COP 701: Assignment 2

(Havoc runner)

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Introduction

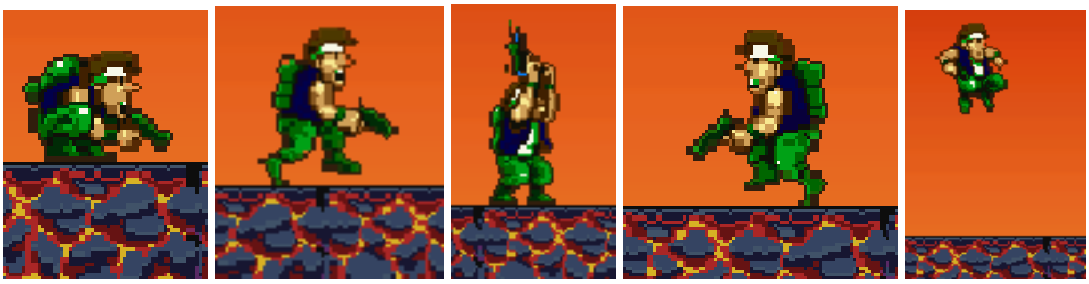
The 2D game Havoc Runner, developed using Unity is a fast-paced action game where players control a character tasked with fighting through waves of enemies while navigating challenging terrains. We created this project to explore game design elements, character control, and enemies within a 2D game environment.

The game involves multiple enemy types, coins, a different ultimate boss for each level, power-ups, and a few traps. The objective of each level is to defeat the final boss. Once defeated, you can go to the next level. Finishing all of the game's levels in a single run will require good gaming expertise.

Features

1) Player Controls

   The player can move left or right, jump or crouch to avoid obstacles or projectiles, and shoot enemies using ranged attacks.
   The game offers a smooth control system, using both keyboard and mouse for movement and shooting.
   We've also implemented various animations for these actions. We have attached a few of these animations below.



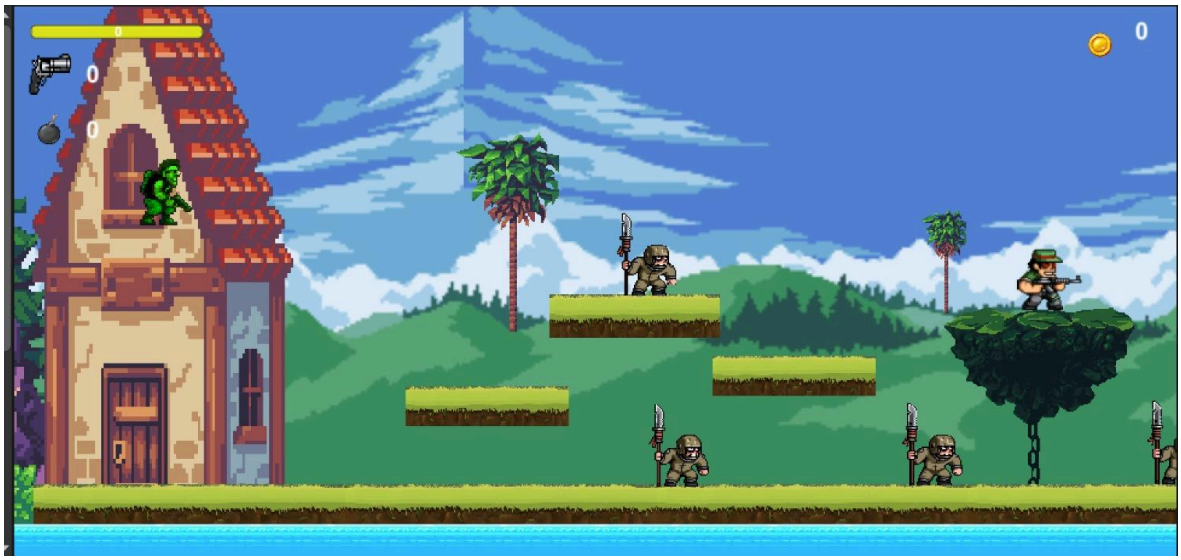
2) Start Menu

   Included a UI component for rendering start, instructions and quit as Main menu for starting the game.

3) Level System

The game features three main levels, each themed on a different terrain (grass, snow, and lava).
Each level features unique backgrounds, bosses, enemies, obstacles, and so on.

Attached below are a few photos from each level.



4. Audio effects and animation:

To improve the gaming experience, various animations and sound effects have been added in the game.
This includes sounds while shooting, explosions, enemy encounters, etc
It also includes various animations while doing these actions like during explosion, shooting, jumping, enemies flight, etc

5. Game UI

A user-friendly interface displays the player's health, score, and remaining ammunition, providing crucial information for decision-making during the game.
Health bars are visible for the player along with the number of coins, number of bombs, number of bullets left before reload, etc
UI for the start menu has also been made.

How the game works

1. Player Movement and Combat

The player controls the protagonist using arrow keys or WASD for movement, with space for jumping. Shooting is handled via mouse control/control, where the player shoots bullets in the aimed direction. The game uses rigid, body-based physics. system to manage collisions and character movement, ensuring smooth gameplay interactions.

2. Enemy AI

Enemy AI varies depending on the type of enemy. Basic enemies rely on simple pathfinding logic, moving towards the player when within a certain range, while flying enemies utilize targeted attacks. The boss enemy introduces complex behaviors such as periodic shooting and enemy summoning, adding an additional layer of difficulty.

3. Boss Mechanical

The boss engages the player in a multi-phase battle. The boss periodically shoots projectiles and summons smaller enemies to overwhelm the player. The faster the boss gets defeated, more the chances of survival, as it becomes harder with time due to increasing summoning of enemies.

Bonus Features

1. A snowfall feature was added for level two.
2. A killer obstacle (lava field) was added in the third level, which makes the character die if he comes in contact with it.
3. Added parallax component
4. Added enemy spawn during boss battle with random dire rate and firing range for better experience.
5. Added flying objects that track and follow the player.
6. Added powerups like upgrading health/bullets, etc using coins along with health Powerup.

Resources used:

Unity Store for assets
Googled for images for extracting it in the form of sprites
Used BG remover from cropping images
Used craftpixnet for getting many ideas of sprites
Used itch.io for few sprites