GAME BASED LEARNING: "MALAY CUISINE GAME"

NURUL ATIKAH BINTI MOHD FUAD

UNIVERSITI TEKNIKAL MALAYSIA MELAKA

BORANG PENGESAHAN STATUS TESIS^

JUDUL: GAME BASED LEARNING: "MALAY CUISINE GAME"

SESI PENGAJIAN: 2010/2011

Saya NURUL ATIKAH BINTI MOHD FUAD

mengaku membenarkan tesis (PSM) ini disimpan di Perpustakan Fakulti Teknologi Maklumat dan Komunikasi dengan syarat-syarat kegunaan seperti berikut:

- 1. Tesis dan projek adalah hakmilik Universiti Teknikal Malaysia, Melaka.
- 2. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan untuk tujuan pengajian sahaja.
- 3. Perpustakaan Fakulti Teknologi Maklumat dan Komunikasi dibenarkan membuat salinan tesis ini sebagai bahan pertukaran antara institusi pengajian tinggi.

(Mengandungi maklumat yang berdarjah keselamatan atau kepentingan Malaysia seperti yang termaktub di dalam AKTA RAHSIA RASMI 1972)
(Mengandungi maklumat terhad yang telah di tentukan oleh organisasi/badan di mana penyelidikan dijalankan)
1 Jane 11 Jane 11 Jane 11 Jane 12 Jane
amos
(TANDATÁNGÁN PENYELIA)
Pn. Norazlin bt Mohammed
Tarikh: 14/7/2011

CATATAN: ^Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM)

**Jika tesis ini SULIT atau TERHAD, sila lampirkan surat daripada pihak berkuasa

GAME BASED LEARNING: "MALAY CUISINE GAME"

NURUL ATIKAH BINTI MOHD FUAD

This report is submitted in partial fulfilment of the requirements for the Bachelor of Computer Science (Media Interactive)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY UNIVERSITI TEKNIKAL MALAYSIA MELAKA 2011

DECLARATION

I hereby declare that this project report entitled

GAME BASED LEARNING: "MALAY CUISINE GAME"

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

STUDENT

. **छ · ०**न · **२०**।।

SUPERVISOR

agaist

Date: 14/7/2011

(PN NORAZLIN BT MOHAMMED)

DEDICATION

To my beloved family.....

Mohd Fuad bin Yaakob and Misah binti Yaacob

Your strength, compassion and love are the greatest inspiration for me every day in my life

To PSM Supervisor

Puan Norazlin binti Mohammed

Your advice, ideas, and criticisms that you give to me provide gave me the strength to complete this project.

You are my inspiration.

Last but not least, to all my friends' Thank you for everything....

ACKNOWLEDGEMENT

Assalamualaikum W.R.T

Allah for giving me this opportunities to be able to complete this PSM 1 in good health and strength to overcome the stressful on doing the PSM 1. There are a lot of people that I have to thank to, directly or indirectly contributed in finishing this report. Our special thanks especially to our PSM Supervisor, Puan Nor Azlin Binti Mohammed for your guidance and advice.

In addition, I also want express sincere gratitude to my family, especially my parents who gave me support and encouragement to only just for completing this project, but since my first year in University of Technical Malaysia Melaka.

I also would like to praise thankful to my fellow friends, who patiently be with me and giving many critics and suggestions on how to improve my product and write the reports. Finally, I am blessed to my family for the full support, especially my mum and dad, who is always behind me without any condition. Frankly speaking, I really had a great time doing this PSM and share my experience even though it is stress me a lot. This is a great opportunities to gather experience by working alone.

ABSTRACT

Malay Cuisine Game is a game based learning that was developed through learning for children aged 6 years old and above. Recently, there are a lot of computer games available in the internet. But there is no traditional Malay cooking. Most of the games that available in the internet are mostly being adapted through to Western and Italian style cooking for example, "burger rush", "tomato and garlic pasta" and so on. There is no Malay cuisine available yet in the internet. This is good opportunities to expand the knowledge of traditional Malay cuisine to the worldwide by playing games. The game was developed based on traditional Malay cooking to give exposure to the children with traditional dishes. This game not only to educate children Malay cuisine but it is also to expose this cuisine to the global world. This game will help children to learn about cooking and ingredients used to cook traditional dishes. This can attract children to learn traditional cuisine with more depth. By using graphics, animation and sound effects, interest in children are more likely than from reading a recipe book available in book stores. The target users for this project are children who are within 6 years of age. This project will be module and stored in a compact disc. Hopefully with the creation of this game, it will help a little child to learn to cook without any injuries.

