

Multimedia Systems Project

SPACE INVADERS

Group-14

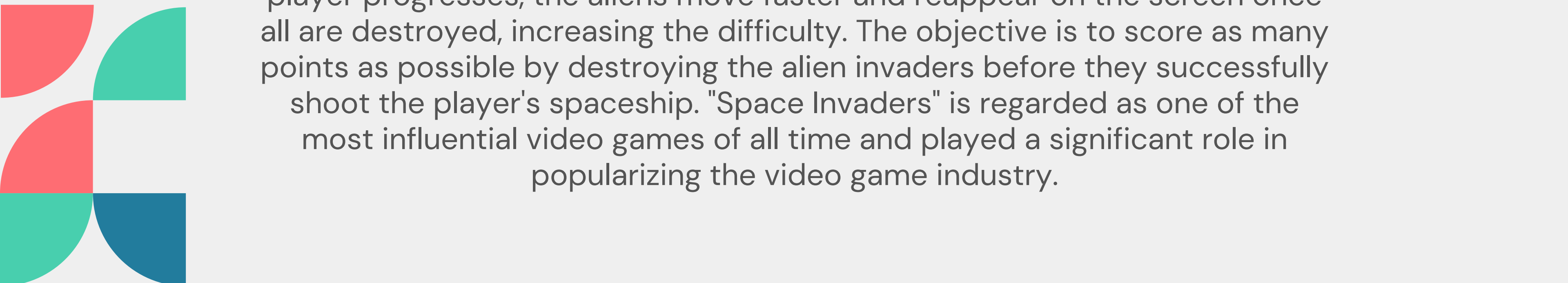
Aneesh Lokray – S20210010019

Joshit Battula – S20210010038



INTRODUCTION

"Space Invaders" is a classic arcade game released in 1978 by Taito, designed by Tomohiro Nishikado. In the game, the player controls a spaceship that moves horizontally across the bottom of the screen, aiming to shoot descending rows of alien invaders. The player must dodge the aliens' attacks and barriers while attempting to eliminate them. As the player progresses, the aliens move faster and reappear on the screen once all are destroyed, increasing the difficulty. The objective is to score as many points as possible by destroying the alien invaders before they successfully shoot the player's spaceship. "Space Invaders" is regarded as one of the most influential video games of all time and played a significant role in popularizing the video game industry.



Working of Game

1. **Player Controls** : The player controls a spaceship or "base" that can move horizontally along the bottom of the screen using arrow keys or a joystick.
2. **Alien Invaders** : Rows of alien invaders move horizontally across the top of the screen, opposite to the player's base.
3. **Player's Objective** : The player's goal is to shoot and destroy as many alien invaders as possible before they shoot the player's spaceship.
4. **Shooting Mechanism** : The player can shoot bullets from their base to eliminate the alien invaders.
5. **Alien Attacks** : The alien invaders periodically shoot projectiles towards the player's base. The player must dodge these attacks to avoid losing a life.



