Project Hope Documentation

Overview

Project Hope is a space-themed shooter game developed using Python and Pygame. It features player-controlled spaceships, enemy aliens, minibosses, and destructible obstacles in a visually stunning, high fidelity environment that allows for local co-op gameplay.

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Game Mechanics

Gameplay:
Players control a spaceship attempting to defend against a wave of alien attacks and miniboss encounters.

Players have 3 lives, and each hit from an alien will deduct one life.

The aliens move in an organised pattern, slowly but surely, approaching the player. The miniboss travels fast from one direction to another on the battlefield, scrambling between his legions and guiding them towards the players. The miniboss requires two shots to destroy, and your efforts are likely in vain, as there's likely an eager peon waiting to take his place in the ranks.

Scoring:
Points are awarded to each player, for each alien and miniboss defeated. An alien is worth 100 points, whilst a hit on the miniboss is worth 1500 points. They must be really important for that kind of an incentive.

Each player can see their current life and score counts in the top left and right corners. The score is also shown when the players are victorious, on the victory screen.

Game States:
- Main Menu: Navigate to start the game, adjust settings, or quit
- Playing: Active gameplay
- Paused: Temporary game halt
- Game Over: Displayed when all player lives are lost
- Victory: Shown when all enemies in a level are defeated

Modules Description:

'V2_main.py"
Houses the main game loop and state management, including rendering of game frames, handling user inputs, collisions, so on and so forth.
'player.py"
Defines the player's spaceship behaviour, including movement, shooting and collision detection
'alien.py'
Manages enemy behaviours, including different types of aliens and miniboss mechanics
'obstacle.py'
Handles obstacles that players and enemies can interact with during gameplay
'laser.py'
Manages the properties and behaviour of lasers shot by both players and aliens.
'Settings_manager.py'
Manages game settings like sound volume and screen resolution

Installation:

1. Simply go to the github repository
2. Fetch the latest version
3. Look for "v2_main.exe" inside the "dist" folder
4. Double click "v2_main.exe"

Game Controls:

Main Menu & Pause Menu:

- Arrow keys: Cycle through menu items
- Return key: Change setting value / Access menu
- ESC key: Takes you to previous menu/state

Gameplay:
"P" key adds the 2nd player.

Player 1 Controls:
- Arrow keys: Move the spaceship
- Spacebar: Shoot lasers
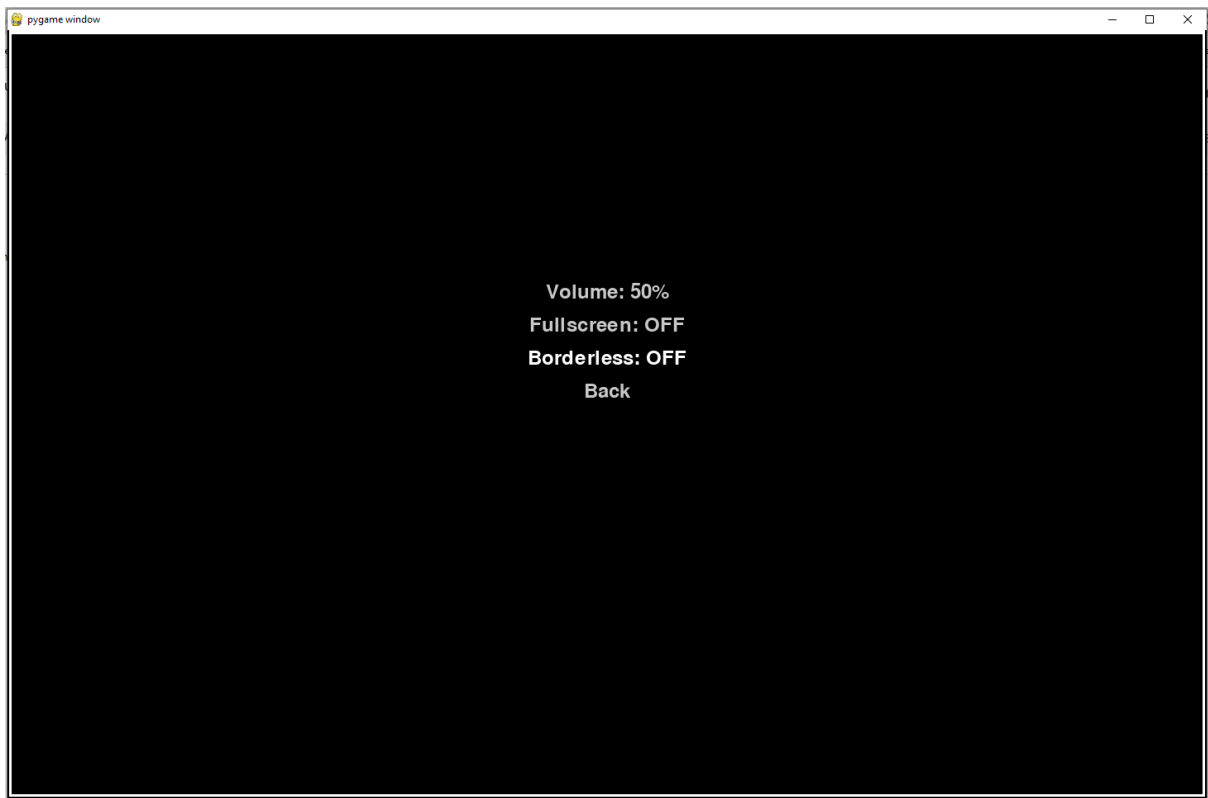- ESC: Pause the game

