



SATHYABAMA

INSTITUTE OF SCIENCE AND TECHNOLOGY
(DEEMED TO BE UNIVERSITY)

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3D CAR GRAPHIC (ANIMATION USING CSS WITH HTML AND JAVA SCRIPT)

Submitted in partial fulfillment of the requirements for
the award of
Bachelor of Science degree in Computer Science

by

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Anitha stella .F.R (39290008.)



**DEPARTMENT OF COMPUTER SCIENCE
SCHOOL OF COMPUTING**

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MARCH - 2022



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BONAFIDE CERTIFICATE

This is to certify that this Project Report is the bonafide work of **S.AMMU PREETHI (39290007)** **ANITHA STELLA.F.R (39290008)** who carried out the project entitled **"3D CAR GRAPHIC (ANIMATION USING CSS WITH HTML AND JAVA SCRIPT)"** under my supervision from **MARCH to APRIL.**

Internal Guide

(Name in capital letters with signature)

Dr.MAHESHWERI,

Head of the Department

Submitted for Viva voce Examination held on _____

Internal Examiner

External Examiner

DECLARATION

I **AMMU PREETHI.S (39290007)** and **ANITHA STELLA.F.R (39290008)** hereby declare that the Project Report entitled “**3D CAR GRAPHIC (ANIMATION USING CSS WITH HTML AND JAVA SCRIPT)**” done by me under the guidance of Dr/Ms.**MAHESHWERI** is submitted in partial fulfillment of the requirements for the award of Bachelor of Science degree in computer science.

DATE:

PLACE:

SIGNATURE OF THE CANDIDATE

ACKNOWLEDGEMENT

I am pleased to acknowledge my sincere thanks to **Board of Management** of **SATHYABAMA** for their kind encouragement in doing this project and for completing it successfully. I am grateful to them.

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I would like to express my sincere and deep sense of gratitude to my Project Guide Dr./Mr./Ms _____ for his valuable guidance, suggestions and constant encouragement paved way for the successful completion of my project work.

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ABSTRACT

3D ANIMATION MOVING CAR (CSS WITH HTML AND JAVASCRIPT)

The project being developed is a short mini project in 3D (3-Dimensional) animation. This report has been prepared to the “3D car in graphics using CSS with HTML and java script. This document is the final report of the findings and recommendations of the computer graphics for ||| year | part. Computer graphics remain one of the most exciting and rapidly growing computer fields. Computer graphics has now become a common element in user interfaces, data visualization, television commercial, motion pictures, and many-many other application. With the advantages of graphics modern subject, we can be able to design different applications can also be design different applications can also be designed using graphics. Such as games, photo effects etc. Many people have contributed to this project in variety of ways. We are trying to apply the graphics applications on designing a car moving in road. It will display give the road, car, traffic signals.

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CHAPTER 1

INTRODUCTION

1.1. INTRODUCTION

At the early age of animation, it was done by hand and all of the frames in animation had to be drawn on a piece of paper. A tremendous amount of work is essential even to develop shortest animated films. There are couple of different techniques were developed for creating animated by hand such as Cel animation , key frames, and Roto scoping technique.

However, the development of computer technology has driven the new era in animation in which where it is today. Since the invention of software which enable an animator to developed 2D (2-Dimensional) animation to the invention of software which enable an animator to develop 3D (3-Dimensional) animation, the area of animation have been developed and it is used in many area of industry today .

Talking about 3D animation, people will imagine the movement of realistic character which is as same as in the real life. The development of 3D animation today, makes the 3D elements useful in multiple aspects. In example, 3D is used for the purpose of advertisement on television, film production, video clip production and also games industry. The most popular one of the usage of 3D is in the film production

Nowadays, 3D character is used to performed action in many films which cannot be reached or done by human character. This is especially for the animal character, fictions science character and many more. There are two kinds of 3D film, the first one is in cartoon character and the second one is in real character. For example is king kong, lord of the ring, and Dinosaur which use the 3D character that look like it is real. The examples of 3D animation using cartoon character such as shrink, over the hedge, toy story and ant bully.

Computer has become a powerful tools for the rapid and economical production of pictures. Computer graphics remains one the most exciting and rapidly growing fields. Chinese saying “one picture is worth of thousand words” can be modified in this computer era into “one picture is worth of many kilobytes of data” It is natural to expect that graphical communication will often be more convenient when computers are utilized for this purpose. Many people for different domain of applications use interactive graphics.

