2D ANIMATION: KANCIL DENGAN SERULING AJAIB

NOR HASMIDA BT ABDUL AZIZ

UNIVERSITI TEKNIKAL MALAYSIA MELAKA
BORANG PENGESAHAN STATUS TESIS*

JUDUL: 2D ANIMATION: KANCIL DENGAN SERULING AJAIB
SESJ PENGAJIAN: 2010/2011

Saya NOR HASMIDA BT ABDUL AZIZ

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

1. Tesis dan projek adalah hak milik 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
   TERHAD
   TIDAK TERHAD

(TMENULIS)
(TANDATANGAN PENYELIA)

Alamat tetap:
950 Kampung Dendang Timur,
16450 Keteri, Kota Bharu,
Kelantan.

Tarikh: 8/7/2011

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

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

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

Prof. Madya Dr. Sazilah Binti Salam
Jabatan Media Interaktif,
Fakulti Teknologi Maklumat dan
Komunikasi,
Universiti Teknikal Malaysia Melaka

Tarikh: 5/7/2011
2D ANIMATION: KANCIL DENGAN SERULING AJAIB

NOR HASMIDA BT ABDUL AZIZ

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

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
UNIVERSITI TEKNIKAL MALAYSIA MELAKA
2011
DECLARATION

I hereby declare that this project report entitled

2D ANIMATION: KANCIL DENGAN SERULING AJAIB

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

STUDENT:
(NOR HASMIDA BT ABDUL AZIZ)
Date: 8/1/2011

SUPERVISOR:
(Prof Madya Dr. SAZILAH BT SALAM)
Date: 8/1/2011
DEDICATION

To Allah SWT...

To my beloved prophet, Rasulullah SAW...

To my beloved parents, Abdul Aziz Bin Latif and Asmawati Bt Hassan, sisters and brother...

To my beloved friends....

and to my best supervisor Prof Madya Dr. Sazilah Bt Salam and my evaluator Pn. Aniza Bt Othman...
ACKNOWLEDGMENT

I would like to thank to ALLAH SWT because give me a chance to live in this world to fulfill my project. I also would like to thank to all people who give me the great idea during learning session at Universiti Teknikal Malaysia Melaka major in Media Interactive.

Besides, I would like to thank to those who give me a complete support during my project research and development. Thank you also to FTMK Dean, Professor Dr. Shahrin Bin. Sahib @ Sahibuddin and all the lectures and staff for his kindness to give me knowledge to understand the process development of my project especially to my best supervisor Prof Madya Dr.Sazilah Bt Salam who give me an enough support to fulfill this project. All the kindness and support will be appreciated.

Also, to my beloved parents, Abdul Aziz Bin Latif and Asmawati Bt Hassan, and siblings to give me a full support to accomplish this project. Last but not least, I would like to thank to all my beloved friends who help me to complete this project. All the memorable will be remain.
ABSTRACT

The purpose of this project is to develop a 2D animation entitled *Kancil dengan Seruling Ajaib*. This 2D animation is designed to deliver an educational and entertaining content through a folk story. The target audience is children aged 5 to 12 years old. It can be used as a device to deliver the moral values and to attract the children to be familiar with Malay folk stories. This folk story is about the cleverness of a mouse deer in cheating a tiger. The story begins with a tiger who wants to eat a mouse deer. But due to the cleverness of the mouse deer, it managed to cheat the tiger about the ownership of a 'seruling ajaib' by Raja Sulaiman. This 2D animation is developed to preserve and enhance existing Malay folk stories by applying special effects in 2D animation and integrated with live environment. The methodology that used in this 2D animation is multimedia production process. Details of the current system approach and problem analysis are explained in this thesis. From this animation, it can reduce the problem to understand the storyline of the story. The contribution of this animation is to preserving folk stories in new media integration of visual effects consisting of 2D animation and real images or video images. Hopefully this animation can give the awareness for children to appreciate the Malay folk story.
ABSTRAK

# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>SUBJECT</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DECLARATION</td>
<td>ii</td>
</tr>
<tr>
<td></td>
<td>DEDICATION</td>
<td>iii</td>
</tr>
<tr>
<td></td>
<td>ACKNOWLEDGMENT</td>
<td>iv</td>
</tr>
<tr>
<td></td>
<td>ABSTRACT</td>
<td>v</td>
</tr>
<tr>
<td></td>
<td>ABSTRAK</td>
<td>vi</td>
</tr>
<tr>
<td></td>
<td>TABLE OF CONTENTS</td>
<td>vii</td>
</tr>
<tr>
<td></td>
<td>LIST OF TABLES</td>
<td>xii</td>
</tr>
<tr>
<td></td>
<td>LIST OF FIGURES</td>
<td>xiii</td>
</tr>
<tr>
<td></td>
<td>LIST OF ABBREVIATIONS</td>
<td>xv</td>
</tr>
<tr>
<td></td>
<td>LIST OF APPENDIXES</td>
<td>xvi</td>
</tr>
<tr>
<td></td>
<td><strong>CHAPTER I</strong> INTRODUCTION</td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>Project Background</td>
<td>1</td>
</tr>
<tr>
<td>1.2</td>
<td>Problem Statement</td>
<td>2</td>
</tr>
<tr>
<td>1.3</td>
<td>Objectives</td>
<td>3</td>
</tr>
<tr>
<td>1.4</td>
<td>Scopes</td>
<td>3</td>
</tr>
<tr>
<td>1.5</td>
<td>Project Significance</td>
<td>4</td>
</tr>
<tr>
<td>1.6</td>
<td>Conclusion</td>
<td>5</td>
</tr>
</tbody>
</table>
CHAPTER II  LITERATURE REVIEW AND PROJECT METHODOLOGY

2.1 Introduction 6
2.2 Domain 7
  2.2.1 Computer Animation 8
  2.2.2 Character Design 8
  2.2.3 Character Animation 10
  2.2.4 Character Lip Sync 10
  2.3.5 Adding Special Effect 11
2.3 Existing System 12
  2.3.1 Comparison of Existing System 15
2.4 Project Methodology 16
  2.4.1 Preproduction 17
  2.4.2 Production 17
  2.4.3 Post-Production 17
2.5 Project Requirement 19
  2.5.1 Software Requirement 19
  2.5.2 Hardware Requirements 19
2.6 Conclusion 20

CHAPTER III  ANALYSIS

3.1 Introduction 21
3.2 Current Scenario Analysis 21
  3.2.1 2D Animation Silat Lagenda 22
  3.2.2 2D Animation Sang Kancil dan Buaya 22
  3.2.3 Space Jam 23
3.3 Requirement Analysis 24
  3.3.1 Project Requirement 24
    3.3.1.1 Requirement Gathering 25
    3.3.1.2 Project Specification 29
CHAPTER IV DESIGN

4.1 Introduction 40
4.2 Scene Sequence Diagram 41
4.3 Preliminary Design 51
  4.3.1 Storyboard Design 52
    4.3.1.1 Plan 54
    4.3.1.2 Script 55
  4.3.2 Character Profile 55
    4.3.2.1 Kancil 56
    4.3.2.2 Harimau 57
4.4 Conclusion 59

CHAPTER V IMPLEMENTATION

5.1 Introduction 61
5.2 Media Creation 61
  5.2.1 Production of Text 61
    5.2.1.1 Type of Text 62
    5.2.1.2 Font Selection and Text Sizing 63
  5.2.2 Production of Graphic 63
  5.2.3 Production of Audio 65
  5.2.3 Production of Video 65
  5.2.4 Production of Animation 67
CHAPTER VI TESTING AND EVALUATION

6.1 Introduction
6.2 Test Plan
   6.2.1 Test User
      6.2.1.1 Audience ages from 5 to 12 years old
      6.2.1.2 Person with animation development
   6.2.2 Test Environment
6.2.3 Test Schedule
6.2.4 Test Strategy
   6.2.4.1 Alpha Testing
   6.2.4.2 Beta Testing
   6.2.4.3 Acceptance Testing
6.3 Test Implementation
   6.3.1 Test Description
   6.3.2 Test Result and Analysis
6.3.3 Analysis Testing
6.4 Conclusion
CHAPTER VII  PROJECT CONCLUSION

7.1C Observation on Weakness and Strengths  94
7.2 Proposition for Improvement  95
7.3 Contribution  96
7.4 Conclusion  96

