

BORANG PENGESAHAN STATUS TESIS*

JUDUL: JONY-THE UNFRIENDLY RIVER (2D ANIMATION COMBINE
WITH INTERACTIVE GAMES)

SESI PENGAJIAN: 2011 / 2012

Saya SITI SUZANA BINTI IBRAHIM

mengaku membenarkan tesis Projek Sarjana Muda ini disimpan di Perpustakaan 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.
4. ** Sila tandakan (/)

 SULIT (Mengandungi maklumat yang berdarjah
keselamatan atau kepentingan Malaysia seperti
yang termaktub di dalam AKTA RAHSIA
RASMI 1972)

 TERHAD (Mengandungi maklumat TERHAD yang telah
ditentukan oleh organisasi/badan di mana
penyelidikan dijalankan)

 / TIDAK TERHAD


(TANDATANGAN PENULIS)

Alamat tetap: 79, KAMPUNG PASIR
PEKAN
16250 WAKAF BHARU
KELANTAN

Tarikh: 30/8/2012


(TANDATANGAN PENYELIA)

EN AHMAD SHAARIZAN BIN
SHAARANI
Nama Penyelia

Tarikh: 30/8/2012

CATATAN: * Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM).
** Jika tesis ini SULIT atau TERHAD, sila lampirkan surat
daripada pihak berkuasa.

DECLARATION

I hereby declare that this project report entitled
JONY-THE UNFRIENDLY RIVER
(2D ANIMATION COMBINE WITH INTERACTIVE GAMES)

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

STUDENT : Suzana Ibrahim Date: 30/8/2012
(SITI SUZANA BINTI IBRAHIM)

SUPERVISOR : Af Shizan Date: 30/8/2012
(EN AHMAD SHAARIZAN BIN SHAARANI)

DEDICATION

For all the time that passed by....

ACKNOWLEDGEMENTS

Bissmillahirrahmanirrahim,

Alhamdulillah. Thanks to Allah SWT, who with His willing give me the opportunity to complete this Final Year Project which entitles Jony-The Unfriendly River (2D Animation Combine with Interactive Games). This final year project report was prepared for Faculty of Information and Communication Technology, University Technical Malaysia Melaka (UTeM), basically for student in final year to complete the undergraduate program that leads to the degree of Bachelor of Computer Science (Interactive Media).

Firstly, I would like to express my sincere thanks to, Mr Ahmad Shaarizan bin Shaarani, a lecturer at Faculty of Information and Communication Technology, UTeM and also assign, as my supervisor who had guided a lot of task during two semesters session 2011/2012. Your moral support and continuous guidance enabled me to complete my final project successfully.

Deepest thanks and appreciation to my parents, family, and others for their cooperation, encouragement, constructive suggestion and full of support for the report completion, from the beginning till the end. Also thanks to all of my friends and everyone, those have been contributed by supporting my work and help myself during the final year project progress till it is fully completed. Thank you very much.

Last but not least, my thanks to Faculty of Information and Communication Technology, University Technical Malaysia Melaka (UTeM) for all the facility provided. With this project, I am able to practice what I have learned from the beginning of my studies in UTeM.

ABSTRACT

Jony-The Unfriendly River is the Final Year Project (FYP) for Projek Sarjana Muda (PSM). This project is developed for target user aged six to ten years old. This project is mainly to develop a short animation story combine with interactive games because the most of the 2D animation nowadays that have on the market is merely just a story. Besides, this project also was developed to give awareness to users that in life friends are very important. The combination of storyline with interactive games attracts users to pay more attention to this animation story. There are several instruction needs to follow up while watching this animation story to make sure the user can complete watching the story without any problem. There are four methods are using to test this project which are user interface testing, understanding testing, content testing and functionality testing. Two groups of users involves in this testing which are children aged six to ten years old and multimedia students. Based on the testing, the results achieved the objectives. There are also several ways to make this animation interesting which are including the sound effect and background music into the animation story. In this ways, users will feel enjoyable and not bored watching this story. This project will be very useful project to children because it provided a lot of moral values and good messages.