So far understanding the depth of this subject and for gaining sound knowledge in this field we had an attempted to the first step on this current field. We tried to make a graphically designed a moving car in road. The graphic designed a moving car, road, building, wheel are made with the application of graphic codes. This project applied the subject and made the graphics with the image and video editing.

1.2 OBJECTIVES

In developing this 3D animation there are some objective that would like to be achieved. It is hopefully that the list of objects for this project will help to achieve the goals of the project. The main objectives of this project are

- To implement the features of graphics
- To interface the applications of graphics to the real world
- To give some benefits to the disability
- To make the life easier
- To become familiarization with graphics and its logical coding

1.3 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 story line and could bring the message of the story. The weaknesses in character design can cause the story will not be understandable and of the story will not be reached by end users.

2D animation looks flat and the movement of characters looks unrealistic .In terms of the film industry, 3D animation becomes one of the most important parts especially for the story which involves science fictions.

CHAPTER 2

LITERATURE REVIEW

AUTHOR: A .Joseph dial

YEAR OF PUBLICATION: 22 NOV 2021

DESCRIPTIONS: The blackest Disney movie of all time!' A goofy movie and the production of &

PROS: The film has continued to capture the hearts and minds of a cult audience of passionate fans. Among this array of fans is a core of black millenials who hold the film in high regard due to its R & B soundtrack and relatable narrative.

CONS: The moments of black representation within the film are less interesting than how a black reading becomes possible

AUTHOR: Amy Skjerseth

YEAR OF PUBLICATION: 25 DEC 2019

DESCRIPTIONS: Grains of sound: visual and sonic textures in sand or peter

PROS: Their collective improvisation with sands and sound reveals new way to think about artist material practices and the friction and interplay between images and sounds

CONS: But sounds do not only mimic images they add textures and emotions that change what we see. Marketing feminism in youth media: A study of Disney and pixar animation

AUTHOR: K. Schiele, Louie

YEAR OF PUBLICATION: 5 MAY 2020

DESCRIPTIONS: Marketing feminism in youth media: A study of Disney and pixar animation

PROS: This study offers a blueprint that could help businesses develop feminist messaging in marketing communication. Through a thematic analysis of 17 disney and pixar animation films produced between 1989 and 2018 and featuring a female lead

CONS: For the companies that do it, integrating feminist messages in a way that does not alienate mainstream consumers might prove challenging.

AUTHOR: Eric daniel, Patrick

YEAR OF PUBLICATION: 21 MAR 2019

DESCRIPTIONS: Computer assisted animation of line and paint in disney paper man

PROS: System which allows animations to combine cg animations strengths temporal.

CONS: But its application is extensible to other styles of animation as well.

2.2 HISTORY OF ANIMATION

Animation did not happen instantly. Many people contributed to make animation on what it is today, and make computer animation at all possible. From using the moving images which consist of many sketches of scene drawn on a paper, then developing techniques for creating animation using computer, the field of animations have developed to what it is today.

Animation is the technique of moving characters by combination of frame of picture following the sequence of its movements. The word “animation” comes from a Japanese words “anime” which means breathe, wind, air and alive. The development of animation is driven by the invention of electronic devices which can present the animation to the audience. Dr. Joseph Antonie Plateau and Dr. Simon Ritter constructed a machine called a phenakistoscope which produced an illusion of movement by allowing a viewer to gaze at a rotating disk containing small windows, behind which was another disk containing the sequence of images.

2.3 TECHNIQUE APPLIED IN ANIMATION

Since the early age of animation until today, there are many techniques have been applied to make animation. Generally, types of animation techniques can be classes into two categories which is traditional animation and computer animation.

2.3.1 TRADITIONAL ANIMATION

The traditional animation consists of many techniques. The most popular are cel animation and rotoscoping. Before the use of cel animation the entire frame, including the background and all characters and items, were drawn on a single sheet of paper, and then photographed. Everything had to be redrawn for each frame containing movements.

The second popular methods of traditional animation is Rotoscoping. It was invented by Max Fleischer in 1915. In this technique animation is “traced” over actual film footage of actors and

scenery. Most of the popular cartoons use the Rotoscoping technique such as in snow white and the seven dwarf and sleeping beauty.

