also have some entertainment and action in this game. The objective of this project is to study on action adventure game for educational based game. Next, to design and develop educational based action game that concentrating on promoting FICT. Finally, to evaluate, debug and then conduct a survey for the corresponding action adventure game. This project has four phase, which is Concepting phase, Per-Production phase and Post Production phase. The expected result is to let people know more about FICT and more understand C++ programming language.

ABSTRAK

Matlamat permainan ini adalah untuk memperkenalkan Fakulti Teknologi Maklumat dan Komunikasi (FTMK) dan serba sedikit mengajar asas bahasa pengaturcaraan C++. FTMK adalah fakulti di Universiti Teknikal Malaysia Melaka (UTeM) yang menawarkan kursus sains komputer dan teknologi maklumat. The Savior adalah permainan yg terdiri dari beberapa misi dan cerita dimana pemain perlu mengikutinya. Misi – misi tersebut termasuklah menjawab soalan dan melawan musuh. Permainan ini bukan permainan yang berunsurkan pembelajaran semata – mata. Ia juga telah dimasukkan unsur – unsur hiburan dan aksi. Objektif projek ini adalah untuk mengkaji tentang permainan pengembaraan aksi untuk permainan yang berasaskan pendidikan. Seterusnya, untuk membangunkan permainan pembelajaran berasaskan permainan pengembaraan aksi yang bertumpukan kepada mempromosikan FTMK. Akhirnya, untuk menilai, debug dan menjalankan kaji selidik keatas permainan pengembaraan aksi. Projek ini terdiri daripada 4 fasa, iaitu Fasa Pengkajian, Fasa Pra-Pengeluaran, dan Fasa Selepas Pengeluaran. Hasil yang diharapkan adalah untuk membolehkan orang ramai lebih mengetahui tentang FTMK dan lebih memahami Bahasa Pengaturcaraan C++.

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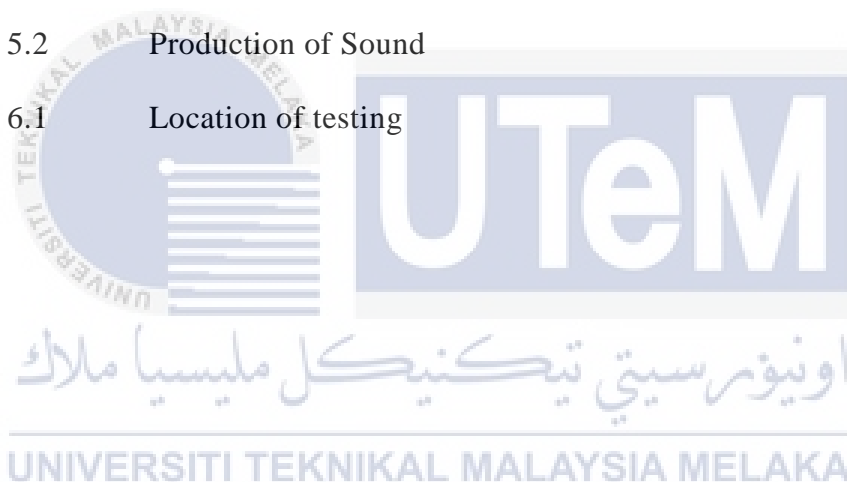
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CHAPTER I

INTRODUCTION

1.1 Project Background



UTeM is the only technical IPTA university in Malaysia. In UTeM there is many sophisticated facilities such as lecture room, high technology laboratory, robotic laboratory and high voltage laboratory. There is 9 faculty in UTeM which is Faculty of Electronics and Computer Engineering, Faculty of Electrical Engineering, Faculty of Mechanical Engineering, Faculty of Manufacturing Engineering Faculty of Information and Communication Technology, Faculty of Technology Management and Technopreneurship, Faculty of Engineering Technology, Centre for Language and Human Development and Institute of Technology Management and Entrepreneurship.