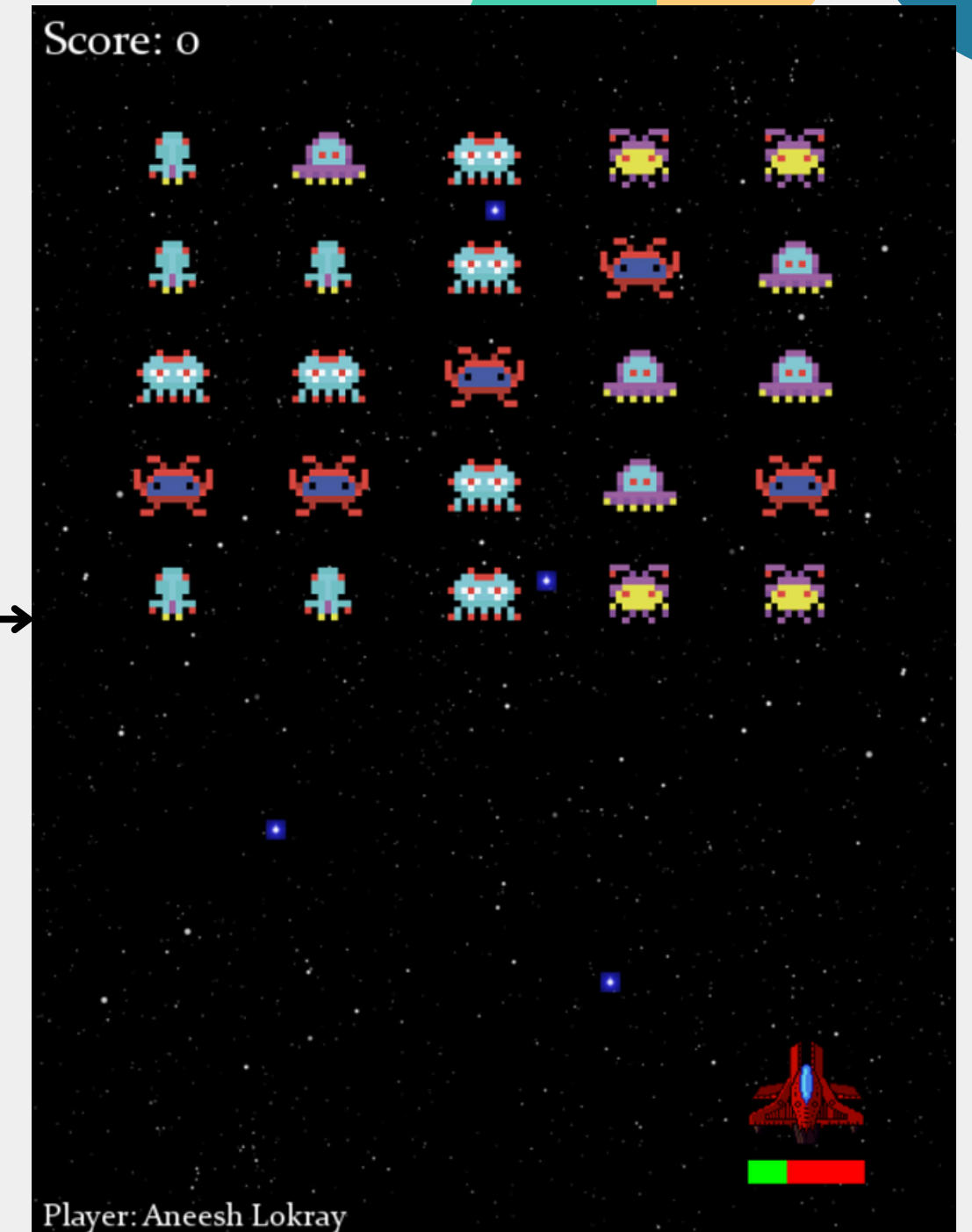