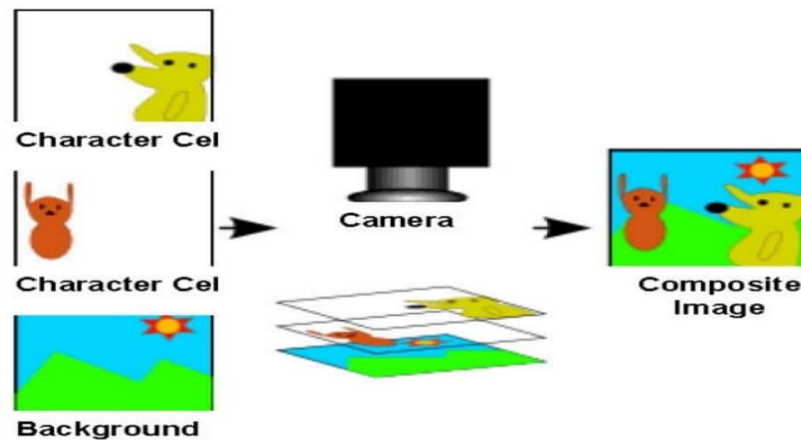


Figure 2.1: The cel animation. how two transparent cels, each with a different character drawn On them, and an opaque background are photographed together to form the composition image.

2.3.2 COMPUTERS ANIMATION

As times goes by, the invention of computer in late 1940 has change the way animation being created. After computer again comes, the animation designer move to animation studio, where there the outline drawings scanned into the computer and filled with digital paint instead colored by hand like in cell animation.

This involved the movement from 2D to 3D.computer animation involves modeling, motion generation, followed by the addition of surfaces, and finally rendering.

2.4 2DANIMATION

The 2D is the early styles in animation before the development of 3D animation. The concept of 2D animation is arranging pictures or images in sequence following its movements order. This called frame by frame oriented or picture by picture. In developing 2D animation, animator or developer needs to draw the same character in multiple movements on pieces of paper. After that, the papers contain movement of image will be move quickly to make the

characters look alive. In this style, the patience of animator is very essential to draw thousands of movement for a character in a film.

Nowadays, with computer technology, 2D animation software becomes a bit easy to be done. Animator just needs to master 2D animation software to create the animation. However, the movements of character in 2D animation look flat and sometimes not attractive.

2.5 EVOLUTION TO 3D ANIMATION

The 3D animation from the usage of 2D animation. 3D animation became popular due to the weaknesses of 2D animation and desire of animator and developer to create animation that looks like in reality.

3D animation is a process where characters or objects are created as moving images. Rather than traditional flat or 2D characters, these 3D animation images give the impression of being able to move around characters and observe them from all angles, just like real life.

Today, the 3D elements have been combined with the real image. The application of blue screen usage makes actor can perform with cartoon character through editing process. This can be seen in “Looney Tunes” film and many more.

2.6 DIFFERENCES OF 2D ANIMATION AND 3D ANIMATION

The difference between 2D and 3D animation can be seen in image design, character movements, background, coloring, styles and many more.

In term of images, 3D animation look like realistic and attractive than 2D animation which the image look flat. In 3D animation the character is designed to be look alive so that it can attract the end user attention. As being stated before the development of computer graphics image create a new technique in animation the CGI technique help animator to create great animation movements rather than using the manual technique.

In term of background and stage development, 3D animation can be matched with the real background. Since the character look like realistic, so there is no problem to combine

3D animation with a realistic background. This can not be done to 2D animation where animator forced to draw the background of every scene in a story.

In term of coloring styles, the 3D animation use many tones of color that makes it look more attractive in realistic. This is not goes to 2D animation.

2.7 3D ANIMATION IN FILM INDUSTRY

Looking at the development of 3D animation, it is undeniably that it is one of the important elements in film industry. 3D animation bring the way movie presented to end user to a level where users can experience the things which they imagine in fantasy into reality

3D animation in film industry can be classes into two categories. The first category is a 3D animation film in which all the character and stage fully uses 3D models. This category is very difficult to be created because animator needs to design every stage and character and it will take time in producing a film. Besides, the character and stage in this category will look like cartoon and the 3D elements just can be seen in the movement of characters. Most of the animation film in this category usually uses animal character such as in the hoodwinked, the wild, toy story, and over the hedge movie. However, there also some of the animation films in this category use human character such as in final fantasy, where the characters, models and stage look like about to realistic.



FIGURE 2.2: 3D animation models (human and animal character)



I.

