Alien Invasion Game Development Overview

Using Python and Pygame

Introduction

- • Overview of the project
- • Game description and mechanics

Technologies Used

- • Python and Pygame library
- • Tools: Visual Studio Code

Initial Setup

- • Setting up Pygame
- • Creating a settings class
- Code Example:
- screen = pygame.display.set_mode((800, 600))

Creating the Ship Class

- • Ship initialization
- • Displaying the ship
- Code Example:
- ship = Ship(screen)
- ship.blitme()

Implementing Ship Movement

- • Detecting arrow keys
- Code Snippet:
- if event.key == pygame.K_RIGHT:
- ship.rect.x += 5

Adding Aliens

- • Creating alien sprites
- • Code Example:
- alien = Alien(screen)
- alien.blitme()

Shooting Bullets

- • Allowing the ship to shoot bullets
- Code Snippet:
- bullet = Bullet(screen, ship)
- bullets.add(bullet)

Collision Detection

- • Detecting collisions
- Code Snippet:
- if pygame.sprite.spritecollideany(ship, aliens):
- sys.exit()

Score Tracking

- • Keeping track of score
- Code Example:
- score += 10
- print(f'Score: {score}')

Game Over Conditions

- • Ending the game on collision
- Code Snippet:
- if alien.rect.bottom >= screen.get_rect().bottom:
- game_over = True

Restarting the Game

- • Resetting game state
- Code Example:
- def restart_game():
- aliens.empty()
- bullets.empty()

Challenges Faced

- • Managing many sprites
- • Handling game states

Future Improvements

- • Adding power-ups
- • Introducing levels and bosses

Conclusion

- • Summary of the development process
- • Demo of the final game