

3D ANIMATION: MIMPI

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FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY

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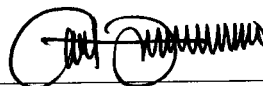
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Tarikh: 30/6/2010

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3D ANIMATION: MIMPI

MOHD NOR SHAFIQ BIN IDRIS

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**

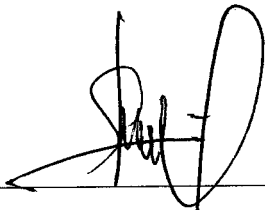
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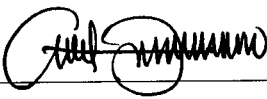
DECLARATION

I hereby declare that this project report entitled

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

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DEDICATION

Special dedicated to my beloved parents,

En.Idris Bin Sujak
Pn.Habibah Bt Jaafar

For my supervisor,
En.Shahril Bin Parumo

And lastly to my beloved friends who have encouraged, guided and inspired me throughout my journey in education.

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I would like to take this opportunity to thank my PSM supervisor, En.Shahril Bin Parumo, for assisting me to finish this PSM successfully and also providing the guideline, giving courage and advice throughout the development of the project.

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ABSTRACT

This project is about a story of 3D animation entitled “Mimpi” The storyline of this animation is about a boy called Aiman, who was dreaming in one evening and in his dream, he saw a strange mirror. At the mirror, he saw a preview of the environment of UTeM. Then something happened to Aiman and then he woke up from his sleep. This movie animation is an entertainment for all people especially children. This 3D animation movie has many attractive features including the characters, coloring, animation, audio and the storyline. Moreover, in this 3D animation movie, 3 point light method is used to make a character looks real and its special effect. In addition, occlusion technique is also used to show the effect of shape at some object. Hopefully this animation useful for all parties as source of reference.

ABSTRAK

Projek ini adalah berkenaan sebuah cerita animasi 3D bertajuk “Mimpi”. Jalan cerita animasi ini adalah tentang seorang budak bernama Aiman, dimana dia bermimpi pada satu petang dan di dalam mimpinya dia ternampak sebuah cermin yang agak pelik. Pada cermin itu, aiman melihat suasana persekitaran UTeM. Selepas itu terdapat satu perkara yang terjadi pada aiman dan aiman terus terjaga dari tidurnya dalam keadaan terkejut. Cerita animasi ini adalah untuk tontonan kepada semua golongan masyarakat terutamanya kanak-kanak. Cerita animasi 3D ini mempunyai banyak unsur yang menarik untuk ditonton seperti karektor, warna, animasi, bunyi dan jalan cerita. Tambahan pula, di dalam cerita animasi 3D ini, kaedah 3 titik pencahayaan digunakan kerana ia akan dapat menimbulkan kesan khas kepada model. Disamping itu juga, kaedah kesesakan juga digunakan untuk menunjukkan kesan bentuk kepada sesuatu objek. Di harapkan penyelidikan dan cerita animasi ini berguna kepada semua pihak sebagai bahan rujukan.

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LIST OF ABBREVIATIONS

DBP - Dewan Bahasa dan Pustaka

MP3 - MPEG Audio Layer III

PNG - Portable Network Graphics

MB – Binary Maya

PC - Personal Computer

RAM - Random-Access Memory

PSM - Projek Sarjana Muda

DVD-R - Digital Versatile Disc Recordable

CHAPTER I

INTRODUCTION

1.1 Project Background

Nowadays, most of the students are hesitate to study in UTeM and they need to do some surveys before choosing UTeM. This problem could be reduced if we can make a different in promoting the universities. The movie of “Mimpi” is a story about a kid who was day dreaming in the evening. In his dream, he watches UTeM campus in fantasy at mirror. After that, the kid excited and enjoyed to see a view of UTeM Campus, where he saw buildings, mosque, lake and other. Suddenly, one tragedy happened in his dream. With that tragedy, the kid awake from his sleep and fall from bed. This project is an entertainment project and it is also an introduction of UTeM in 3D animation movie using Maya Software for the duration of 3 minutes.

1.2 Problem Statement

In 3D animation development, the most critical problem is to create a good character which could attract user’s attention. The character being developed should suitable with the storyline and could bring the message of the story. The weaknesses in character design can cause the story difficult to understand and the message of the story will not be reached by end users. Today, 3D animation has become the most popular types of animation to create stories or simple animation movie. Besides that, animation in Malaysia less to use technique tools such as lighting technique, occlusion technique, shader technique and other.

In terms of the film industry, 3D animation becomes one of the most important parts especially for the story which involves science fictions. The limitations of action which can be done by human actor force the film director to hire a good animator to create an animation for certain characters in their movie. For examples, the character of dinosaur in Dinosaur movie and the character of a big snake (Anaconda) in Anaconda movie are created using 3D animation.

1.3 Objective

The Objectives of this project were as follows:

- a) To apply a 3 point lighting technique (Key Light, Fill Light and Back Light) in this 3D animation.
- b) Apply an Occlusion technique in this 3D animation.
- c) To promote and introduce people about UTeM through 3D animation story.

1.4 Scope

In developing this 3D animation there are some scopes that would like to be achieved. The scopes of this project are stated as below:

1.4.1 Audience

A *child* is a target user for this project is children aged below 13 years old. This is because children age is the most suitable age to learn about positive values and most of them like dreaming. Beside that, *adult* also a target user for this project is adult above 12 years old because in this movie we show Universiti Teknikal Malaysia Melaka for intriguing potential students to join UTeM. Besides that, they can take the entertainments for their life.