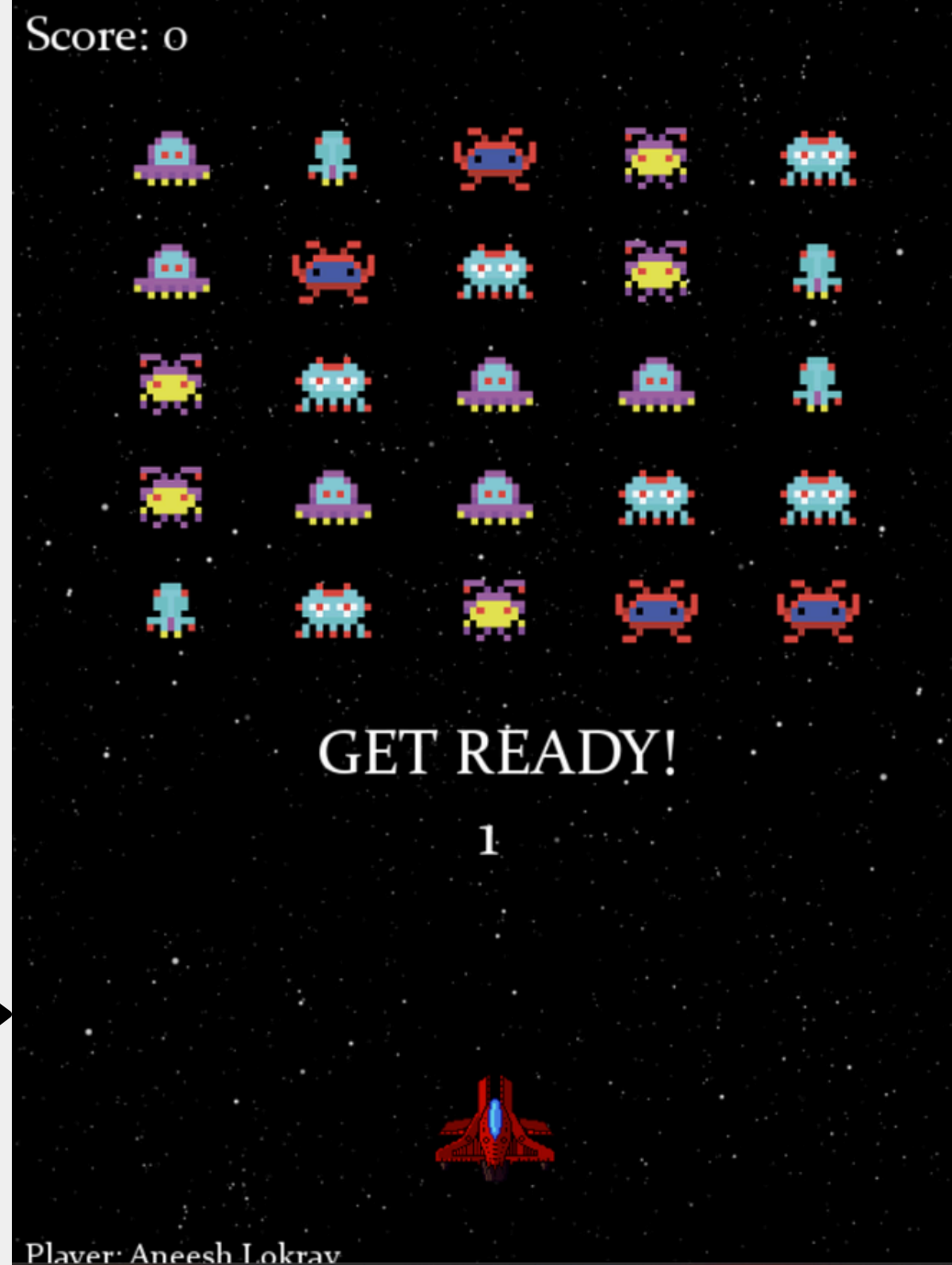
Working of Game