ABSTRAK

Jony-The Unfriendly River adalah Projek Tahun Akhir untuk Projek Sarjana Muda (PSM). Projek ini dibangunkan untuk pengguna yang berusia antara enam hingga sepuluh tahun. Tujuan utama projek ini membangunkan satu cerita animasi pendek bergabung dengan permainan interaktif adalah kerana sekarang, kebanyakan animasi 2D yang terdapat di pasaran hanyalah sebuah cerita semata-mata. Disamping itu, projek ini juga telah dibangunkan untuk memberi kesedaran kepada pengguna bahawa dalam kehidupan mempunyai kawan adalah sangat penting. Gabungan cerita dengan permainan interaktif menarik minat pengguna untuk memberi perhatian yang lebih kepada jalan cerita animasi ini. Terdapat beberapa arahan yang perlu dipatuhi ketika menonton cerita animasi ini bagi memastikan pengguna tiada sebarang masalah menonton cerita ini sehingga habis. Terdapat empat kaedah yang digunakan untuk menguji projek ini antaranya ialah ujian antara muka untuk pengguna, ujian kefahaman, ujian isi kandungan dan ujian fungsi. Dua kumpulan pengguna terlibat dalam ujian ini antaranya adalah kanak-kanak berusia antara enam hingga sepuluh tahun dan juga pelajar multimedia. Berdasarkan ujian yang dijalankan, keputusan mencapai matlamat objektif. Terdapat beberapa kaedah yang membuatkan animasi ini lebih menarik iaitu memasukkan kesan bunyi dan latar belakang muzik. Dengan ini, pengguna akan terhibur dan tidak bosan menonton animasi ini. Projek ini akan menjadi projek yang berguna kepada kanak-kanak kerana di dalamnya terdapat banyak nilai-nilai murni dan pengajaran yang boleh dicontohi.

TABLE OF CONTENTS

CHAPTER	SUBJECT	PAGE
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENTS	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xi
	LIST OF FIGURES	xiii
	LIST OF ABBREVIATIONS	xv
CHAPTER I	INTRODUCTION	
	1.1 Project Background	1
	1.2 Problem Statement	2
	1.3 Objectives	2
	1.4 Scope	3
	1.5 Project Significance	3
	1.6 Conclusion	4
CHAPTER II	LITERATURE REVIEW AND PROJECT METHODOLOGY	
	2.1 Introduction	5

2.2	Domain	8
2.3	Existing System	9
2.3.1	Comparison of Existing System	11
2.4	Project Methodology	11
2.4.1	Pre-Production	12
2.4.2	Production	12
2.4.3	Post-Production	13
2.5	Project Requirement	13
2.5.1	Software Requirement	14
2.5.2	Hardware Requirement	16
2.6	Conclusion	16
 CHAPTER III ANALYSIS		
3.1	Introduction	17
3.2	Current Scenario Analysis	18
3.2.1	Hikayat Sang Kancil dan Buaya	18
3.2.2	Dora the Explorer	19
3.3	Requirement Analysis	20
3.3.1	Project Requirement	20
3.3.1.1	Requirement gathering	21
3.3.1.1.2	Questionnaire	21
3.3.1.1.3	Project Functionality	23
3.3.2	Software Requirement	24
3.3.2.1	Software Development Requirement	25
3.3.2.2	Software Management Requirement	27
3.3.3	Hardware Requirement	28
3.4	Project Schedule and Milestone	29
3.5	Conclusion	30
 CHAPTER IV DESIGN		
4.1	Introduction	31

4.2	System Architecture	32
4.3	Preliminary Design	33
4.3.1	Interactive Storyboard Design	33
4.3.1.1	Interface Design	33
4.3.2	Character Profile	35
4.4	User Interface Design	36
4.4.1	Navigation Design	36
4.4.1.1	Application Navigation Chart	36
4.4.2	Input and Output Design	38
4.5	Conclusion	38
CHAPTER V	IMPLEMENTATION	
5.1	Introduction	39
5.2	Media Creation	40
5.2.1	Production of Text	40
5.2.2	Production of Graphic	45
5.2.3	Production of Audio	47
5.2.4	Production of Animation	49
5.3	Media Integration	51
5.4	Product Configuration Management	54
5.4.1	Configuration Environment Setup	54
5.4.2	Version Control Procedure	55
5.5	Implementation Status	56
5.6	Conclusion	57
CHAPTER VI	TESTING AND EVALUATION	
6.1	Introduction	58
6.2	Test Plan	59
6.2.1	Test User	59
6.2.2	Test Environment	60
6.2.3	Test Schedule	60

6.2.4	Test Strategy	61
6.3	Test Implementation	65
6.3.1	Test Description	65
6.3.2	Test Result and Analysis	65
6.3.3	Analysis Testing	79
6.4	Conclusion	87

