

TESIS^ APPROVAL STATUS FORM

JUDUL: 3D Action-Comedy Animation

SESI PENGAJIAN: 2004 / 2005

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^ Tesis dimaksudkan sebagai Laporan Projek Sarjana Muda (PSM)

3D Action-Comedy Animation

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This report is submitted in partial fulfillment of the requirements for the
Bachelor of Information and Communication Technology (Interactive Media)

FACULTY OF INFORMATION AND COMMUNICATION TECHNOLOGY
KOLEJ UNIVERSITI TEKNIKAL KEBANGSAAN MALAYSIA

2004


ADMISSION

I admitted that this project title name of


INTELLIGENT CONSULTATION SYSTEM

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DEDICATION

This project is a special dedication to my beloved parent, as they had put so much efforts on supporting me on my studies. What they have gave are precious and i am really appreciate it. As the completion of this project, thanks for their patience and love towards me that really encourages me. I have been away from home for a period of times because of the project. I really appreciate them for their kindness and understanding for me.

Secondly, i would like to give my appreciation to Miss Rusnida Romli for being my supportive supervisor. She gave me a lots of guidance and directions from the beginning of the project planning until the completion of the project. Encouragements and supports are greatly given by her as a supervisor to ensures that i can complete this project in proper. I am very thankful to have Miss Rusnida as my guide and light to my path to complete this project.

ACKNOWLEDGEMENT

The completion of this Projek Sarjana Muda (PSM) is successfully done as a result of the contribution of many parties. Here I would like to express my greatest gratitude to those who had helped me, directly or indirectly, in accomplishing this report.

First of all, I would like to appreciate Miss Rusnida Romli, my supervisor of the PSM I. She had helped me without ceasing in guiding me through the documentation needs and also updates me about the information on this. She had shown me plenty of skills and knowledge in how to develop an online application. With her advice, comments and guidance, I am able to accomplish the report within the given time.

Last but not least I wish to thank all my colleagues from KUTKM and also others that may not have been mentioned here. Without any of these supports, I would not have completed my training program successfully.

ABSTRACT

Now we can see more and more people are trying to implement 3D technique into the movie industry. It starts from the world first fully 3D animated cartoon Toy Story, from there started a trend for implementing 3D animations into the movie industry. In Malaysia market, there's lack of local produce cartoon animation. We can see 90% of the cartoon and cartoon animated series now in TV is from Europe country. This is because of the lack of expertise in this field to create a quality and interesting cartoon animation. The first thing is to attack local TV market by producing Malaysia made cartoon. The animation will base on an action and comedy animation, the length of the animation is around 10 minutes. The 3D cartoon will be base on the storyboard and script that will be plan later. The character design will be using 3D software like 3D StudioMax and adding some other software to help me completing the animation like SoundForge, etc. By creating cartoon animation, hopefully this can give others the first step to walk into the cartoon industry and compete with other giant industry e.g. Walt Disney, Pixel, etc.

ABSTRAK

Dalam filem industri sekarang banyak teknologi 3D animasi digunakan dalam pembinaan wayang. Seperti animasi 3D yang pertama di dunia “Toy Story”, disini bermulanya kemasukkan animasi 3D dalam filem industri. Walaupun bermulanya era baru ini, Malaysia masih belum mengimplementasikan teknologi ini dalam filem industri. Apa yang dapat dilihat sekarang ialah 90% daripada cartoon 3D sekarang dihasilkan oleh negara barat. Ini adalah kerana Malaysia masih kurang tenaga pakar dalam bidang ini. Objektif projek ini adalah untuk membuat satu animasi 3D, panjang animasi ini lebih kurang 20 minit animasi ini berkaitan dengan kartun aksi dan lucu. Kartun 3D ini akan dibina berdasarkan storyboard yang telah dirancang dengan menggunakan applikasi 3D, 3D StudioMax dengan kombinasi applikasi yang lain seperti SoundForge dan lain lain. Dengan pembinaan projek ini, sekurang-kurangnya membuat satu langkah yang pertama untuk mengaplikasikan animasi 3D.

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CHAPTER I

PROJECT INTRODUCTION

1.1 Overview

This project is about creating a cartoon animation using 3D models and using 3D environment. The choice of using 3D to create the cartoon animation is because the popularity of people likes to watch 3D animated cartoon.

This project will cover some 10-20 minutes of action and comedy, which will cast by a few characters that will be design and model using 3D software. Beside 3D software some other combination software will be use in the video editing and sound creation part of the animation.

The objective of using 3D for the animation cartoon is because of the character and environment is easier to manipulate, the character don't have to redraw in every scene. Beside that creating 3D animation can introduce new things into Malaysia movie industry. It also shows that Malaysia also have the manpower and skill to create a 3D animation.

Before creating the animation there's planning and design that have to be done first. For building this project Waterfall model will be use as a guide for finishing and improving the quality of the output.

1.2 Problem Statement

Creating a 3D animation require to create new model that isn't in the market now. This project will use 3DStudioMax to create all the models of the character, buildings, furniture etc. All the model use will be created by designer using the designer idea.