REFERENCES  97
BIBLIOGRAPHY  98
APPENDIXES
  A  Gantt Chart
  B  Questionnaires
  C  Storyboard
  D  Script
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Comparison between three existing system</td>
<td>16</td>
</tr>
<tr>
<td>2.2</td>
<td>Multimedia production processes</td>
<td>18</td>
</tr>
<tr>
<td>3.1</td>
<td>Flash stage size for different video formats</td>
<td>34</td>
</tr>
<tr>
<td>4.1</td>
<td>Description of scene and script</td>
<td>43</td>
</tr>
<tr>
<td>5.1</td>
<td>Difference between Sans Serif and Serif</td>
<td>62</td>
</tr>
<tr>
<td>5.2</td>
<td>Detail of configuration software</td>
<td>71</td>
</tr>
<tr>
<td>6.1</td>
<td>The hardware and software requirement for testing</td>
<td>80</td>
</tr>
<tr>
<td>6.2</td>
<td>Test Schedule</td>
<td>81</td>
</tr>
<tr>
<td>6.3</td>
<td>Level of rate for Alpha testing</td>
<td>82</td>
</tr>
<tr>
<td>6.4</td>
<td>Usability testing for Alpha testing</td>
<td>83</td>
</tr>
<tr>
<td>6.5</td>
<td>Acceptance testing for Alpha testing</td>
<td>85</td>
</tr>
<tr>
<td>6.6</td>
<td>Usability testing for Beta testing</td>
<td>86</td>
</tr>
<tr>
<td>6.7</td>
<td>Result of usability testing for alpha testing</td>
<td>89</td>
</tr>
<tr>
<td>6.9</td>
<td>Result of acceptance testing for alpha testing</td>
<td>90</td>
</tr>
</tbody>
</table>
## LIST OF FIGURES

<table>
<thead>
<tr>
<th>DIAGRAM</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>Drawing the character with basic shape and centerlines</td>
<td>8</td>
</tr>
<tr>
<td>2.2</td>
<td>Drawing the detail of character their legs and mouth</td>
<td>9</td>
</tr>
<tr>
<td>2.3</td>
<td>Clean up the character and finish the design</td>
<td>9</td>
</tr>
<tr>
<td>2.4</td>
<td>Types of mouth positions</td>
<td>11</td>
</tr>
<tr>
<td>2.5</td>
<td>Screen shot of <em>Silat Lagenda</em></td>
<td>13</td>
</tr>
<tr>
<td>2.6</td>
<td>Screen shot of <em>Sang Kancil dengan Buaya</em></td>
<td>14</td>
</tr>
<tr>
<td>2.7</td>
<td>Screen shot of Space Jam movie</td>
<td>15</td>
</tr>
<tr>
<td>3.1</td>
<td>Plot of <em>Silat Lagenda</em></td>
<td>22</td>
</tr>
<tr>
<td>3.2</td>
<td>Plot of <em>Sang Kancil dengan Buaya</em></td>
<td>23</td>
</tr>
<tr>
<td>3.3</td>
<td>Plot of Space Jam</td>
<td>24</td>
</tr>
<tr>
<td>3.4</td>
<td>Analysis of question 1</td>
<td>25</td>
</tr>
<tr>
<td>3.5</td>
<td>Analysis of question 2</td>
<td>26</td>
</tr>
<tr>
<td>3.6</td>
<td>Analysis of question 3</td>
<td>26</td>
</tr>
<tr>
<td>3.7</td>
<td>Analysis of question 4</td>
<td>27</td>
</tr>
<tr>
<td>3.8</td>
<td>Analysis of question 5</td>
<td>27</td>
</tr>
<tr>
<td>3.9</td>
<td>Analysis of question 6</td>
<td>28</td>
</tr>
<tr>
<td>3.10</td>
<td>Analysis of question 7</td>
<td>28</td>
</tr>
<tr>
<td>3.11</td>
<td>Storyline of “Kancil dengan seruling ajaib”</td>
<td>31</td>
</tr>
<tr>
<td>4.1</td>
<td>Storyboard Template</td>
<td>53</td>
</tr>
<tr>
<td>4.2</td>
<td>Plan template</td>
<td>55</td>
</tr>
</tbody>
</table>
4.3 Mouse deer front view 56
4.4 Mouse deer side view 56
4.5 Mouse deer back view 57
4.6 Tiger front view 58
4.7 Tiger side view 58
4.8 Tiger back view 59
5.1 Sample font Agent Orange 62
5.2 Sample font Berlin Sans FB 63
5.3 Example of bitmap and vector graphic 64
5.4 Flowchart Production of Graphic 64
5.5 Adobe Soundbooth workspace 65
5.6 Flowchart Production of Video 66
5.7 Flowchart Production of Animation 67
5.8 Example of adjust pitch and timing 68
5.9 Example of live action and animation combine 70
6.1 Result of usability test for question 1 87
6.2 Result of usability testing for beta testing 88
6.3 Graph bar of usability for alpha testing 89
6.4 Graph bar of acceptance testing for alpha testing 90
6.5 Analysis of usability testing 91
6.6 Analysis of acceptance testing 92
## LIST OF ABBREVIATIONS