FICT is located at main campus of UTeM area at Durian Tunggal. In FICT there is 6 department which is Media Interactive (MI), Software Engineering (SE), Intelligent Computing and Analytic (ICA), Computer System and Communication (CSC), Administration and Technical and Support

Department. Other than that, FICT offer 6 undergraduate course which is Diploma in Information and Communication Technology, Bachelor of Information Technology (Game Technology), Bachelor of Computer Science (Computer Security), Bachelor of Computer Science (Software Development), Bachelor of Computer Science (Database Management), Bachelor of Computer Science (Interactive Media), Bachelor of Computer Science (Artificial Intelligent) and Bachelor of Computer Science (Computer Networking).

The purpose of this project is to promote FICT to people in UTeM and all around Malaysia by developing a game that called The Savior. The Savior is develop using Unity 3D game Engine. This game is focusing on people from 18 to 25 year old. This game help student more better about FICT and programming.

1.2 Problem Statement

UTeM student lack of information about FICT and its environment, especially new student and student from other faculty. Other than that, because FICT student itself is lacking in programming skill even they are ICT student.

1.3 Objective

- To conduct a study on Action Adventure Games for educational based game.
- To design and develop an educational based Action Adventure.
- To define game experience while playing the game.

1.4 Scope

The Savior will be developed using Unity 5 engine and deliverable into standalone PC. The target audience for this game are 18 – 25 years old children.

1.5 Project Significance

The Savior help player knowing more about FICT and its environment. Which is FICT environment consists of 2 wings, the wings is divided based on the department. The Savior will give benefits for 18 - 25 years old student in understanding FICT environment and programming. This game not cover up all about the programming but it will cover the basic part of programming. When the project is successfully developed, I hope the project will contribute to the FICT and UTeM.

1.6 Summary

As a conclusion, The Savior is a 3rd person view 3D game that developed by using Unity 5. The platform of this game is PC with keyboard and computer mouse as the input controller. The target audience is the children in age between 18 to 25 years old.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

This chapter will describe about the related literature review to support the project title. Literature review is collection of report of information related to your research topic. The review should describe, summarize, evaluate and clarify this literature.

2.2 Faculty of Information and Communication Technology

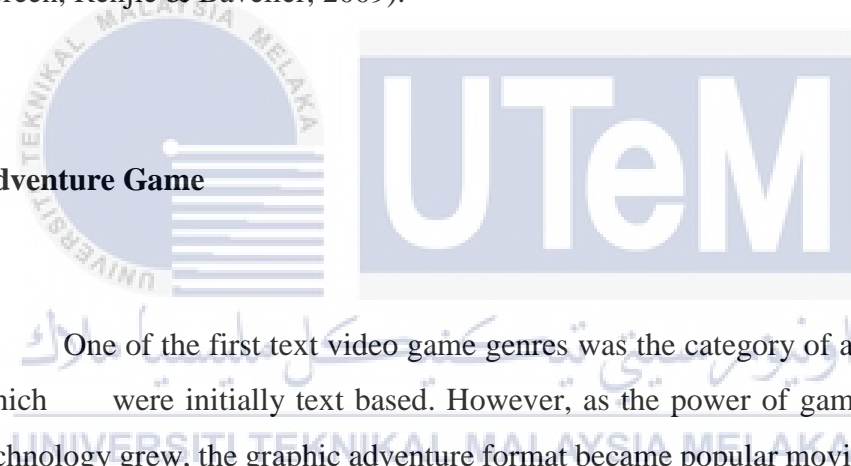
FICT is located at main campus of UTeM area at Durian Tunggal. The major course of this faculty is computer science and information technology. FICT offer 6 undergraduate course which is Diploma in Information and Communication Technology, Bachelor of Information Technology (Game Technology), Bachelor of Computer Science (Computer Security), Bachelor of Computer Science (Software Development), Bachelor of Computer Science

(Database Management), Bachelor of Computer Science (Interactive Media), Bachelor of Computer Science (Artificial Intelligent) and Bachelor of Computer Science (Computer Networking).