1.3 Objective

The objective of creating a 3D animation is to promote local made cartoon into film industry. There're a lot of opportunities in this film industry for cartoon film, hopefully doing this 3D animation will take a closer step to creating Malaysia own first 3D cartoon film in the cinema.

We can see that the cartoon world is very easy to manipulate compare to the real life; the objective of creating a cartoon animation is because the animation uses little manpower to create. In the animation we only needed people to design the animation and narrator to record the voice.

Contribute some thing new into local cartoon industry, the film and animation before produce by local artist is popular among Malaysian people. Maybe by changing the concept of movie making using 3D animation, this can help improving the movie industry.

1.4 Scopes

The length of the cartoon animation will be 20 to 30 minutes long. In this animation 3D character will be use as the main actor, beside form that narrator will be needed to record the sound of the virtual actors.

The story of the 3D cartoon animation will base on the story of an action film, because people like to watch action film and the 3D cartoon animation is very easy to manipulate and create the effect that people can't do in real life. Beside that some comedy is implemented inside the animation to make the animation more interesting and funny.

All the character in this 3D animation a cartoon based will be design. This will make the animation funnier and the animation will be easier to make. A cartoon base animation have more flexibility compare to real life character design. Because of the comedy action concept in this animation, designing a cartoon character is most suitable for the movie.

To help creating the 3D animations 3DStudioMax will be use to model the character and create the environment for the animation. Beside that Abobe Primier will be use for the editing video and combining the audio with the video. Some other software like Abobe Photoshop and Paint will be use to create the texture needed for the character and environment design. For the audio Fruity Loops a freeware will be use to make the soundtrack and some audio effect. For the audio editing part, Sound Forge 5 will be suitable.

1.5 Contributions

The significant of doing this project is to show Malaysia also have these kinds of manpower and skill. Showing them that we are capable of creating interesting story line and good graphics. Maybe one day creating a Malaysian made 3D film with these skilled people.

Beside that, doing this project can encourage the growth of 3D animation. Showing that a person can create an interesting story and then creating the story using

3D software for the modeling and the animation part. Hopefully this can encourage more people to join into the arena of a 3D world.

The real important thing in creating this project is entertaining people. Creating an animation that can astound people and making them sense the joy of watching movie.

Beside entertainment, developing this project can help people realize some thing that has potential market value in film industry. It is all about creating some big 3D film that can be shown not in Malaysia alone but all over the world.

1.6 Expected Output

In the final stage of the animation a full-length of 10 minutes 3D animation will be produce. The animation will include a running video and background music and sound effect entertain viewer. The action of the animation will thrill the viewer and the comedy will let the viewer laugh.

The animation will be play using a PC running with Windows XP operating system and using Window Media player to play it. The Window Media player will install Divx CODEC into it.

CHAPTER II

LITERITURE REVIEW

2.1. Introduction

A good system development practice should have a methodologies based on the continuous systematic activity. Choosing a suitable methodology for the system is important because it can optimise the time and cost for development process. For this project, the Waterfall methodology will be use as a guide and for implement for the entire development process.

An early stage of project planning is crucial and every phase of the development process should be planned. Planning is establishing a predetermined course of action within a forecasted environment, while the project planning is the function of selecting the objectives of the project and establishing the policies, procedures, and programs necessary for achieving them.

There are a few things that need to be focused on during project research. The things that need to be focused are the project objective. The purposes of developing the project must be clear and according to the requirements. Then, the scopes of the project need to be considered as well during project research.

Besides, time frame is the main priority in any project development. The time frame will give an overview of the time needed and the time of completion for every each of the tasks or development phases.

2.2. Fact and Finding

A few cases will be review base on their work as a guideline to build the project. These are the tops in this animation field of work.

2.2.1. Toy Story Review

Walt Disney Feature Animation will make film history this fall when it releases the first full-length, all-digital movie; the first animation created entirely by artists using 3D computer graphics tools. The movie, *Toy Story*, produced and created by Pixar Animation Studios (Pt. Richmond, CA) and directed by Pixar's Academy-Award-winning John Pixar, stars Tom Hanks as the voice of Woody, a pull-string cowboy doll, and Tim Allen as the voice of Buzz Lightyear, a space-ranger toy, with music by Grammy-Award-winning Randy Newman.

Toy Story will be Disney's big Christmas movie for 1995, the key player for Disney's Thanksgiving and Christmas season. All the indicators point toward the movie being a huge success. Already, the well-oiled Disney marketing machine is in motion: On the walls of a conference room at Pixar are designs for "*Toy Story*" shoes, chocolate bars with "fun movie scenes on every bar," "happy take-out meal" cartons, and of course, toys. Trailers for *Toy Story* are in theaters with *Pocahontas*, and in video stores with some copies of the live-action *Jungle Book*. And Pixar is already working on its CD-ROM version of *Toy Story*, using the same characters animated by the same animators who did the movie.

Pixar president (1995) said, "For a long time, we said to ourselves, 'this is our first film, don't expect too much,' ". "We'd hoped secretly that we'd do really well, but we were modest so we wouldn't get let down. Then we started showing it to people. We got glowing praise. And that took the lid off our expectations. We haven't heard from the reviewers yet, but we feel like we've got something special."

