

Assignment 2

*Instructor : Avinash Sharma**Released: 2nd April 2021*

1 Problem

Web graphics library, more popularly known as WebGL is a JavaScript library for rendering 2D and 3D graphics within any web browser. The previous assignment dealt with OpenGL. And now, following on the same concepts of OpenGL, you will be using WebGL to design an interactive game. The requirements mentioned are minimal so please be creative and add interesting features. The game will be inspired from the game **Sky Force**.

For this assignment, you will be required to create a simplified version of the above game. Also, you will be required to create a trailer for your game in the form of a short video.

2 Tasks

1. Plane: This is the object that we control in the game. We should be able to move the plane forwards, backwards, left and right.
2. Missiles: Assign a key to shoot missiles from your plane that can be used to destroy enemies.
3. Stars: Collecting stars will increase your score.
4. Enemies: You can be creative on how to display enemies.
5. HUD(Heads Up Display): The screen should contain the following
 - (a) Health - This indicates the player's points.
 - (b) Score - This can be defined by you.

3 Trailer

Make a trailer about the game you have designed. The length should be about 1-2 min.

It should be cinematic, and should have a story which relates to what happens in the game. The trailer should contain all 3D models that you are going to use in your game.

4 Technical details

- You are highly encouraged to use blender to create all assets (eg. Plane, Missiles, Star etc.) in this game.
- For the trailer, again, you are encouraged to use blender or Unity or Unreal engine. Try to make it artistic and grand, with cool effects. For example, see this video made for graphics 2017 course: <https://www.youtube.com/watch?v=uvIc8-xf4HQ>.
- You may use any video editing software for the trailer.

5 Bonus

1. Enemy: Create enemies that move constantly so that it is difficult for the player to attack them easily.
2. Enemy Missiles: Create missiles for enemies that attack the player at regular intervals.
3. Aesthetics of the game.

6 Marking Scheme

1. Main Tasks: 50
 - (a) Plane: 15
 - (b) Missiles: 10
 - (c) Stars: 5
 - (d) Enemies: 15
 - (e) HUD: 5
2. Trailer: 50
3. Bonus: 20
 - (a) Enemy Movement: 5
 - (b) Enemy Missiles: 5
 - (c) Aesthetics: 10

7 Instructions

1. Please write well-commented code in JS, and make sure to submit your own work.
2. Name the directory after your roll number and submit a zip file $\langle RollNo \rangle .zip$