6. **Scoring** : Points are awarded to the player for each alien invader destroyed. Different types of aliens may yield different point values.
7. **Power ups** : The player gets one life after every 100 points scored and there are total of 5 lives.
8. **Increasing Difficulty** : As the player progresses through the game, the alien invaders move faster, making it increasingly challenging to avoid their attacks and destroy them.
9. **Game Over** : The game ends if the player loses all their lives by being hit by alien projectiles.
10. **High Score** : Players often aim to achieve the highest score possible, competing against themselves or others for bragging rights or recognition on the game's high score leader-board.

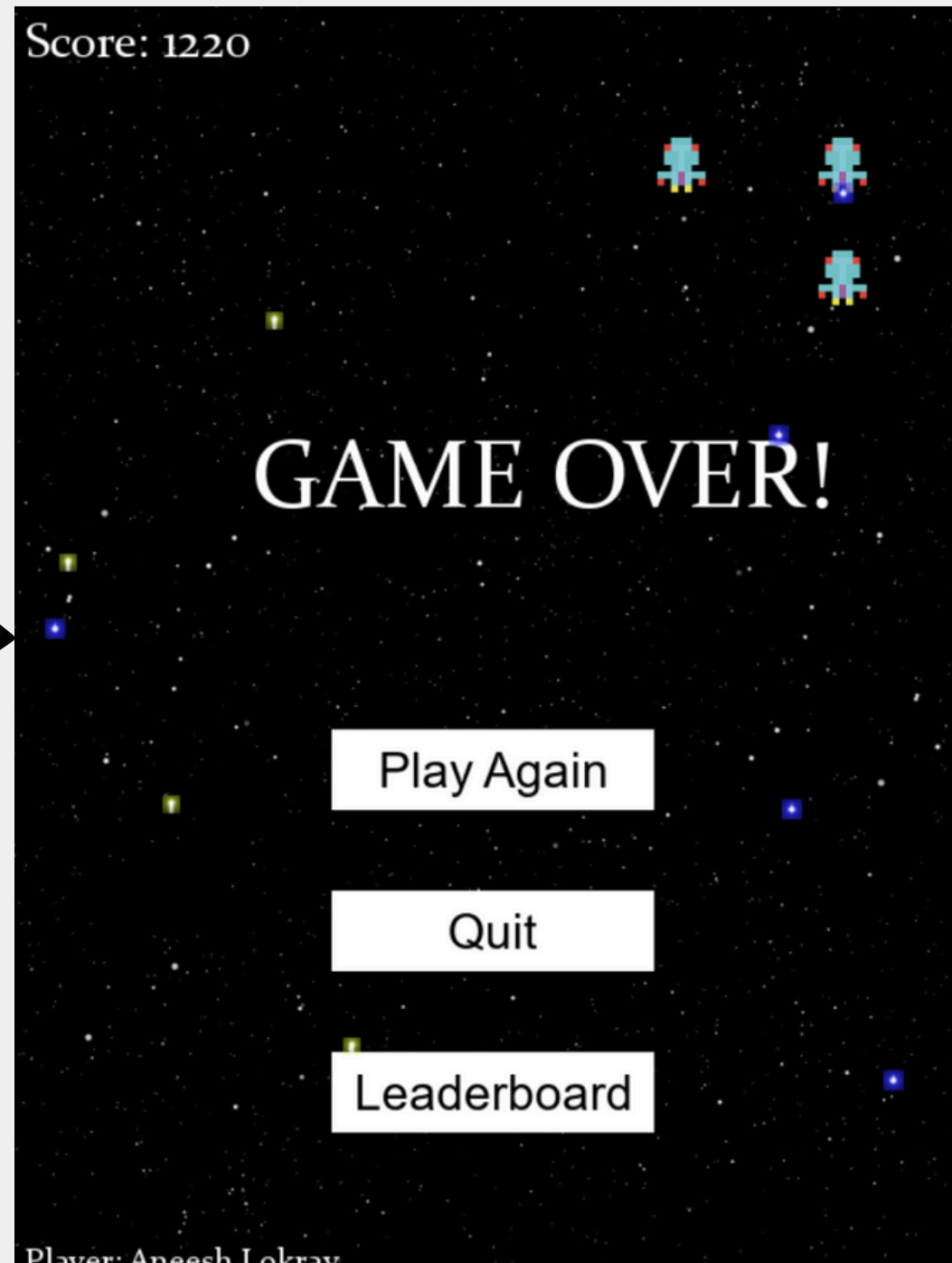
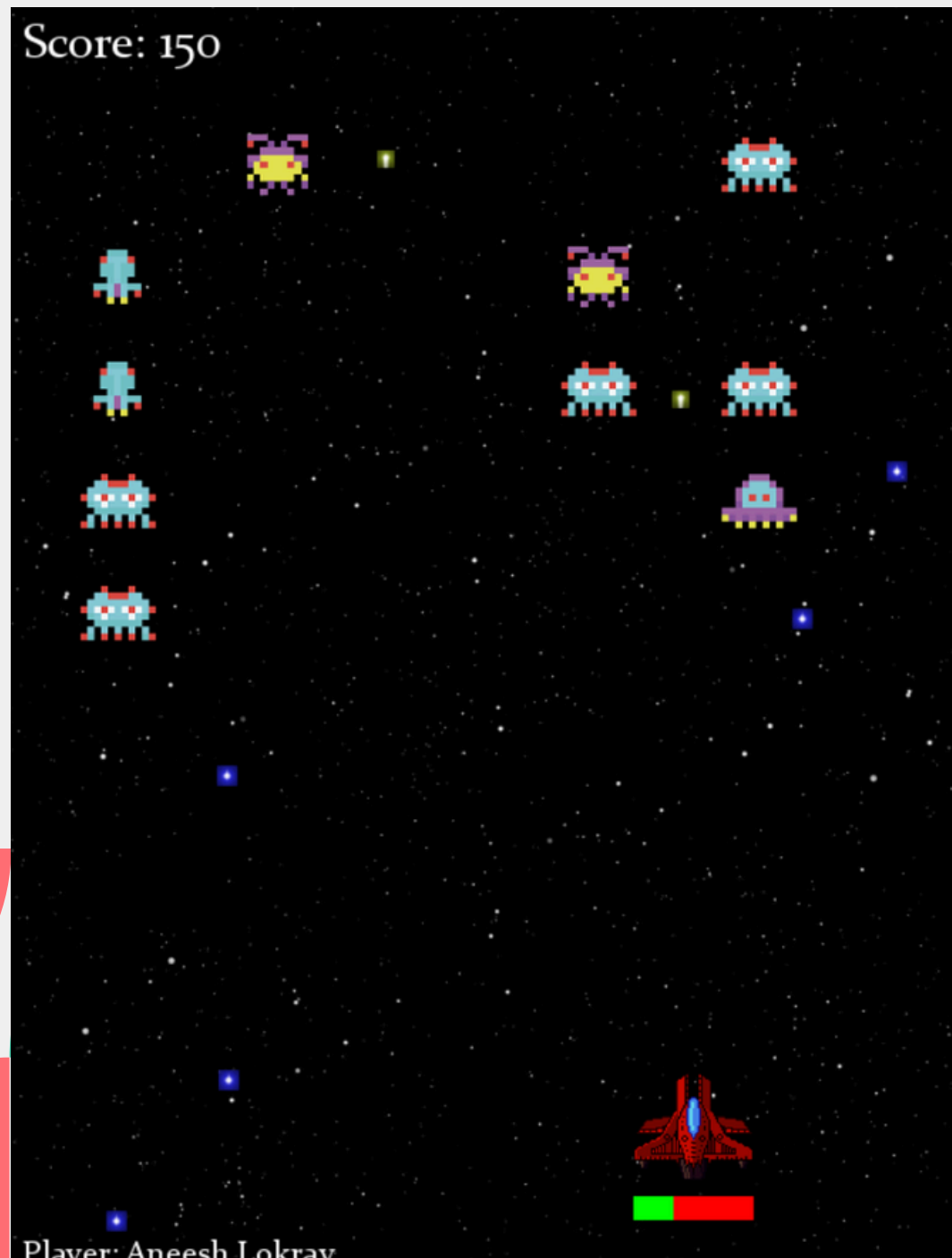