1.4.2 Lighting Technique

3 Point light is a main light technique, in this movie, we apply this light where it has 3 point light to use namely key light, fill light and back light. Among the reasons to use this technique is can give a feeling of happiness, sorrow, fear and each other. It also makes a movie so in dramatic or subtle ways.

1.4.3 Occlusion Technique

Occlusion is a second technique to make a live character. With combination this 2) technique can make a real character and can make a special effect of light can be seen in this movie animation. It also not a post-process effect, its complex 3D light calculations, and is for 3d rendering only and it's never used in real time.

1.5 Project Significance

This project is a 3D movie animation. The animation's title is "Mimpi" where it entertains people watching 3D animation besides promoting people especially children through 3D animation story. This 3D movie animation is very suitable in promoting UTeM locally or internationally. The advantages of this project are combination a 3D movie and the effect have we apply. It suitable for all entertains. Beside that, it can introduce UTeM to public especially for those potential students wish to study at UTeM. Besides that, they could see all buildings in UTeM as well as the other buildings in 3D animation's movie.

1.6 Conclusion

In chapter I, the objective and scope must be achieved to get a good 3D movie animation in this project. In the next chapter, it discussed ideas and research on stylized, as well as on what approach that will be used in the development of this project.

CHAPTER II

LITERATURE REVIEW & PROJECT METHODOLOGY

2.1 Introduction

This chapter will describe in details about the related review that have been written earlier to support the project title. Literature review refers to the study on collection of published materials in selected area of studies such as articles, journals, thesis, online library, technical documents and case studies. Literature review should give theoretical base for research and support the research topic through analysis, summarize, and evaluation of the literature. The literature review may vary according to the field of studies but their purposes are same.

Literature review is the review from a collection of published research related to a research question. All good research and writing are guided by review of the relevant literatures. An integral component of the scientific process, a literature review is the mechanism by which research is viewed as a cumulative process. The purpose of the literature review is an essential test of the research question already known about the subject.

Besides, it also explained the type and function of methodology that has used to develop the project. 'Methodology' is an etymology of the Latin words 'methodius' + 'logia' which means a body of practices, procedures, and rules used by those work in a discipline or engage in an inquiry; a set of working methods (The Free Dictionary By Farlex). Methodology is used to produce and achieve the objectives of the project. Finally, it will explain all the software and hardware that require in developing the project.

2.2 Domain

Animation is the rapid display of a sequence of images of 2D or 3D artwork or model positions in order to create an illusion of movement. In this project the domain is 3D animation where we type to do in animation. The first step is modeling is the act of creating a 3D mesh. Second, animation is the process of taking a 3D object and getting it to move. Third, texturing are necessary have in animation without some kind of texture art, everything will be variations of solid colors. Rendering is typically the last step, and is perhaps the most important part. It's often overlooked by beginners, who are more focused on creating models and animating them.

2.2.1 Project Description

In this project, we focus and apply on lighting technique. Lighting is the art of reproducing the characteristics of the subject by the correct application of light and shade. It is necessary to have light to produce an effect on the sensitive plate. In this project, we apply a lighting technique to improve an animation because in movie animation, if created great and good intensity lighting, it can make a greatest movie animation. Lighting in 3D animation, it have three-point lighting. Three-point lighting is a very common lighting technique used in cinematography and photography. Three-point lighting is a very flexible technique and it can be used to illuminate the subject in an attractive way.

2.2.2 Dreaming (mimpi)

Dreams are a communication of body, mind and spirit in a symbolic communicative environmental state of being. It also a succession of thoughts, images, sounds or emotions which the mind experiences during sleep. The content and purpose of dreams are not fully understood, though they have been a topic of speculation and interest throughout recorded history. The scientific study of dreams is known as oneirology.

2.2.3 Basic Three Point Lighting

Commonly, three point lighting can be used to add mood and drama to a shot, but its overriding function is to describe 3D objects onto a 2D area. But sometimes, the light is used to "model" the objects so that on a flat surface we can tell what shape they are, and how one object relates to another. This process is much like that in a real world movie making.

The 3D animation software provides different types of lights which it can place in the scene in any direction and it can be adjust the intensity, cone angle or even the shadow cast by the individual lights. In Three point lighting, it have Key light is a main light, Fill light is to fill in the shadows and lastly, Back light/Rim light is to separate the subject from the background. The position of three points of lighting is also very important in 3D animation because if the lighting position was wrong, it can make a bad result of lighting. According to George Avgerakis says, when beginning to light the scene is to assign the Key Light to 50% of the light that will fall on the object, the Fill Light to 30% and the Back Light to 20%, as show in figure 2.1

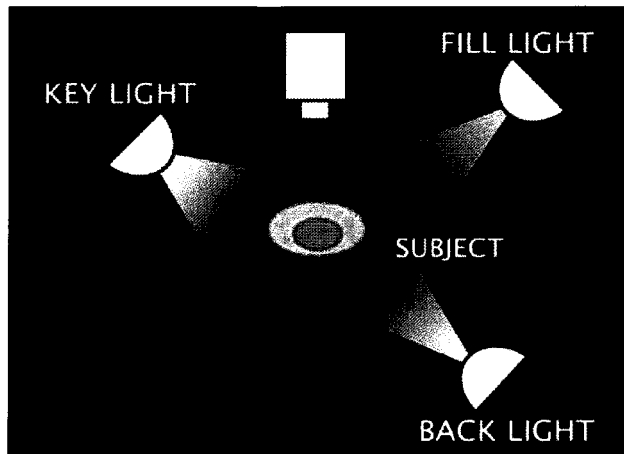


Figure 2.1: Viewer of 3 Point Lighting

Source: <http://www.desktop-documentaries.com/images/3-way-lighting-diagram2.jpg>