

COMIC 3D ANIMATION

“KAMPUS BOY”

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UNIVERSITI TEKNIKAL MALAYSIA MELAKA

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

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

DECLARATION

I hereby declare that this project report entitled
COMIC 3D ANIMATION “KAMPUS BOY”

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

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DEDICATION

To my beloved parents I dedicate this special thanks to both of you for giving me strength and supporting me since I'm in semester one. I also want to dedicate to my Final Year Project supervisor, En Ahmad Shaarizan Shaarani for the consultation, advices, comments and support during the PSM construction. Not forget to thanks to my lecturers who was teach me since semester one. Thank you En.Shahril Parumo, En. Haziq Lim, Miss Sera Hani Musa, Miss Syariffanor Hisham, Dr. Faaizah and En. Naim Che Pee.

Last but not least, thanks to all of my friends that were always be at my side helping and guide me during this construction.

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ABSTRACT

The 3D comic animation “Kampus Boy” was develop to attract comic readers to use as an alternative to enjoy of reading comic without going to bookstore and spend the money to buy comics. Furthermore, this project also gets a success achievement to create a character like Cikgu Lee, JayEss and Abregas. When this project creates all this character, the development of this project hope that audience from the different age can interest to watch this 3D comic animation and take moral values from the advice from Cikgu Lee.

The main objective for this animation is to develop 3D short comedy based on comic in ‘Lawak Kampus’ magazine, to test usability of the 3D comic produce comic into multimedia presentation for entertainment and to measure acceptance in terms of animation aspect. This project was developed using Autodesk Maya, Adobe Premier Pro and Adobe Audition 1.5. This report is written with the aim to ease the user’s understanding with the process in developing this multimedia product.

ABSTRAK

Komik 3D animasi "Kampus Boy" ini dibina untuk menarik perhatian pembaca komik supaya menggunakan alternatif ini sebagai satu medium hiburan ketika membaca komik tanpa perlu pergi ke kedai buku dan menghabiskan duit dengan membeli komik. Selain itu, projek ini telah mencapai kejayaan dengan menghasilkan karakter seperti Cikgu Lee, JayEss dan Abregas. Ketika projek ini menghasilkan kesemua karakter itu, pihak pembangun mengharapkan supaya penonton dari pelbagai peringkat umur dapat memberi perhatian untuk melihat komik 3D animasi ini dan mengambil nilai-nilai murni serta nasihat dari Cikgu Lee.

Objektif utama pembangunan komedi pendek dalam bentuk 3D animasi adalah berdasarkan dari komik di dalam majalah "Lawak Kampus", menguji kebolegunaan komik 3D ini untuk menghasilkan komik ke dalam bentuk persembahan multimedia dan mengukur penerimaan dari segi aspek animasi. Projek ini telah dibangun dengan menggunakan perisian Autodesk Maya, Adobe Premier Pro dan Adobe Audition 1.5. Tujuan report ini ditulis adalah untuk membantu pengguna memahami proses-proses semasa menghasilkan produk multimedia ini.

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CHAPTER I

INTRODUCTION

1.1 Project Background

Many people nowadays especially teenagers likes to read comics. In terms of 'comics' and 'comic strip' came from the strips of pictures being printed in magazines and newspaper with the funny story on that time. Kampus Boy is based on the 'Lawak Kampus' comic that was graphically sketch by Keith and Zelo. This comic is publishing by Gala Unggul Resources Sdn. Bhd. The first edition was issued in July 2004.

This comic used more than one language. The main language is Bahasa Melayu and at the same time it used English languages. This method is called 'Bahasa Melayu Rojak'. The term will be use throughout this report.

There are many character used in the original 'Lawak Kampus' comic but for the idea of this project, only three character will be include. The characters to this project are Guru Besar will be modifying as a Cikgu Lee, Vannes will be modifying as JayEss and Aditas will modify as Abregas.

1.2 Problem Statement

There are some factors why this project needs to be developed into 3D animation. As for readers, they are easy to get confuse of the flow in the comic strip because sometimes in the comic strip the arrangement of the comic panel were not arranged chronologically. Otherwise, the publication will update their issues in every month. So, the magazine or comic will be a lot for readers to keep and somehow they do not have enough space to store the comics and magazine. With this implementation, it may be able to help reduce papers.

3D animation film has developed by many productions since the market is growing larger. Current situation shows that 3D animation has high demands especially in film and broadcast field. In Malaysia, Upin & Ipin was popular among children when the animation was made in 3D animation. This will be a good approach to create a comic animation in 3D as a platform to deliver a message to the audience and it will be more attractive.