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2D</td>
<td>2 Dimensional</td>
</tr>
<tr>
<td>.swf</td>
<td>Shockwave flash</td>
</tr>
<tr>
<td>.avi</td>
<td>Audio video interleave</td>
</tr>
<tr>
<td>fps</td>
<td>Frame rate per seconds</td>
</tr>
<tr>
<td>MPEG</td>
<td>Moving Picture Experts Group</td>
</tr>
<tr>
<td>JPEG</td>
<td>Joint Photographic Experts Group</td>
</tr>
<tr>
<td>TV</td>
<td>Television</td>
</tr>
<tr>
<td>3D</td>
<td>3 Dimensional</td>
</tr>
<tr>
<td>CD</td>
<td>Compact Disk</td>
</tr>
<tr>
<td>DVD</td>
<td>Digital Video Disk</td>
</tr>
<tr>
<td>CS4</td>
<td>Creative Suite 4</td>
</tr>
<tr>
<td>HDTV</td>
<td>High Definition of television</td>
</tr>
<tr>
<td>svg</td>
<td>Scalable Vector Graphics</td>
</tr>
<tr>
<td>emf</td>
<td>Enhanced metafile</td>
</tr>
<tr>
<td>cdr</td>
<td>CorelDraw</td>
</tr>
<tr>
<td>dxf</td>
<td>Drawing Interchange File</td>
</tr>
<tr>
<td>gif</td>
<td>Graphic Interchange Format</td>
</tr>
<tr>
<td>bmp</td>
<td>Bitmap</td>
</tr>
<tr>
<td>png</td>
<td>Portable Network Graphic</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>APPENDIX</th>
<th>TITLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Gantt Chart</td>
</tr>
<tr>
<td>B</td>
<td>Questionnaires</td>
</tr>
<tr>
<td>C</td>
<td>Storyboard</td>
</tr>
<tr>
<td>D</td>
<td>Script</td>
</tr>
</tbody>
</table>
CHAPTER I

INTRODUCTION

1.1 Project Background

The suggestion for this project which is 2D animated about folk story. The folk story that would like to develop which is "Kancil dengan Seruling Ajaib" this story has been chosen because to attracts the children to know this folk story. This is story about the cleverness of mouse deer to cheat the tiger. A story begin when a tiger who want to eat mouse deer. Meanwhile with the cleverness mouse deer cheat the tiger about the ownership of Seruling Ajaib by Raja Sulaiman.

Nowdays many of children do not know the folk story as well. With this 2D animation can deliver the moral value and message to audience and promote the Malay story. This animation will used a book style storyline as the concept and animation to make the difference from other it will be present like book. This animation is difference from other because it will present like book and with animated character.

The animation techniques that used to develop this 2D animation are frame by frame technique and also use motion tweening to animate the character. When developing the animation, the principle of 2D animation also can be applied in this 2D
animated is timing. It can apply the movement of the character tiger and the other technique like anticipation, follow through and overlapping action.

The uniqueness of my project is to bring out the folk story from comic to 2D animation. It is because Malaysian folk story does not have in cartoon and entertain in television. Recently, the children does not like read folk book, they want something new like cartoon and animation. Hence, the 2D animation has been chosen to develop a folk story. It also can make a user or children interested to watch it. Besides it can deliver a moral value message from a folk story. This 2D animation will also add some real element in 2D animation.