ABSTRAK

Malay Cuisine Game ialah sejenis permainan melalui pembelajaran yang dibangunkan untuk kanak-kanak berumur 6 tahun dan ke atas. Baru-baru ini, terdapat banyak permainan komputer di internet. Tetapi tidak ada permainan masakan tradisional Melayu. Kebanyakan yang terdapat di internet kebanyakannya adalah masakan gaya Barat dan Itali sebagai contoh, "burger rush", "pasta tomato dan bawang putih" dan sebagainya. Akan tetapi, permainan masakan melayu jarang lagi ditemu di internet kini. Ini adalah peluang yang baik untuk mengembangkan pengetahuan dalam masakan tradisional Melayu ke seluruh dunia dengan melalui permainan. Permainan ini dibangunkan berdasarkan masakan tradisional orang melayu untuk diberi pendedahan kepada kanak-kanak dengan lebih meluas tentang masakan tradisional. Permainan ini bukan sahaja untuk memberikan pengetahuan tentang budaya masakan makanan melayu bahkan ia juga untuk mengembangkan budaya masakan ke pasaran global. Permainan ini akan membantu kanak-kanak untuk belajar tentang masakan dan juga bahan-bahan yang digunakan untuk memasak masakan tradisional. Ini dapat menarik minat kanakkanak untuk belajar masakan tradisional dengan lebih mendalam. Dengan menggunakan grafik, animasi, suara dan efek bunyian, minat kanak - kanak akan lebih cenderung berbanding dari membaca buku resipi yang terdapat di kedai buku. Sasaran pengguna bagi projek ini ialah kanak-kanak yang berumur dalam lingkungan 6 tahun keatas. Projek ini akan dimodulkan dan disimpan dalam bentuk cakera padat. Diharapkan dengan wujudnya permainan ini, ia akan membantu serba sedikit kanak-kanak untuk belajar memasak tanpa perlu membahayakan diri sendiri jika tiada perhatian dari orang dewasa.

TABLE OF CONTENTS

CHAPTER	SU	ВЈЕСТ	PAGE
	DE	CCLARATION	ii
	DE	CDICATION	iii
	AC	CKNOWLEDGEMENTS	iv
	AB	STRACT	$\ddot{\mathbf{v}}$
	AB	STRAK	vi
	TA	BLE OF CONTENT	vii
	LIS	ST OF TABLE	xiv
	LIS	ST OF FIGURES	xvi
	LIS	ST OFABBREVIATIONS	xix
	LIS	ST OF APPENDIX	xvii
CHAPTER I	INT	TRODUCTION	
	1.1	Project Background	1
	1.2	Problem Statements	2
	1.3	Objective	3
	1.4	Scope	3
	1.5	Project Significant	4
	1.6	Conclusion	5

CHAPTER II	LITE	ERATURE REVIEW AND PROJECT METHODO	LOGY
	2.1	Introduction	6
	2.2	Domain	6
	2.3	Existing System	9
		2.3.1 Cooking Academy	9
		2.3.2 Pizza Pronto	10
		2.3.3 Junior Master Chef Australia	11
		2.3.4 Comparison of existing system	12
	2.4	Project Methodology	13
		2.4.1 Instructional Design	16
	2.5	Project Requirement	21
		2.5.1 Softwäre Requirement	21
		2.5.2 Hardware Requirement	22
	2.6	Conclusion	22
CHAPTER III	ANA	LYSIS	
	3.1	Introduction	23
	3.2	Current Scenario Analysis	<u>2</u> 4
		3.2.1 Cooking Academy Games	24
		3.2.2 Pizza Pronto	26
		3.2.3 Junior Master Chef Australia	27
	3.3	Requirements Analysis	29
		3.3.1 Project Requirement	30
		3.3.1.1 Requirements Gathering	30
		3.3.1.2 Technical Analysis	32
		3.3.1.3 Need Analysis	32
		3.3.1.4 User Analysis	33
		3.3.1.5 Resources Analysis	37
		3.3.2 Software Requirement	37
		3.3.2.1 Technical Requirement	37
		3.3.2.2 Management Requirement	38