For the purpose of this project, there are some techniques of 3D animation that need to know. The 3D animation techniques are:

- **Morphing**

Morphing is the act of changing an object into another object. This technique is widely used to animate clothes, skin, face, and non-solid bodies.

- **Hierarchical Animation**

Hierarchical animation is a technique based on moving through an array of pivots in a hierarchical fashion and applying the basic operations of OpenGL.

- **Skeletal Animation**

Skeletal animation is also called skinning because it emulates the way the skin and muscles react to their attached bones. This technique is used in humanoids, birds, and most vertebrates.

1.3 Objective

The objective of this project:

- ✓ To develop 3D short comedy based on comic in 'Lawak Kampus' magazine.
- ✓ To test usability of the 3D comic produce comic into multimedia presentation for entertainment.
- ✓ To measure acceptance in terms of 3D animation aspect.

1.4 Scope

This project is to develop a 3D animation with the duration of 3 minutes. It will focus on the story that shows moral value and how importance of being moral. Target user of this project is for audience with different ages in such as to children and for adults. It is used for children to realize of the importance of moral values into oneself and so instilled these moral values in them. As for adults, it used to

highlight the importance of multimedia technology influence to nowadays young generation and utilize it to convey the message of morality.

With the duration in 3 minutes of 'Kampus Boy', the output will display in PAL video format for the broadcasting company. The screen aspect ratio is 16:9. The 3D animation has included character movement and a simple facial expression.

1.5 Project Significant

After the fulfillment of creating the 3D animation, it may give some benefits to audience especially the youth in general. This change will bring enlargement in Malaysia 3D animation. Perhaps it can help improve the economy in Malaysia.

Otherwise, it can use as alternative to users by broadcast 3D comic anywhere. As seen today, improvement of more advanced technologies that are capable of causing many people to own a computer at home and student have their own notebook. Otherwise, people can own Ipad in the market effortlessly.

1.6 Conclusions

The 3D comic animation that will develop would give a significant awareness to the youth especially for students in school. In addition, the caricature of 'Lawak Kampus' comic presented many moral values among students with current issues in Malaysia. Besides, by watching this animation with fun there's have a lot of pedagogy given from this 3D animation.

In this chapter will covered the project background, problem statement, project objective, project scope and project significant have been described.

CHAPTER II

LITERATURE REVIEW & PROJECT METHODOLOGY

2.1 Introduction

This chapter will describe about the literature review and project methodology of this project. A literature review is an evaluate report information found in the literature research to the related area of study. The review will describe, summarize, evaluate and describe the literature. This literature review will be done after the scope and the project had been determined to collect as much information about the project. The information such as methodology, tools, techniques and will be extracted from previous research, discussion with the supervisor, internet resources, journals and books.

Methodology is a way to apply all available approaches, techniques and tools used to achieve predetermined objectives. Many types of this can be approaches on multimedia methodology project such as the analysis, pre-production, production and post-production. Therefore the appropriate methodology project can help, manage and maintain the project development. This chapter also discuss about the project methodology which is to use all available approaches, techniques and tools to be used in achieving the predetermined objectives. In term of the project methodology the iterative listing of hardware and software specifications that will be used in developing this project will be explained.

2.2 Domain

After some study and finding process, the domain of this project is 3D animation. Animation is one of multimedia element and consists of two types of animation that is 2D animation and 3D animation.

Computer 3D animation is an evolution from 2D animation where it is more complex than 2D animation consists of construct the object at two axes which is x-axis and y-axis. The 2D animation will create an object and animation which has height and width. Differentiate between 2D and 3D animation, 3D animation create object from 3 dimensions that consist of x-axis, y-axis and z-axis where the object and animation has height, width and depth. These concepts make 3D animation become more realistic because it has a view form several angle. Otherwise, 3D animation is actually bring the 2D animation steps one forward with provide a realistic animation like an object in the real world.

3D computer graphics are different from 2D computer graphics because a three-dimensional representation of geometric data is stored in the computer for the purposes of performing calculations and rendering 2D images. Despite these differences, 3D computer graphics rely on many of the same algorithms as 2D computer vector graphics in the wire frame model and 2D computer raster graphics in the final rendered display. In computer graphics software, the distinction to achieve effects such as lighting and primarily 3D may use 2D rendering techniques.

Opposite to other media such as text and graphic which has static behavior, the animation brings a revolution on live aspect such as education, entertainment, engineering, training and other. Animation technology is used in teaching and learning. It is more attracting, increase the motivation to the audience and more dynamic. Animation technology that support a dynamic characteristic, colorful, more realistic and the content can attract the audience focus and interest.