The Malaysian folk story is a way to teach children about good example and behavior that they can apply for their daily life to be a good person. Also, it can give the good guidance especially for the children who are watching this animation so that they can make the decision wisely in their life. In addition, it can promote our Malay culture or story more than the cartoon network.

The target user for this animation is especially school student who are curiosity to watch a cartoon. This animation also can be used by student in library and for kindergarten teacher to show this animation for their student.

1.2 Problem Statement

Most of the current folk story in Malaysia is delivered by using traditional book and also e-book. The plot of the story is presented by using the graphic and text. With the e-book, the user need to read the text and graphic did not animate for this situation.

This traditional comic book is only using static image and no apply animation technique in comic. This animation technique also can make user more understanding
and visualize the plot of the story clearly. Most in market just only have 2D animation and does not have the combination of real element in 2D animation.

At the end of this project it will preserve the Malay folk story to be memorizing for all the generation and not to be extinct by aged. It is because the story “Kancil dengan Seruling Ajaib” is one of the Malay folk story and good from their message and moral value. The existing folk book is not interesting to children compare to cartoon because cartoon has animation of character, sound, lighting and so on. The current book more look like traditional comic book it contain more word, image which may illustrate the text to affect the story. The current comic format just has in book only and not in digital format.

1.3 Objective

The objectives of the project are as listed below:

i. To design and develop Malay folk story which is “Kancil dengan Seruling Ajaib” in 2D animation.

ii. To apply special effect in 2D animation to integrate with live action or movie.

iii. To evaluate the preserveness of existing story by using new technology.

1.4 Scope

The target user for this project is the school children between 5 until 12 years old. The target is for children because who are interested to watch the cartoon it help to kids to love watch this 2D animation. The product will deliver by CD format and also can publish in television or standalone. The story which is “Kancil dengan Seruling
**Ajaib** will be delivering an animation with live action movie and sound of character. It can make the folk story interesting than standard comic book. The duration for this 2D animation “Kancil dengan Seruling Ajaib” is around 3-5 minutes. The language is used in this 2D animation is Malay language.

The modules that have to develop this 2D animated are storyline, design character, sound record and animate. The storyline stage is draft the storyboard and storyline of the folk story. Then for the design character is after doing the storyboard and trace into the flash. After that animate and match the sound for the character for the project.

1.5 Project significance

This project is important to improve the style of e-book of delivering the folk story of Malaysia other than story books. Hope that the animation is more attractive to children and people of all ages who want to watch this animation product. Beside that the good guidance in this story it best for the children who are watched this animation. For the parents this is important to teach their children about morality using this 2D animation where nowadays children mostly like to watch cartoons animation. This product can deliver for the children, parents and teacher to awaken the new generation to be lovely to watched folk story rather than cartoon network.

Mostly the folk story present by book or e-book, with this 2D animated it can improve from the delivery product like the technology using. It also to apply special effect in this 2D animation with integrates live action or movie. Before that it deliver by static image, then with this animated it picture can animate.
1.6 Conclusion

In conclusion, the effort to make this animation of "Kancil dengan Seruling Ajaib" can make interesting cartoon for the entire target user especially for the children. With improve from the book to be an animated come hoped that objective can achieve to make the folk story one of the popular cartoons.

For the next chapter, we will look into literature review and methodology of the project. There are also the introduction of the second chapter, facts and finding of the related topic to it, domain about the related system, existing system which is explanation and comparison about the current system with the new system will be develop, technique, the methodology used develop the project.
CHAPTER II

LITERATURE REVIEW & PROJECT METHODOLOGY

2.1 Introduction

The literature review and project methodology is the section that provides the information of project focus on during the project development. The literature review means that the researchers accredited their research on a related topic and publish. With this literature review, it can help the research process based on the related article that has done by the researchers. Literature review has many types such as a journal, article, paper cutting and others. Literature review also refers to searching, collecting, analyzing, and drawing conclusion from all debates issues raised in relevant of literature.

According to the research, process methodology is defined as “a body of practices, procedures and rules used by those who work in a discipline or engage in an inquiry”. Methodology also known as a set of procedures or methods that used for conduct the research. There are two types of the research methodology with are qualitative and quantitative. The qualitative data are interview, direct observations, survey, and analysis of documents and material. Multimedia production process methodology is used for this project.

In addition, the description of hardware and software use to build the project also will be explain in this chapter.