		3.3.3 Hardware Requirement	39
	3.4	Project Schedule and Milestones	40
	3.5	Conclusion	42
CHAPTER IV	PRO	DUCT DESIGN	
	4.1	Introduction	44
	4.2	System Architecture	44
	4.3	Preliminary Design	46
		4.3.1 Storyboarding Design	47
	4.4	User Interface Design	56
		4.4.1 Input Design	59
		4.4.2 Metaphor	59
	4.5	Conclusion	59
CHAPTER V I	MPL	EMENTATION	
	5.1	Introduction	60
	5.2	Media Creation	61
		5.2.1 Production of Texts	61
		5.2.2 Production of Graphics	63
		5.2.3 Production of Audio	65
		5.2.4 Production of Animation	66
	5.3	Media Integration	67
	5.4	Product Configuration Management	68
		5.4.1 Configuration Environment Setup	68
		5.4.2 Version Control Procedure	69
	5.5	Implementation Status	70
	5.6	Conclusion	71
CHAPTER VI	TEST	ING AND EVALUATION	
	6.1	Introduction	73
	6.2	Test Plan	74

	6.2.1 Test User	74
	6.2.2 Test Environment	75
	6.2.3 Test Schedule	77
	6.2.4 Test Strategy	78
	6.2.4.1 Alpha Testing	78
	6.2.4.2 Beta Testing	79
6.3	Test Implementation	80
	6.3.1 Test Description	80
	6.3.2 Test Data	83
	6.3.3 Test Result and Analysis	93
	6.3.4 Analysis Testing	106
6.4	Conclusion	109
CHAPTER VII CON		
7.1	Introduction	110
7.2	Observation on Weaknesses and Strength	110
	7.2.1 Weaknesses	111
	7.2.2 Strength	111
7.3	Proposition for Improvement	112
7.4	Contribution	112
7.5	Conclusion	113
REFERENCES		114
APPENDX A	PROJECT PROPOSAL FORM	
APPENDIX B	NDIX B GAME BASED LEARNING	
APPENDIX C	GANTT CHART	
APPENDIX D	QUESTIONNAIRES	

LIST OF TABLES

TABLE	TITLE	PAGE
2.1	Comparison between traditional game and	
	game based learning techniques	8
2.2	Comparison of Existing System	12
3.1	Hardware Requirement	39
3.2	Project Schedule	40
5.1	Production of Texts	62
5.2	Production of Graphics	64
5.3	Audio Productions	65
5.4	Environment Setup	68
5.5	Version Control Procedure for Alpha Testing	69
5.6	Version Control Procedure for Beta Testing	70
5.7	Implementation Status for Malay Cuisine Game	70
6.1	Test Location for Malay Cuisine Game	76
6.2	Hardware and Software Requirement for Testing	76
6.3	Testing Schedule for Malay Cuisine Game	77
6.4	Strategy for Testing	79
6.5	Level of Evaluation / Rate	80
6.6	Sample of Usability Testing Question	81
6.7	Sample of User Acceptance Testing Question	82
6.8	Functionality Testing in Alpha Testing for	

	Multimedia Developer	83
6.9	Result of Usability Testing	94
6.10	Result of User Acceptance Testing	99
6.11	Analysis of Each Question in Usability Testing	106
6.12	Analysis of Each Question in User Acceptance Testing	107
6.13	Observation Result	108

LIST OF FIGURES

FIGURE	TITLE	PAGE
2.1	Cooking Academy Game	10
2.2	Pizza Pronto	11
2.3	Television Show Junior Master Chef Australia	12
2.4	ADDIE Model	14
2.5	Flow Chart for Level 1	17
2,6	Flow Chart for Level 2	18
2.7	Flow Chart for Level 3	19
3.1	Main Menu for Cooking Academy Game	25
3.2	Flow Chart for Cooking Academy Game	25
3.3	Main Menu for Pizza Pronto	26
3.4	Flow Chart for Pizza Pronto Game	27
3.5	Junior Master Chef Logo	28
3.6	Junior Master Chef Plot	29
3.7	Flow Chart for Malay Cuisine Game	31
3.8	Percentage of children's like to play games	34
3.9	Percentage of children's that like to watch cartoon	34
3.10	Percentage of having Computer/Notebook at home	35
3.11	Percentage of Having Internet at Home	35
3.12	Percentage of Know How to Cook	36
3,13	Percentage of Where Learn How to Cook	36
3.14	Percentage of Having Computer/Notebook at Home	37