CHAPTER VII PROJECT CONCLUSION

7.1	Observation on Weaknesses and Strengths	88
7.1.1	Project Weaknesses	88
7.1.2	Project Strengths	89
7.2	Propositions for Improvements	90
7.3	Contribution	91
7.4	Conclusion	91

REFERENCES

APPENDIX A

APPENDIX B

APPENDIX C

APPENDIX D

APPENDIX E

APPENDIX F

LIST OF TABLES

TABLE	TITLE	PAGE
2.1	Comparison of Existing System	11
2.2	Software Requirement	14
2.3	Hardware Requirement	16
3.1	Software Development Requirement	25
3.2	Software Management Requirement	27
3.3	Hardware Requirement	28
3.4	Project Schedule	29
4.1	Input and Output Design	38
5.1	Text Production	41
5.2	Configuration Environment Setup	55
5.3	Version Control Procedure	56
5.4	Implementation Status	56
6.1	Hardware Requirement for Testing	60
6.2	Testing Schedule	61
6.3	Level of Questionnaire evaluation	61
6.4	Questionnaire for Understanding Testing	62
6.5	Questionnaire for Functionality Testing	63
6.6	Questionnaire for Content Testing	63
6.7	Questionnaire of User Interface Testing for Children	64
6.8	Questionnaire of User Interface Testing for Multimedia Student	64
6.9	Result of Understanding Testing	66
6.10	Chart and Graph for every question in Understanding Testing	66

6.11	Result of Functionality Testing	69
6.12	Chart and Graph for every question in Functionality Testing	69
6.13	Result of Content Testing	72
6.14	Graph for every question in Content Testing	72
6.15	Result of User Interface Testing for Children	75
6.16	Chart and Graph for every question in User Interface Testing for Children	75
6.17	Result of User Interface Testing for Multimedia Students	77
6.18	Chart and Graph for every question in User Interface Testing for Multimedia Students	77
6.19	Mean, Median and Mode based on understanding testing	80
6.20	Mean, Median and Mode based on functionality testing	82
6.21	Mean, Median and Mode based on content testing	83
6.22	Mean, Median and Mode based on user interface testing for children	85
6.23	Mean, Median and Mode based on user interface testing for multimedia students	86

LIST OF FIGURES

FIGURE	TITLE	PAGE
2.1	Example of Flinstons	6
2.2	Example of Benny's Booty	7
2.3	Example of clay animation 'Mio Mao'	8
2.4	Example of Hikayat Sang Kancil dan Buaya	10
2.5	Example of Dora Explorer	10
2.6	Production process	12
3.1	Hikayat Sang Kancil dan Buaya	19
3.2	Dora the Explorer	20
3.3	The Percentage of Respondent that Like to Watch Cartoon	21
3.4	The Percentage of Respondent whether They have seen 2D Animation Combine with Games Before	22
3.5	Main page	23
3.6	Example Interface of games in story	24
4.1	System Architecture	32
4.2	Montage	33
4.3	Main Page	34
4.4	Instruction about the story	34
4.5	Application Navigation Chart	37
5.1	The montage	42
5.2	The title and button	42
5.3	The instruction	43
5.4	Subtitles	43

5.5	Games and button	44
5.6	The Process of creating the fonts in Adobe Flash CS5.5	44
5.7	The production of graphics in Adobe Flash CS5.5	45
5.8	Example of graphics which is been displayed after published	46
5.9	The production of graphic process	46
5.10	The production of audio process	48
5.11	The production of audio in Adobe Audition CS5.5	49
5.12	Example of animation using motion tween	50
5.13	Example of animation using bone tools	50
5.14	Example of animation frame by frame	51
5.15	Media integration process	52
5.16	Example of simple ActionScript 3.0	53
5.17	Example of ActionScript 3.0 using in activities	53
5.18	Example of .swf, .exe and .fla file format	54
6.1	Formula of Mean	79
6.2	Formula of Median	80
6.3	Formula of Mode	80
6.4	Graph of Understanding Testing Result	81
6.5	Graph of Functionality Testing Result	82
6.6	Graph of Content Testing Result	84
6.7	Graph of Interface Testing Result for Children	85
6.8	Graph of Interface Testing Result for Multimedia Students	86

LIST OF ABBREVIATIONS

2D	-	Two Dimensional
3D	-	Three Dimensional
Cel	-	Celluloid
CMYK	-	Cyan Magenta Yellow Key(Black)
RGB	-	Red Green Blue
CD	-	Compact Disc
VCD	-	Video Compact Disc
R	-	Respondent
No.	-	Number
UTeM	-	Universiti Teknikal Malaysia Melaka

CHAPTER I

INTRODUCTION

1.1 Project Background

"What is a friendship? True friendship is perhaps the only relation that endures the trials and distresses of time. A unique combine of faithfulness, love, esteem, belief and loads of fun is perhaps what describes the exact meaning of friendship. Similar interests, common respect and durable affection with each other are what friends share among each other. These are just the general qualities of a friendship. To understanding what friendship is, one must have real friends, who are indeed rare treasure.