FIGURE 2.3: 3D animation models (animal character)



FIGURE 2.4: 3D animation models (human character)

The second category is combination of 3D character or models with realistic scene or even with true actor. For the category the 3D models being uses look like in real life to make it is matched with realistic world. A good technique of modeling and coloring is essential in this category to create models that look like in realistic. Most of the movie use this category is the movie which related to fiction science story, history, and movie with character which can not be performed by human character. The example of film use this category such as king kong, Namia, and harry potter



FIGURE 2.5: Film uses the combination of real character
With 3D character in category 2

Even there are many films in 3D animation in the market today, most of the movie focus on comedy

story, wars, hostility, and heroism rather than 3D animation movie that conveyed full story which have moral value. However, there are some 3D animation movies which bring moral value to the end user.

2.8 STORYLINE DEFINITION

In animation, the function of a story is to tell and express about a things or events that occurred throughout the animations whether in physically, mentally or spiritually and change every time. For example,

- a) Things which is required and achieved.
- b) Decisions which being made.
- c) A journey to be accomplished.
- d) The solutions for a problem.

2.9CONCLUSION

It has show how animation has begun in the early day of animation. it also discussed about 2D and 3D animation briefly and some example of 2D and 3D animation films.

The development from 2D to 3D animation is driven by the invention of many programs such as maya and 3D max. these programs made creating 3D character and 3D animated projects possible. With the popularity of movies like toy story and shriek, the genre of 3D animated films has established its place in 21st century culture.

CHAPTER 3

ANALYSIS

3.1 INTRODUCTION

The development of a projects needs some requirements to make the project perform better and achieves the goals of the projects. In developing 3D animation, the capabilities of computer and hardware plays a big impact of the animation quality.

3.2 REQUIREMENTS

To ensure this project implemented effectively, we did our project using the CSS with HTML and we also use the java script. By using the software we can create the animation. However, in developing 3D animation, there are also some other software being used to edit graphics, sound and to make simple animation.

This is due to the restriction such as high cost is required to buy the hardware with maximum capabilities. Software also is the most important thing in the animation development. There are few of the 3D animation software sold in the market today. It comes with many capabilities to help user or animator to create 3D animator. However, in developing 3D animation, there are also some other software being used to edit graphic and to make simple animation.

3.3 MODULE

In this project, we are going to implement a car running on a track using HTML and CSS with sound effects. The prerequisites of this project are HTML, CSS, and JavaScript.

3.3.1 FILE STRUCTURE

- Index.html
- Style.css
- Script.js

3.3.2 HTML CODE

We have placed the sky div in such a way that it covers the whole webpage. After that, the building (city), track, car are put over the sky and finally, the wheels are fitted in the car so that they can rotate, and we can create an animation for a running car. we have added the styles using the file stule.css and applied the sound effects from script.js.

CHAPTER 4

IMPLEMENTATION

4.1 INTRODUCTION.

In the multimedia process development, implementation phase comes after design. It is a critical part in the 3D animation development because here animator will create the real character and model which already sketched in the design phase. In the implementation process of this 3d animation it involves there important phases that is preproduction, production and post-production.

4.2 MODELING

In 3d animation development, modeling processes were divided processes were divided into three types that is modeling the character, modeling the environment and modeling the objects. All of the modeling process in this project.

4.2.1 CHARACTER MODELING

CAR, WHEEL: we have positioned the car and its wheels to their desired positions first and then made the wheels rotate by applying proper animation to it as given in the code above.

4.2.2 ENVIRONMENTAL MODELING

SKY: We have placed the sky such that it covers the full viewport by assigning it 100vh, 100% and we have set the position to relative

TRACK: we have positioned the track to the bottom of the webpage, and we repeated the track in the x-direction such as it always remain visible in the animation. we have also assigned a very large width (500%) to the track for the same purpose. Now, the animation applied to the track moves the track in the backward direction such that it appears that the car is moving.

CITY: we have positioned the city such that it occupies the bottom of the web page by using the position absolute property.



FIGURE 4.1: *The background, city, and track (Environmental modeling)*



FIGURE 4.2: *The car and the wheel (object modeling)*

CHAPTER 5

TESTING AND EVALUATION

5.1 INTRODUCTION

Testing and evaluation is important in any application development. Testing being done to ensure that the system created actually behaves as the expectation of developer and meets user requirements . This is the basic role of evaluation. Testing and evaluation should not be thought of as a single phase in the design process, but it is the thing that should be done in each phases of design process.