4.1	System Architecture	45
4.2	Interface of Main Menu	47
4.3	Interface of Menu	58
4.4	Interface of Menu's Today	49
4.5	Interface of Ingredient Need	50
4.6	Interface of Ingredient Matching	51
4.7	Interface of Prepare Ingredient	52
4.8	Interface of Ingredient Need	53
4.9	Interface of Ingredient Matching	54
4.10	Interface of Prepare Ingredient	55
4.11	Interface of Decorating and Present the Dishes	56
4.12	Character for "Malay Culsine Game"	57
4.13	Ingredient for "Nasi Lemak"	57
4.14	Ingrédient for "Sambal"	58
4.15	Interface for Kitchen Environment	58
5.1	Flow of the process to use the downloaded font	63
5.2	Flow how graphic are bent into design.	64
5.3	Process to embed sound into flash.	66
5.4	Process of Animation	67
5.5	Media Integration Process	68
6.1	Graph of Q2 Usability Testing	95
6.2	Graph of Q2 Usability Testing	95
6.3	Graph of Q3 Usability Testing	95
6.4	Graph of Q4 Usability Testing	96
6.5	Graph of Q5 Usability Testing	96
6.6	Graph of Q6 Usability Testing	97
6.7	Graph of Q7 Usability Testing	97
6.8	Graph of Q8 Usability Testing	98
6.9	Graph of Q9 Usability Testing	98
6.10	Graph of Q10 Usability Testing	99
6.11	Graph of Q1 User Acceptance Testing	100

6.12	Graph of Q2 User Acceptance Testing	101
6.13	Graph of Q3 User Acceptance Testing	101
6.14	Graph of Q4 User Acceptance Testing	102
6.15	Graph of Q5 User Acceptance Testing	102
6.16	Graph of Q6 User Acceptance Testing	103
6.17	Graph of Q7 User Acceptance Testing	103
6.18	Graph of Q8 User Acceptance Testing	104
6.19	Graph of Q9 User Acceptance Testing	104
6.20	Graph of Q10 User Acceptance Testing	105
6.21	Graph of Q11 User Acceptance Testing	105
6.22	Graph of Usability Testing	106
6.23	Graph of User Acceptance Testing	107

LIST OF ABBREVIATION

PSM Projek Sarjana Muda

UTeM Universiti Teknikal Malaysia Melaka

PC Personal Computer

2D Two Dimentional

CS4 Creative Suite 4

TV Television

ADDIE Analysis, Design, Development, Implementation, Evaluation

ISD Instructional System Design

UI User Interface

DVD-R Digital Versatile Disc - Recordable

LIST OF APPENDIX

APPENDIA	HILE
A	Project Proposal Form
В	Game Based Learning
C	Gantt Chart
D	Questionnaire

CHAPTER I

INTRODUCTION

1.1 Project Background

These days, there are a bunch of the computer games based on learning which available on the market and the internet whether its free or we have to purchase it. Game based learning can motivate children to learn better. It is because game contains fantasy element which engages children in learning activity. Therefore, games become children's favorite activities to make good use of their leisure time. This game not only to fulfill their leisure time, but it is integration of learning to make it more fun.

The project will be developed is 'Games Based Learning: Malay Cuisine Food'. It is a flash game application for children to practice how to cook traditional cuisine Malay food. There are bunch online computer games about the cooking games such as "burger rush", "pizza match", "tomato and garlic pasta" and so on. But most of the cooking style that available is for western food and Italian. There is no Malay traditional game available yet in the internet so far. Therefore, this computer game is used to educate the children how to cook traditional Malay food while expanding the Malay cuisine while playing this game. This game also develops to know how child brain works think while playing this game.

"Malay Cuisine Food" contains two different levels which are level one and level two. Level one is different from the level two. In this level, player needs to prepare the ingredients of the food. Player have to pass the level one before proceed to the level two. In this level, players have to pass the score in other to go to next level. In the level two, player will be constructing on how to make the dish step by step. From this level, player will give the mark based on speed of making the dish and also know some of the basic Malay cuisine indirectly, so that they can learn it in real life. The score will be counted for each level.