Nowadays, entertainments on the animation are more popular and get more attention from audience especially from Malaysian society. This method are used spread and widen especially on movies, clip video and cartoon where it much interesting. Otherwise, the high definition and high quality of animation are difficult to recognize whether it is computerize technologies animation or it is a real world.

2.3 Existing System

The existing system is examine, references, case study and other result that related with the project. The related existing systems to this project are television series “Kacang”, 3D short story “A Malaysian Friday” and 3D short story “Geng Animation Test”. These related projects use the different techniques and concept to present the message.

- i. Kacang



Figure 2.1: Television Series Kacang

(Source:http://explore-malaysia.com.my/lensa/images/stories/projects/animation/Header_kacang.jpg)

Lensa Film Sdn. Bhd. is a dependable production company delivers animation series Kacang shown each Monday, at 7pm on TV1. This animation series has thirteen episodes that take two years to be completed and appropriate to all inspire to educate while amuse enjoy the animation series. Kacang apply a simple animation and simple techniques for their animation

The character's models also look simple where the conceptual based on the bean character which is without pair of hand and leg. While the Kacang not good as animation from west like Shrek and Rapunzel Tangled but Kacang is one of local animation that have a local story and accepted by Malaysian's viewers. The story contains various elements such as comedy, fun, friendship and moral values. According to Kacang official's website (<http://www.kacang.tv> 2007), morph technique had been used in Kacang series for facial expression and mouth movement. Morph technique is a process where the original object animates base on duplicate objects that has same topology. As for the development stages, Kacang used Autodesk 3D Studio Max 8, Adobe Premier Pro 7.0, Adobe Audition 2.0 and Adobe Photoshop CS2.

ii. A Malaysian Friday

A Malaysian Friday is a 3D animation short story, a fully 3D animated story created by Malaysian Animator, Tan Jin Ho. This story is about Malaysian Friday and it is have no dialogue to present the story.



Figure 2.2: Short 3D animation A Malaysian Friday

(Source: <http://www.pocketmovies.net/download/a-malaysian-friday>)

This animation used audio to present the environment at villages such as “azan” to show that the time for Friday’s Pray. It takes two minutes and thirty second of the animation. This animation story uses Autodesk Maya as main software for modeling character, animation and rendering. The animator used a good technique to present this animation. The animator using the realistic mapping technique like UV mapping where the developer will do research to help the model looks like and real. Source <http://www.amalaysianfriday.cjb.net>.

iii. Geng Animation Test



Figure 2.3: Geng Animation Test

(Source: http://www.metacafe.com/watch/261714/geng_animation_test/)

Les' Copaque Production Sdn. Bhd. is one of the local animation companies who was urbanized a 'Geng Pengembaraan Bermula'. Based on the site <http://www.lescopaque.com> (2007), this short animation is adaptation from 'Geng Pengembaraan Bermula' film which is successful display throughout cinema in Malaysia. The "Geng animation Test" is developing for short film festival and receive award as the best animated short film. This animation applies many advance techniques to animate this character. With the very smooth lip-sync and the real facial expression. Otherwise, the animator applies realistic mapping technique such as mapping for the leafage and water. The three point of light used to support present the 3D environment.

With the used of Autodesk Maya as main software, the animation complete with duration of two minutes and forty-six seconds.

2.3.1 Comparison of Existing System

Table 2.1: Comparison of Existing System

Comparison	Kacang	The Malaysian Friday	Geng Animation Test	Kampus Boy
Software	3Ds Max 8	Maya 8.0	Maya 8.5	Maya 2009
Lip Sync	Morph technique	Blend shape technique	Blend shape technique	-
Texture & Shading	Material	Material	Material	Material
Lighting & Rendering	Scan line	Mental Ray	Mental Ray	Mental Ray

Based on Table 2.3.1, *The Malaysian Friday* and *Geng Animation Test* are using blend shape technique method for lip sync which is the main technique for facial and lip-sync animation on Autodesk Maya, where *Kacang* using morph technique which is the main technique for facial and lip-sync animation on Autodesk 3Ds Max.

The other technique applicable to this project is Blend shape for lip-sync and morph model. Blend shape is a technique that provide in Autodesk Maya where the original object will transform into the duplicate objects that have same topology of the original object and count of polygon. It is important to keep the original object clean, history deleted, centered and with the pivot point located in its position. Meanwhile, morph technique is using the same parameters as blend shape technique but it has some problem compare to the blend shape which is the target of morphing cannot be deleting to ensure the morphing functioning. This can make the number of polygon can increase because of too many target. Differentiate on Maya for blend shape is the animator can delete the target of morphing and save the number of polygon.