

FLY SAFE - A Video Game

Game Design Document

Project Name: Capstone Project of Microverse in Javascript

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Game Description

In this game, the player is required to navigate a plane in the sky. He faces obstacles like flying birds and needs to maneuver the plane avoiding those obstacles. He goes on scoring as long as he flies safely avoiding the birds. If he hits a bird then he would incur a penalty of 20 points for each hit and that would be reduced from the score he gained. The score he gains when he reaches the other end of the screen, is his maximum score that is calculated by deducting the penalty points.

Game Play

The PC (Playable Character) moves in a 2D (two dimensional) plane, flying in the sky that extends from the left to the right of the screen. Birds appear along the way and the player must avoid them to move along.

Game Physics

Physics in the game work as such:

- PCs move in a 2D side scrolling plane, either from left to right, or from right to left.
- PCs can jump straight up and down
- PCs can cross paths with enemy characters unless it is hit by an attack, which pushes it back.

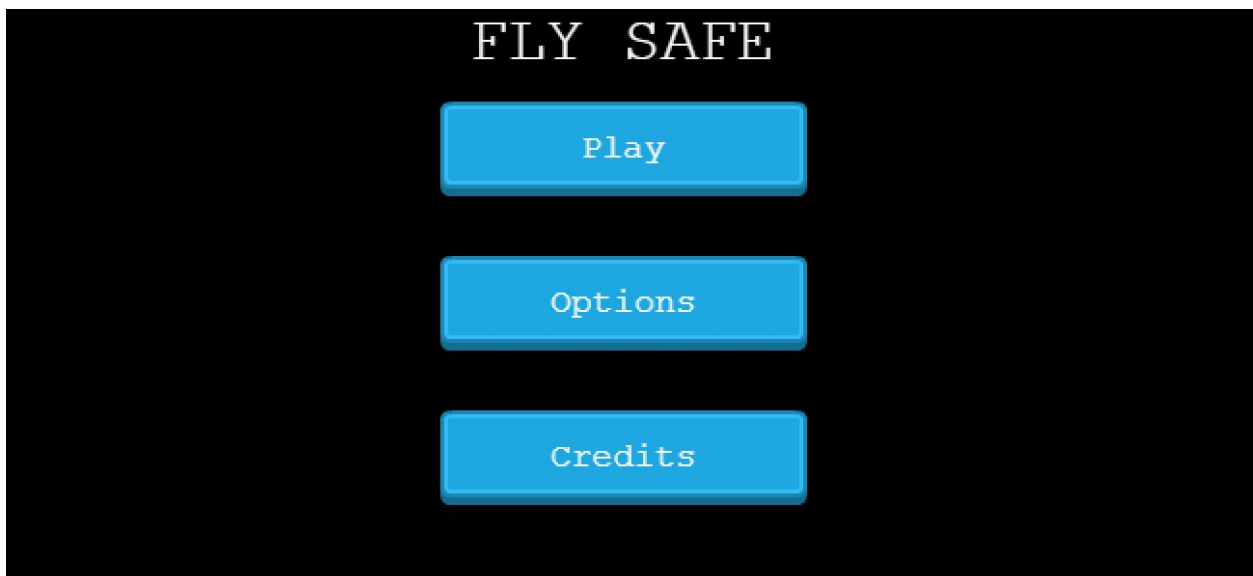
Git Repo

This Game can be downloaded from <https://github.com/IBTechRaj/flySafe>

IBTechRaj Player score display added		Latest commit 3b69765 13 hours ago
assets	Added plane sound and bird scream	yesterday
build	Player score display added	13 hours ago
src	Player score display added	13 hours ago
webpack	Phaser-3 project template setup	2 days ago
.babelrc	Phaser-3 project template setup	2 days ago
.gitignore	Phaser-3 project template setup	2 days ago
LICENSE	Phaser-3 project template setup	2 days ago
README.md	first commit	2 days ago
index.html	Added background, plane and birds and refactored the code	2 days ago
package-lock.json	Added background, plane and birds and refactored the code	2 days ago
package.json	Added background, plane and birds and refactored the code	2 days ago
webpack.config.js	Added background, plane and birds and refactored the code	2 days ago
README.md		