Friendship is a feeling of comfort and emotional safety with a person [1]. This feeling is when someone knows you well than yourself and convinces to be your side in every emotional crisis. Friendship is much beyond roaming together and distribution worthy moments when someone comes to salvage you from the nastiest phase of life. Different people have different explanations of friendship. Some people taught that belief is significant in friendship. There are some who sense that friendship is companionship. People form classifications based on the kind of experiences they have had. This is one relation that has been rear since time ancient. Someone says a person who has found a truthful friend has found a precious treasure. This project tries to develop 2D animation namely "Jony-The Unfriendly River" which is provided awareness about the important of friendship in life.

There are two main characters in this short story which are Jony and Rara. Jony is named of the river. Jony's character shows the felt of loneliness. He more like to be alone and hated to be friend. Rara is the name of the little turtle that release by a little girl into the river. Rara's character is always happy and not give up even thought someone she wants to become friend ignore her. Rara help Jony adapt friend in his life. Jony realize that life without friends do not bring happiness in his life. This animation combines linear animation storyline and interactive games. There will be a mission that needs to be completed by the users. Before users completed the task, they cannot continue watching next part of story. This makes this story more interactive and enjoyable.

1.2 Problem Statement

Currently, 2D animation development is general. The aims of this animation are for people who love to watch animation. The animations this day also use a linear storyline. The most of the 2D animation nowadays that have on the market is merely a story. Therefore, the animation about "Jony-The Unfriendly River" was developed by combination of 2D animation and interactive games. This animation combines linear storyline with interactive puzzles. Besides that, this project was developed to give awareness to users that in life friends are very important.

1.3 Objectives

The main objectives of this short animation which are:

- To develop a short animation combines with interactive games.
- To construct an interactive 2D animation by combining linear 2D animation storyline with interactive puzzles.
- To give a moral value of friendship from the storyline about the 2D animation.

1.4 Scope

2D animation is merely production objects move in a two dimensional space. These objects differ from stills, like photos or logos to more complex objects, like 3D graphics. 2D animation were chooses to developing this project. This project is the combination of linear storyline and interactive puzzles. There are three puzzle activities needed to solve by users to continue watching next part of animation story. In this 2D animation, containing some aspects include voice, background music and subtitle. The duration of this 2D animation is about five minutes .This 2D animation is suitable for all gender and ages of audience but more specific to six until ten year's old children.

1.5 Project Significance

2D animation has a lot of attraction. This animation provides a lot of moral values to all viewers especially to the children. This 2D animation is suitable for all ages and gender of viewers and there is no terrorism or negative element in this story. Therefore, parents should not uneasiness and no need to make restriction on their children.

Besides, this project also helps promotion of 2D animation in media industry and adds more variety of animation in Malaysia. Most of the local company prefers to produce 2D animation than 3D animation because cost to produce 2D animation is much cheaper. Moreover, the implementation of 2D animation is simpler than developing 3D animation which takes time to produce.

The animation that was developed must have a moral values and good messages to show to the children. This project produces story about how important friendship in life. To get a good relationship with someone, people need to understand the definitions of friendship. Children who watch this story could try to create an idea to make themselves found true friends in their life. Mostly, the children more interest in cartoon or something that interact with them directly than a verbal story. To make sure they watch the story, the interactive story was developed. The combination of linear 2D animation storyline with interactive puzzle wills attentiveness more children to watch the story.

The storyline is same concept with verbal story, but some part need to be changed to make this story more interesting and gets more attention from viewers. This project is good for education, edutainment, entertainment and also for commercialization. The main purpose of this project is for educational, edutainment and entertainment, therefore the story provides a moral values and good messages to viewers.

1.6 Conclusion

As a conclusion, the development of this short animation hoped can give awareness to people about how important friend in life. The animation about “Jony-The Unfriendly River” was developed by combination of 2D animation and puzzles. This animation combines linear storyline with interactive games. The combination of linear 2D animation storyline with interactive games wills attentiveness more children to watch the story. Without friend, life will be lonely and unhappiness. To develop a good animation, the message and the objectives must be delivered well to the audience. It is very important so that audience can understand clearly about the value of friendship in life. To get a good relationship with someone, all of them need to understand the definitions of friendship.