2.3 Action Game

Action game are all share a set of qualitative features, including extraordinary speed, a high degree of perceptual, cognitive and motor load in the service of an action accurate motor plan., unpredictability , and an emphasis on peripheral processing (Green, Renjie & Bavelier, 2009).

2.4 Adventure Game



One of the first text video game genres was the category of adventure game, which were initially text based. However, as the power of gaming system and technology grew, the graphic adventure format became popular moving toward point and click interfaces. They are not based on what the dictionary defines as adventure but the name stems from the game Adventure, which is also known as Colossal Cave Adventure. In an adventure game the player takes the role of a protagonist in an interactive story driven by exploration and puzzle solving (E. Adam, 2009). Player need to find and collect several artefacts, combine some of them together or talk to non-playable (NPC) characters that may give useful answers. Thus, they encompass an experience through story and narrative framework and the gameplay mechanics emphasizes decision over action.

2.5 Edutainment game

Edutainment means the integration between education and entertainment. Other than that television channel, edutainment had been also implemented in games software including all types of electronic game like computer game, consoles games, portable and handheld games. Edutainment is a game used to teach specific knowledge. There are characteristics for a game that categorized as an edutainment, which is (Bates B, 2004):

- The target is clearly stated.
- Identify the framework of the subject curriculum.
- Scope the user age because of the different level of thought among different ages of children.
- Interactivities are a key and very important.
- Interface should be simple but elegant.
- Involve emotional and fulfill the learning content with a target action.
- Reward frequently in various forms to promote and encourage the user.

2.6 Game Based Learning

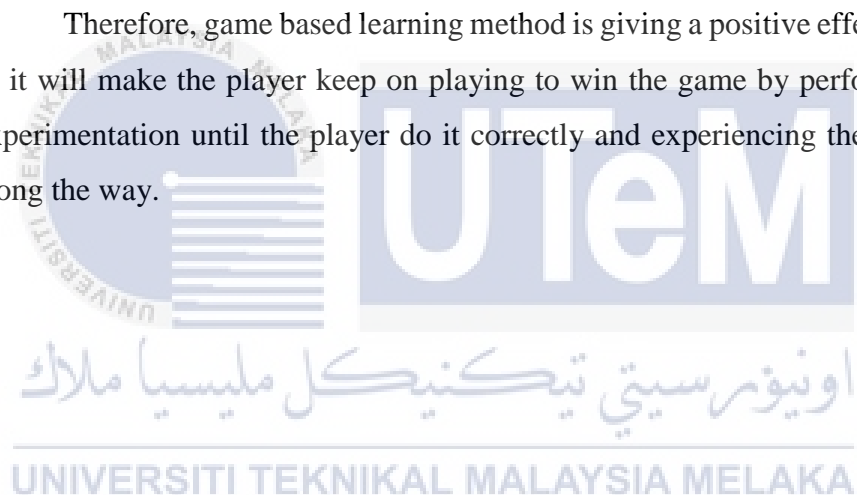
Game based learning (GBL) is defined as a gameplay which will give the learning outcomes. In general, GBL is actually another technique of teaching students in order to give more understandings and immersion into subjects or topics that they have to learn. The game based learning method can draw the player into virtual environments that look and feel like a familiar event.

To develop a game that will include an education is a challenge. Edutainment are sometimes fails to give the player a dynamic learning curve which is an

improvement to the player to keep on learning through the game. This happens because most of the developer create a the gameplay that is requires repetitive action and somehow demotivate the player to keep on playing (Denis & Jouvelot, 2005).

If the developer success in developing a game that is both fun to learn and play, the user might have the desire to make something by playing the game (Christopher et al., 2012). For an example, if the music game is both fun and entertaining, it could give an inspiration to the player to make music.

Therefore, game based learning method is giving a positive effect to the player as it will make the player keep on playing to win the game by performing actions, experimentation until the player do it correctly and experiencing the consequences along the way.



