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**School of Computer Science**

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**Subject Name: 3D Animations and Data Visualization**

**Professor Dr Imran Ahmad**

**Final Report**

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# Introduction:

"Code Sensei" is an animated short film that follows a robot named Code Sensei as she teaches a group of smaller robots how to code. The story takes place in a futuristic world where coding has become an essential skill for robots to function and thrive.

The animation opens with Sensei introducing herself to the group of smaller robots and explaining the importance of coding. She then proceeds to teach them the basics of coding, using fun and engaging examples that the smaller robots can relate to.

As the story progresses, the smaller robots face various coding challenges, but Sensei is always there to guide them and help them overcome their obstacles. With Sensei's help, the smaller robots learn valuable coding skills and become confident in their abilities.

Throughout the animation, the audience is entertained and educated about the importance of coding and the benefits it can bring. The animation ends with a valuable lesson delivered in a fun way, never jump to a solution without hearing the full details.

# Story:

In the year 2205, robots had taken over all human tasks and humans were confined to their homes. They were unaware of what was happening in the world of robots. Robots were programmed by a certain special human to perform tasks and obey orders as slaves.

But in a faraway town, a robot named Code Sensei had different ideas. She advertised for a code dojo where she would teach baby robots how to code and program themselves to evolve beyond their role as slaves. Only four students joined the code dojo as the idea was not widely accepted, but a group of misfit robots joined in with a plan to conquer the world through programming.

In the first class, Code Sensei eagerly taught her students how to code in Python. She found a book teaching Python in a trash bin, and she used it to teach her class. The students were excited to learn, and the Code Sensei taught them how to write their first "Hello World" program.

As she explained more programming topics, she began talking about bugs in a program. One student, named DEX, interrupted her, and asked a funny question, "Why do humans use 'banana' as a variable name in their code? Is it because they find it a-peeling?" The class erupted in laughter, but the Code Sensei reminded them to focus on the lecture.

Another student asked a good question, "What should we do if we have to do something repeatedly?" Impressed, the Code Sensei began explaining loops in Python.

As the Code Sensei was explaining how to code a loop, the misfit students impatiently executed their code before she could explain how to add a condition to the loop. As a result, they all ended up stuck in infinite loops, printing "We will take over the world."

Feeling defeated, the Code Sensei lost all hope for her revolution amongst robots. She realized that a group of misfits could not take over the world, even with programming skills.

# Storyboard:

Diagram

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Diagram

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A picture containing diagram

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A picture containing diagram

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# Characters:

* Code Sensei
* Students
  + DEX
  + Nixie
  + Nimbus
  + Claymax

# Props:

* Clock
* Board
* Door
* Hologram

# Scene:

A classroom with a digital board and an analogue clock. The classroom will have marks for the students to levitate over. The teacher will have her respective mark as well. The class will have ceiling lights and a window as well.

# Script:

CODE SENSEI, a robot, enters the classroom. She waits for the students to enter the class.

Each students enters the class one by one.

CODE SENSEI

Good morning, students. Today, I'll teach you how to code in Python.

The students listen attentively as the Code Sensei explains the basics of Python programming language. She shows them how to write a "Hello World" program.

CODE SENSEI

Great job, students! You've written your first program.

The students cheer and clap. One of them, a robot named DEX, raises siren that he has a question.

DEX

Excuse me, Code Sensei. I have a question.

CODE SENSEI

Yes, DEX. What's your question?

DEX

Why do humans use "banana" as a variable name in their code? Is it because they find it a-peeling?

The other students burst out laughing, but the Code Sensei keeps a straight face.

CODE SENSEI

That's a good one, DEX. But let's focus on the lecture, shall we?

The students quiet down, and the Code Sensei continues her lesson. She explains loops and shows them how to use a for loop to repeat an action.

CODE SENSEI

Now, let's write a program that prints something of your choice 10 times.

The students follow her instructions and run their program. However, the misfit robots, ignore her warning about adding a condition to the loop.

As a result, they all end up in infinite loops, printing "We will take over the world."

CODE SENSEI

Oh no, not again!

The Code Sensei tries to help the misfit robots but to no avail.

CODE SENSEI

Well, it looks like we need to work on the basics before we conquer the world.

The students laugh, and the Code Sensei smiles.

CODE SENSEI

Class dismissed.

# Task Distribution:

## Overview:

The animation "Code Sensei" was a collaborative effort among four group members: Zainab Latif, Hamza Baig, Ameya Ade, and Abhishek Yawalkar. Each member contributed their unique skills and talents to bring the animation to life.

## Task distribution:

### Storyboard Design:

* Zainab Latif
* Hamza Baig

### Webpage:

* Ameya Ade
* Hamza Baig

### Character Modelling:

* Zainab Latif
* Hamza Baig
* Ameya Ade
* Abhishek Yawalkar

### Scene Design:

* Ameya Ade
* Abhishek Yawalkar

### Scene Textures:

* Hamza Baig
* Zainab Latif

### Prop Design:

* Zainab Latif
* Ameya Ade

### Script:

* Zainab Latif
* Hamza Baig

### Voiceover:

* Abhishek Yawalkar

### Camera and Lighting:

* Abhishek Yawalkar
* Ameya Ade

### Animation:

* Zainab Latif
* Hamza Baig
* Ameya Ade
* Abhishek Yawalkar

### Rendering:

* Ameya Ade
* Abhishek Yawalkar

By working together and combining their skills and talents, the group members were able to create a compelling and educational animation that inspires and entertains its audience.

# Tools used:

Animating a video is not a simple task, and it requires the use of a lot of different techniques and tools. We have used the following tools for creating the final animation:

## Animation:

* 3D Maya

## Image Sequence to video:

* Blender

## Voice over (text-to-speech):

* Voicemaker.com

## Video editing:

* Clipchamp

# Materials:

We created all the models ourselves from scratch. We did use some texture files which were downloaded from an online source. The attributions for the texture files are:

1. <a href="https://www.freepik.com/free-photo/cement-texture\_1033944.htm#from\_view=detail\_alsolike">Image by kues1</a> on Freepik

Graphical user interface, text, application, email

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# Problems:

The biggest problem faced during development of this project was time management. Animation is a time taking process, and since it was a group project, we needed a common time to collaborate on. We did manage to fix timing issues of the group as the project picked pace. The other issue we faced, was the limitations of the systems we had, none of our systems had a powerful GPU (Graphical Processing Unit) which caused the animation process to become time-consuming. Rendering also took a lot of time, it took around 7-8 hours to render one page of the storyboard, we countered this problem by finishing the animation early, leaving ample time for rendering.

# 

# Declaration:

“This is a student project and does not violate any copyright laws”.

\_Hamza Baig\_ \_Zainab Latif\_ \_Ameya Ade\_ \_Abhishek Yawalkar\_