Screens :

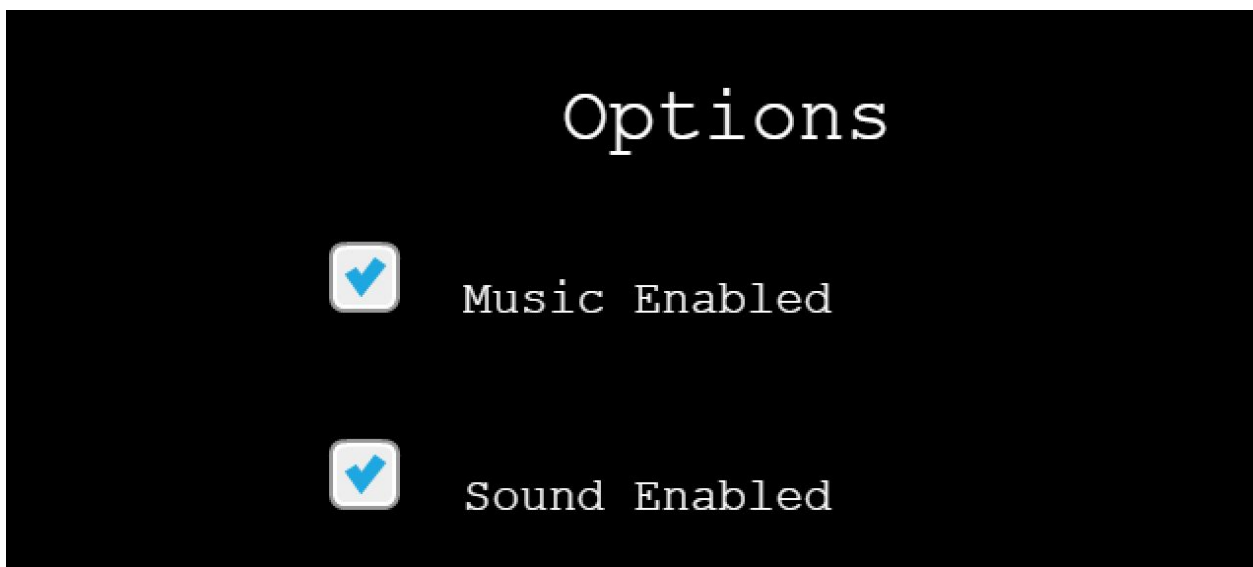
Opening Screen



Game in progress :



Options :



Sound and Music

Overall Goal

The goal of the music and sound within the game is to provide plane flying experience and also to sense hitting a bird with the sound of bird scream.

Technical Specifications

Game Mechanics

Game engine

I have used a game engine to develop our game called Phaser 3 developed by Photon Storm Limited. A game engine is a system designed to develop games for various platforms like consoles, computers and handheld devices like smartphones.

Platform and OS

Phaser provides desktop and mobile HTML 5 game framework for canvas and WebGL powered browser games.

External Code

As mentioned earlier I used Phaser 3 Game Engine to develop the game. Besides the game engine I used Visual Studio Code Editor adding Javascript classes and methods. This is a 2D sprite solution, which provides the functionality of creating sprite atlases from a number of sprites. After the atlas has been created the sprites can be combined as an animation to be used in the game.

Code Objects

Player Object: The player object is biplane used to navigate the sky.

Obstacle objects

Obstacle objects come in the form of flying birds

Camera Object:

The camera Object is an orthographic camera that exists throughout the game. .

Button Objects:

The game has 3 game button objects, that appear when the main screen of the game is opened. These are - Play - to start the game, Options - to activate or deactivate sound and music and Credits - that displays the credits for this game.

Further there are: Left button, Right button, Up button and Down button. All these objects are linked to the buttonManager script on the camera object.