Player 2 Controls:
- WASD keys: Move the spaceship
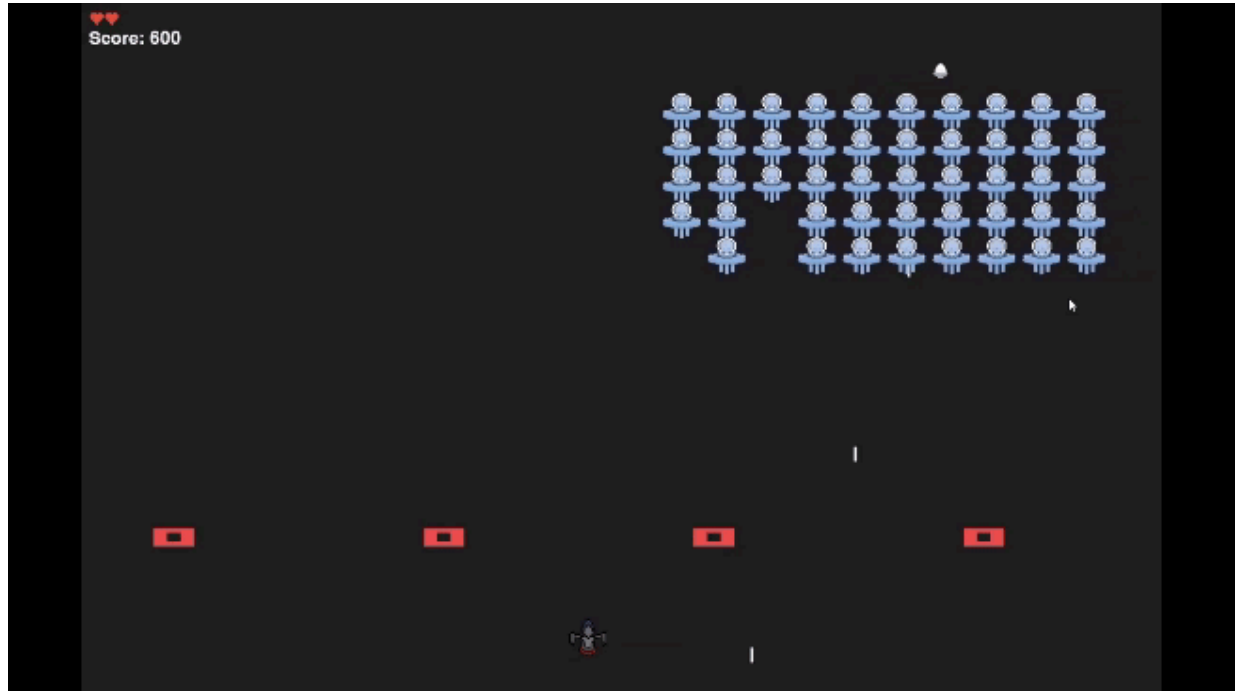- "Y" key: Shoot lasers
- ESC: Pause the game
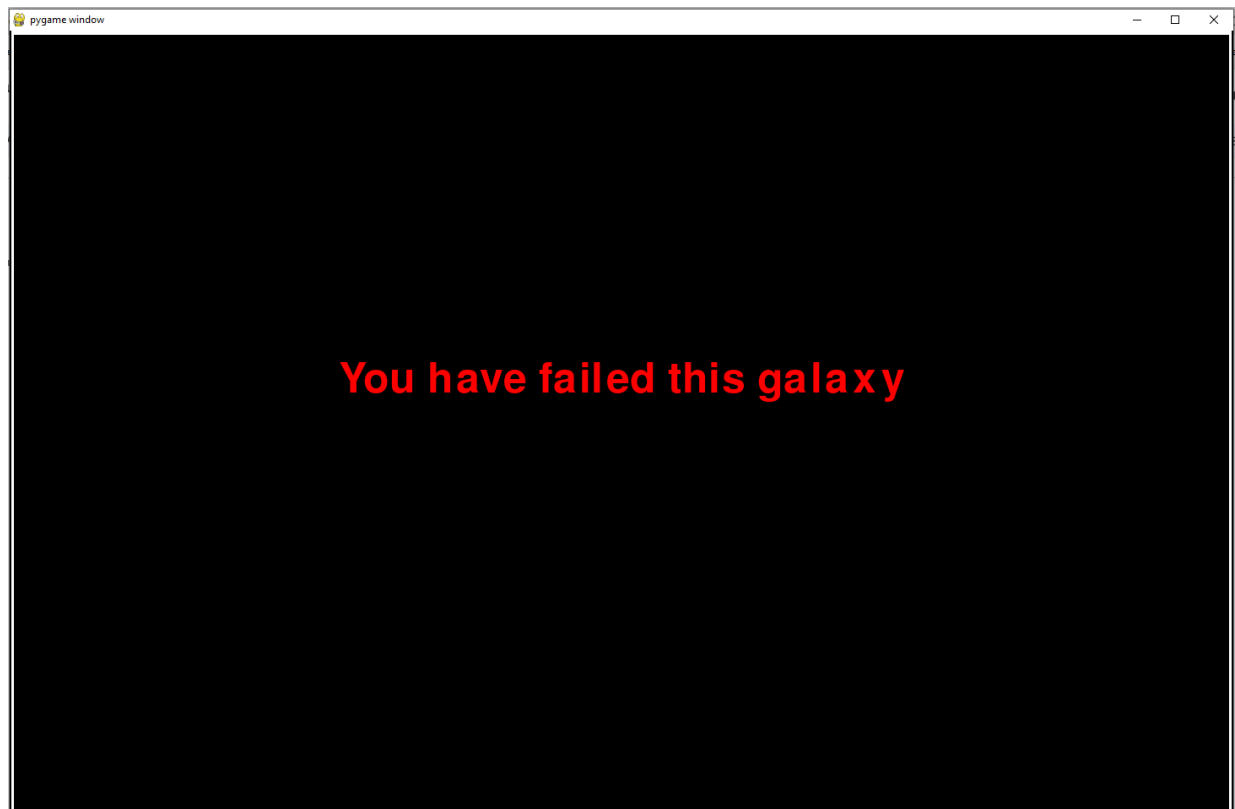
Screenshots:

Main Menu
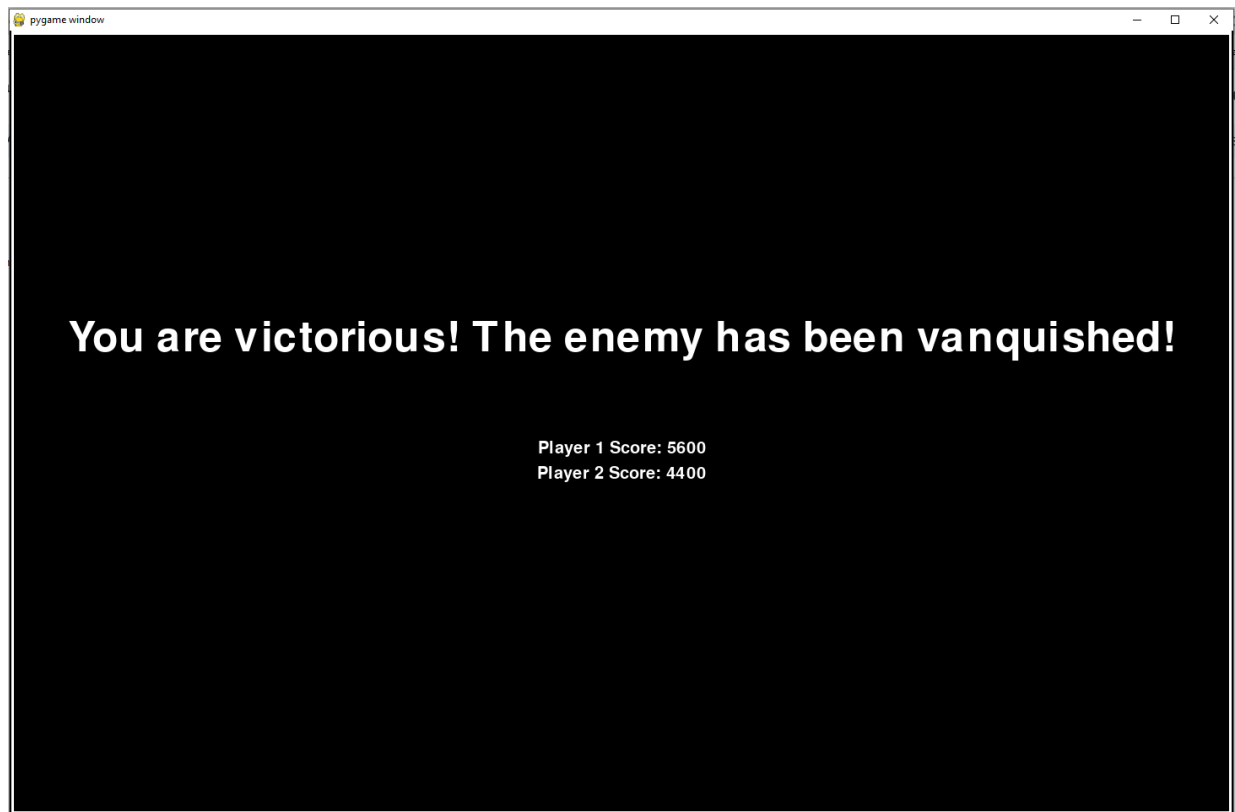

Settings Menu

Active Gameplay

Game Over Screen:

Victory Screen:

You are victorious! The enemy has been vanquished!

Player 1 Score: 5600
Player 2 Score: 4400