2.2.1.1 Toy Story Development Methodology

It's different from other feature animations because of the use of 3D tools, and it's different from other 3D animations because of its depth and breadth. Toy Story has a full cast of characters--humans, toys, and at least one dog--a total of about 76 in all, many with speaking parts. The characters move about in a wide variety of sets and locations just as actors might in a live-action movie. They're indoors, outdoors, at home, in cars; we see them at noon, at night, in a rainstorm, under neon lights. In all, Toy Story has about 1700 shots, and each shot has been modeled, animated, texture-mapped, shaded, lighted with a combination of proprietary and off-the-shelf computer graphics tools (running primarily on Silicon Graphics workstations), and rendered on rack after rack of Sun SPARCstation 20s--87 dual-processor and 30 quad-processor SPARCstation's (294 processors in all) running 24 hours a day in a special room aptly named the "Sunfarm." It's just frame-by-frame animation, but Pixar has, somehow, imbued it with life.

The length of the movie and its two-year-plus schedule have given Pixar's remarkable creative team at Pixar and Pixar's brilliant computer graphics scientists room to stretch, to show what they can do given more than a 3-minute space to work in. The 110 people now working on the film (including 28 animators and 30 technical directors) have created a world of humans and living toys that's realistic in the way a children's book is realistic, believable in the way a good movie is believable. Andy's room looks like a kid's room, not a drawing of a kid's room. There are laundry baskets filled with stuff. The bed bounces when Woody jumps on it. There are pictures on the walls and trees outside the window and books on the bookshelf and scuffmarks on the doorjamb.

Toy Story has a richness and level of detail never before seen in a long-format 3D animation. It will set a new standard for 3D animation, as did Pixar's "Pixar designer." before it. "I'm not an optimistic person by nature, but I'm very proud of this," says Pixar, Shader technical director, who has been part of the Pixar team since the LucasFilm days.

For many people at Pixar, Toy Story represents the attainment of a goal they've worked toward, as a team, for well over a decade. "We could have gotten sidetracked," says Pixar, "but through all the years we stuck to our goal, to make a feature-length film. And Steve [Jobs] was willing to fund us while we kept advancing the state of the art." Along the way, they collected numerous technical and artistic awards, including an Academy Award for the short animation "Tin Toy."

"In choosing the [Toy Story] story, we were interested in evolving from 'Tin Toy'," says Pixar, "in exploring further the concept that toys are alive. That basic concept didn't change, but almost every other aspect did."

2.2.1.2 Toy Story Storyboarding

When you talk to people at Pixar and Disney about Toy Story, they quickly point out that no amount of technology will make up for a less-than-stellar story. Pixar (1995) said, "I think people don't understand the importance of storyboarding, if the storyline works and is entertaining, when it goes into animation it will get better. But if it doesn't work in story reel [the filmed storyboards], it isn't gonna work in final."

In fact, the group stopped production on the movie for two months to get the story right, to make the toys adult without being too harsh, to make the relationships among the characters richer. Pixar had help from Disney in getting the story right and in learning how to work on large-scale projects--notably, from Pixar and Tom Schumacher, vice president of development. And by all accounts, the story, basically a buddy picture,

is right. Pixar(1995) said, "At the end of the day, people will not review the technology, and they'll review the quality of the story, the animation, how much people laugh. John [Pixar] has a great eye."

2.2.1.3 Toy Story Technology Used

Basically, the movie's 366-plus objects (Andy's bed, the minivan, Andy himself, Andy's sister's tea set, etc.) were modeled with Alias software (Toronto) or with Pixar's own procedural modeling environment, MenV (although the dog Scud was digitized from a clay model). MenV, now in its fourth generation, was originally built for Pixar by technical directors Eben Ostby and Bill Reeves (Reeves accepted the Academy Award for "Tin Toy" with Pixar). Pixar(1995) said. "I continue to be astonished that it's held up, We've been pounding on it for close to 10 years."

Details Today, eight weeks from their completion date in August, Ostby is using MenV to work on a five-block area of Andy's neighborhood. The sequence has already been animated, but the backgrounds aren't quite done. Pixar (1995) said, "We set up the neighborhood shot by shot, if the camera is close to a lot, the lot is 3D. If the camera's further away, we use a simpler representation. " Each lot in the neighborhood has its own house, with driveway, landscaping, cars, telephone poles, etc. The detail, for close-ups, is astonishing. To create the asphalt for the street, for example, Pixar scientist Loren Pixarmerged several photographs of gravel and sand in such a way that the texture looks random enough to be real. Pixar1995) said, "We used a combination of techniques, it's semimagic." Among them, the merging of color space coordinates using noise functions to perturb the coordinates so they wouldn't be coincident, and a scaling of the texture that changes as the pictures "swim downstream."

For characters, the modelers used Alias software and patch-editing tools in MenV--Alias for characters like Buzz that have a "manufactured" look, MenV for more organic models, like Woody and the humans. With every location, every stage set, every prop, every character in the movie needing to be modeled, the creative team