CHAPTER II

LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction

The literature review is a complete summary of the relevant facts and information in published academic literature about the chosen field of survey subject. The component of literature is most scholarly writing. Literature is not a bibliography that can be describing briefly each article needed in the project. The aim of literature review is to focus on a particular topic and make a critical analysis of the connection between different works that belong to field of study. In this chapter, the research is related with animation. There are three basics animation which are cel animation, computer animation and stop motion animation.

Cel animation is a 2D animation. This animation is an outmoded form of animation used in the production of cartoons or animated movies where each frame of the scene is drawn by hand. A full-length feature film created using cel animation would often require a million or extra sketches to complete. A cel is a sheet of translucent cellulose acetate used as a medium for painting animation frames. Cel animation is really time consuming and requires absurd organization and consideration to feature. Early cartoons like The Flintstones used Cel animation. William Hana and Joseph Barbera created The Flintstones in 1960, it was one of the first animated sitcoms, and it ran until 1966.



Figure 2.1: Example of The Flintstones

(source: <http://www.youtube.com/watch?v=2s13X66BFd8>)

Other examples of Cel Animation include early Simpsons, Top Cat and Looney Tunes. Cel Animation was good because cheaper and made animation easier because the background does not need to redraw every frame.

Computer animation is a division of both computer graphics and animation technologies. The design of computer animation is about the moving pictures (animation) using computer technology. Computer animation is broken down into two categories. (i) Computer-generated animation where the animation is designed specially on the computer classification using animation and 3D graphics software, and (ii) computer-assisted animation where traditional animations are computerized.



Figure 2.2 : Example of Benny's Booty

(source: <http://www.youtube.com/watch?v=2AbMol4P3Mg>)

Stop motion animation is one of the newest areas of film-making today. Stop motion is an animation skill through which one can spring life in inanimate things and do the unusual. This animation works by shoot a single frame of an object, then moving the object slightly, and then shoot another frame. When the film tracks continuously in a film projector, or other video playback system, the deception of fluid motion is created and the objects seem to move by themselves. This is similar to the animation of cartoons, but using actual objects instead of drawings. Stop motion animation that are using clay are called clay animation or "clay-motion".

In Malaysia, 2D animation gets a lot of attention from the viewers. Unfortunately, the animation produced only linear animation. So, in order to commercialize 2D animation, a product with title "Jony-The Unfriendly River" will be developed. This product is the combination of linear 2D animation storyline with interactive games. This will makes the product more interesting and enjoyable to watch. The viewers will achieve the moral values from the storyline.



Figure2.3: Example of clay animation ‘Mio Mao’

(source: <http://www.youtube.com/watch?v=SWhX8pL5S0c>)

2.2 Domain

The domain of this project is creating an interactive 2D animation by combining linear 2D animation storyline with interactive puzzles. 2D animation is simply making objects move in a two dimensional space. These objects vary from stills, like photographs or logos to more complex objects, like 3D graphics. There are three puzzle activities needed to solve by users to continue watching next part of animation story. 2D animation also has a lot of fascination. This animation provides a lot of moral values to all viewers especially to the children. This 2D animation is suitable for all ages and gender of viewers and there is no terrorism or negative element in this story.

Currently, 2D animation development is general. Their aims are for people who love to watch animation. The animations this day also only use a linear storyline. The most of the 2D animation nowadays that have on the market is merely a story. Therefore, the animation about “Jony-The Unfriendly River” was developed by combination of 2D animation storyline and interactive puzzles. Besides that, this project was developed to give awareness to users that in life friends are very important.

The combination of a linear 2D animation storyline with interactive games makes this product more interactive. This make viewers interact with the each other and will attentiveness more children to watch the story. Children will try to solve the problem to make sure they can watch the story until finish. While watching the story, children need to pay attention to solve the problems.

2.3 Existing System

Nowadays, there is a lot of 2D animation that were developed. In this project, the most suitable existing animation to be compare with this product is ‘Dora the Explorer’ and ‘Hikayat Sang Kancil dan Buaya’. ‘Dora the Explorer’ is an animation requires the audience answer the question that Dora asks and Dora also will talk to the audience about everything that she see or thinking. Therefore, there are combination of linear and interactive animation. Meanwhile ‘Hikayat Sang Kancil dan Buaya is a linear story. It is not to interactive because it cannot interact with users.