Workflow of Game

Enter Your Username:
Aneesh Lokray



Workflow of Game



Leaderboard	
Username	Score
Aneesh Lokray	1220
Josh	710
Aneesh	560
Sravan	240
Manohar	240
Shreyan	170
Sai teja	160
Chakri	130
Rahul	120
Panda	110
Back	

PACKAGES USED

Pygame

The main Pygame package, which provides functionalities for creating video games in Python.

Pygame-mixer

This submodule handles loading and playing sounds in Pygame.

pygame-locals

This submodule contains various constants used for event handling and key inputs.

OS

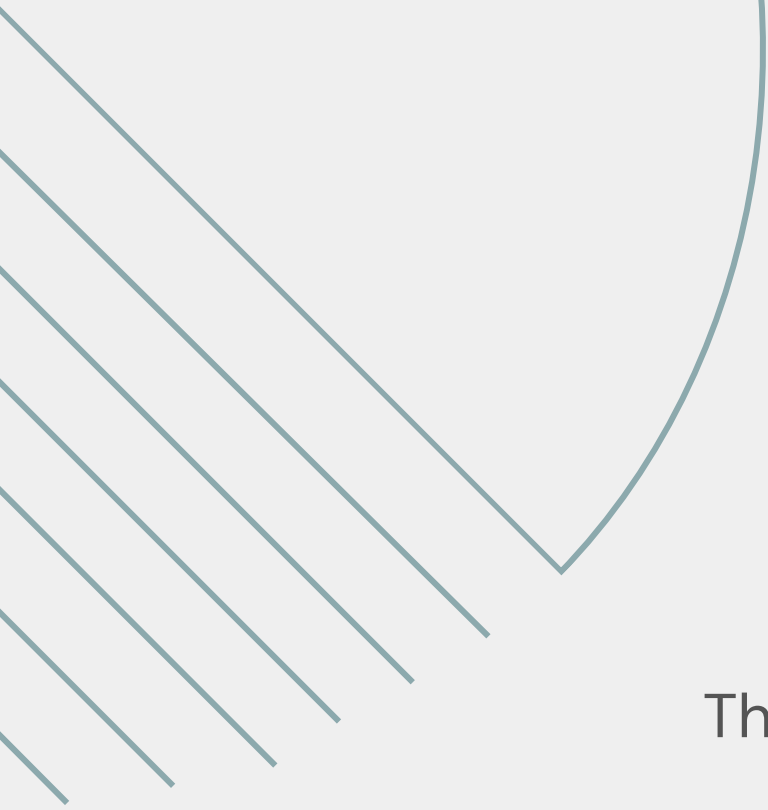
A module in Python that provides functions for interacting with the operating system. It's used here to check file existence.

Json

A lightweight data interchange format. In this code, it's used for saving and loading high scores.

Random

A module that implements pseudo-random number generators for various distributions.



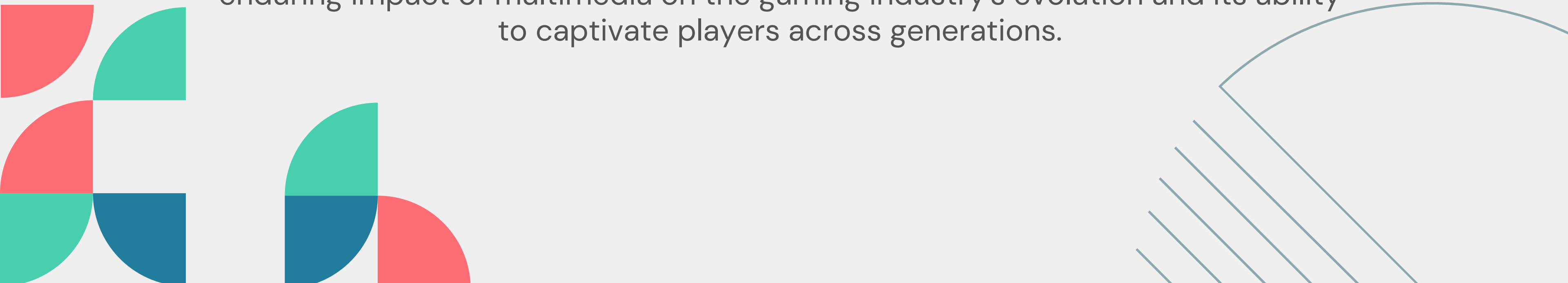
FUTURE EXTENSIONS

- Implement power-ups that provide temporary advantages to the player, such as Shield, Rapid Fire, Damage Boost
- Introduce different types of aliens with unique behaviours and abilities.
- Include challenging boss battles at the end of each level or at specific intervals.
- Allow the player to upgrade their spaceship with various enhancements, such as Increased health, Faster movement speed, Stronger weapons.



CONCLUSION

In conclusion, Space Invaders demonstrates the significance of multimedia systems in gaming. Its pixelated graphics and iconic sound effects create a nostalgic charm, enhancing player engagement. The game's simple yet challenging gameplay, coupled with its immersive multimedia elements, exemplifies how graphics, sound, and gameplay dynamics combine to craft memorable gaming experiences. Space Invaders stands as a timeless classic, showcasing the enduring impact of multimedia on the gaming industry's evolution and its ability to captivate players across generations.



The background features four decorative geometric patterns in the corners. The top-left corner has a series of parallel diagonal lines in a light blue-grey color. The top-right corner contains a cluster of overlapping semi-circles in yellow, red, teal, and dark blue. The bottom-left corner also features a cluster of overlapping semi-circles in red, teal, and dark blue. The bottom-right corner has a series of parallel diagonal lines in a light blue-grey color, mirroring the top-left pattern.

THANK YOU