2.7 Existing System



Figure 2.1: Screenshot of Ryse: Son of Rome gameplay

Ryse: Son of Rome is an action-adventure hack and slash game played in a third-person perspective. Player control the hero as the leader soldier to fight and kill all his enemies in order to protect its empire. Player just has to follow its objective and storyline in order to win the game. The gameplay is linear.



Figure 2.2 Screenshot of Final Fantasy Crisis Core gameplay

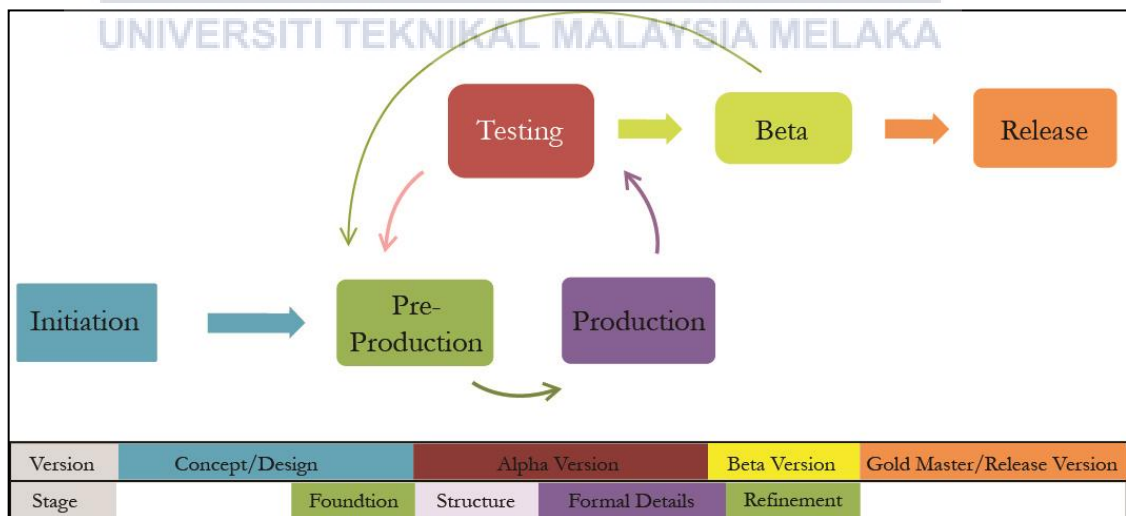
This game is an action role-playing game (RPG) in which player control the hero in an open world. An action role-playing game like this allow player to move the hero through and between open areas, allowing him to talk with non-playable characters, interact with the environment and engage monsters in battle. Once player complete the story and missions, the game is over.

Table 2.1: Comparison of existing system

| | Ryse: Son of Rome | Final Fantasy Crisis Core |
|-----------------|---|--|
| Platform | Xbox One Microsoft Windows | PlayStation Portable (PSP) |
| Genre | Action Adventure game | Action RPG game |
| Features | Player has to complete all story and objectives in order to win the game. | This game allow player to free roam and upgrade player's level and skills. Complete all the mission and story to win the game. |

2.8 Project Methodology

This project use Game Development Life Cycle (GDLC) method as a guideline in game development. The project planning and milestone are also planned and discussed.

**Figure 2.3: Game Development Life Cycle (GDLC)**

Phase One: Initiation

In this phase, it is brainstorming session with supervisor. Student should have their own idea whether to do game development or research. Then student can bring that idea to supervisor to get it clear.

Phase Two: Pre – Production

In this phase, student should gather information, identify problem statement, objective of the project and etc. Do the analysis and list the flow of the game or

research that will be carried out. After supervisor approved it, it is time to design the system architecture based on flow of the game.

Phase Three: Production

Production phase is an activity phase where the development of coding. Troubleshoot to solve any problems and bugs that may occur along the development process. Then play test it and fix if there any bugs occur. This phase may take longest time on the development process.