Besides, testing is important to identify the problem and weaknesses of the 3D animation being developed so that some action can be taken to overcome the problems.

5.2 TESTING BEFORE THE DEVELOPMENT OF THE PROJECT

This kind of testing is to assess and test the hardware and software that is used in the project development. It is very important to be conducted because both elements will ensure the success of the final products.

5.3 TESTING DURING THE DEVELOPMENT OF THE PROJECT

Testing and evaluation during development involves the testing on the scenes that created by the developer. This is to ensure the final video of each scene is properly working and relevant to our topic.



FIGURE 5.1 *The sky (Full webpage)*



FIGURE 5.2 *After inserting track*



FIGURE 5.3 *After inserting the track and the city*



FIGURE 5.4 *After inserting the car without wheel*



FIGURE 5.5 After inserting the wheel but not in the position



FIGURE 5.6 The full animation (the track, sky, city, car, and the wheels)

5.4 SOURCE CODE

Index.html

```
<html>

<head>

  <title>Running Car Animation - Easy Tutorials</title>

  <link rel="stylesheet" href="style.css">

</head>

<body>

  <div class="hero">

    <div class="highway"></div>

    <div class="city"></div>
```

```
<div class="car">
  
</div>

<div class="wheel">
  
  
</div>
```

Style.html

```
*
{
  margin: 0;
  padding: 0;
}

.hero
{
  height: 100vh;
  width: 100%;
  background-image:url(sky.jpg);
  background-size: cover;
  background-position: center;
  position: relative;
  overflow-x: hidden;
}

.highway
{
```

```
height: 200px;
width: 500%;
display: block;
background-image: url(road.jpg);
position: absolute;
bottom: 0;
left: 0;
right: 0;
z-index: 1;
background-repeat: repeat-x;
animation: highway 5s linear infinite;
}
```

```
@keyframes highway
```

```
{
  100%{
    transform: translateX(-3400px);
  }
}
```

```
.city
```

```
{
  height: 250px;
  width: 500%;
  background-image: url(city.png);
  position: absolute;
  bottom: 200px;
  left: 0;
```

```

display: block;

z-index: 1;

background-repeat: repeat-x;

animation: city 20s linear infinite;
}

@keyframes city
{
    100%{
        transform: translateX(-1400px);
    }
}

.car
{
    width: 400px;

    left: 50%;

    bottom: 100px;

    transform: translateX(-50%);

    position: absolute;

    z-index: 2;
}

.car img
{
    width: 100%;

    animation: car 1s linear infinite;
}

@keyframes car

```

```

{
  100%{
    transform: translateY(-1px);
  }
  50%{
    transform: translateY(-1px);
  }
  0%{
    transform: translateY(-1px);
  }
}

.wheel
{
  left: 50%;
  bottom: 178px;
  transform: translateX(-50%);
  position: absolute;
  z-index: 2;
}

.wheel img
{
  width: 72px;
  height: 72px;
  animation: wheel 1s linear infinite;
}

.back-wheel

```

```

{
  left: -165px;
  position: absolute;
}
.front-wheel
{
  left: 80px;
  position: absolute;
}
@keyframes wheel
{
  100%{
    transform: rotate(360deg);
  }
}

```

5.5 OUTPUT:



CHAPTER 6

CONCLUSION

6.1 INTRODUCTION

After each phases of the 3d animation development have been passed and it is looking forward to see this project can complete soon without facing any problems. It becomes big hopes of developer that this project could fulfill the early objective of this project and running.

6.2 PROJECT CONSTRAINTS

Multimedia covered large area of computer graphics field. When talking about multimedia the first thing come is design. However, in creating the multimedia application such as 2D animation or 3D animation, design is the critical part that test animator abilities. The success of the design means the success of the project. People will be attracted to the nice design and also the nice design of the character. This project is one of the sample projects on computer graphics. As well as we are more hopeful for more advance new ideas and inspiration to make more other projects. Had tried are best to include each and every basic features of graphic in our project.

6.3 RECOMMENDATION FOR THE FUTURE DEVELOPMENT

Here, developer likes to give some suggestion for the future development for 3D animation project. For the future students who will develop 3D and 2D animation, it is recommended to them to prepared earlier and learn on how to use the 3D and 2D software they plan to use before their project.

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Learning.