1.2 Problem Statements

Recently, there are a lot of computer games available in the internet. But there is no traditional Malay cooking. Most of the games that available in the internet are mostly being adapted through to Western and Italian style cooking for example, "burger rush", "tomato and garlic pasta" and so on. There is no Malay cuisine available yet in the internet. This is good opportunities to expand the knowledge of traditional Malay cuisine to the worldwide by playing games.

Besides that, most of the recipe for the traditional Malay dishes can be seen at the bookstore. But then, the book is very complicated and full of text. The content also not clears enough to be read or understand by children. Children may feel uninteresting to learn the food through the book because the book is full of static image and text will make the children no interested on cooking. The animated image and sound will improve the attention of the student to play the cooking game.

In addition, there is also Television Cooking Program providing in Malaysia but it still have their limit. The preparation of the ingredient is fast to confuse the children. In other country, there is a cooking program that show talent from children who can cook. The program name's "Star junior Chef". This show is very interesting because they use children thinking to attract children interest.

Therefore this project will be development not to compare with other PC games professional developed animation. It is develop to be able to trigger a child's brain creativity and to enlarge their maturity in thinking.

1.3 Objective

In developing this 2D Game based learning there are some objectives that would like to be achieved. It is hopefully that list of objectives for this project will help to achieve the goals of this project. The objective of this project as stated below:

• To develop a cooking game for children

- The main objective of this project is to produce a game application that can stimulate child's creativity on cooking.

• To educate children how to cook the simple Malay food

- By playing this game, children will acknowledge what are the ingredients that use in Malay food.

• To apply multimedia and interactive elements

 Such as audio, sound and graphic to the project. Such as animation, video and audio interaction which it can make an attraction to viewers interest which is children.

1.4 Scope

This flash game is developed for children six years old and above. As kids at the age of 6 years old and above is very active and curios of every single thing at their surroundings. This is game based learning which children can learn the Malay food through this game. Besides that, this product is focusing on parents having kids. Parents can use the game to teach their children about cooking and at the same time to train the children to become more creative.

This game has three levels to accomplish the task. For the first level- Prepare Ingridient, player will be show the ingredient to make the dishes; in this case it is ingredient for making "Nasi Lemak". Player can click the suitable ingredient in making the dishes. Then for the second level-Cooking is, the player will start the cooking session. Each step will be taught accordingly. Last but not least, the third

level is the presentation of the dishes. The player will be given the step which one should be put first in the plate. For example the rice will be on the centre, and the *sambal* will be on the side same with the egg, and cucumber.

The score of each level will be counted. Player has to play this game level by level which is start from level one to level two. In the level one, player's score have to achieve a target before proceed to level two by preparing the ingredient of the food before proceed to the next level. If the score didn't pass the minimum marks, player can't go to the next level

This flash game is standalone personal computer game which it can only have one player. It will use the Windows platform to run this game.

1.5 Project Significance

The game based learning will be formed indicate especially to the young target users who are the 6 years old and above children. For the parents, this project will benefit them on learning the new concept of cooking through game. This Malay Cooking flash game may bring some benefits to the children and parents. For the children, they can understand the ingredient that being using in the malay food also the thing that abstinence while cooking the food. It also can be another platform for the children to practice how to cook before going to the kitchen. Because in the reality there is lot of thing could dangerous to the child for example knife and scissor.

Besides that, they also can receive the information about the food. This game can become as a good activity for them to make good use of their leisure time. Most of the parents are busy with their work. Therefore, parent can use this game as their informal education in home. It also will be safe for the child to learn this thing through game instead of practicing in the kitchen. It could be more dangerous while parents not at home. This will be more effective method of teaching.

1.6 Conclusion

This chapter is holding the idea of the whole game based learning through cooking game to observe how children observe surrounding and thought. This game is developing for children 6 years old and above. This game is developing using windows program and Adobe Flash CS4 platform as software to develop the game.

The next chapter is on the topic of literature review and project methodology. It will be clearing up about the project domain, existing system, technique being use, project methodology and project requirement. It will also include project schedule and milestone.