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Group5\_Gandhi\_Vihol

Jahanvi Gandhi - 8985640

Mehangee Vihol - 8960240

Game Design Document

PROG2370: Game Programming with Data Structures

Fear of Forest – Game Document

# Overview

**Fear of Forest** is a casual 2D endless runner game where the player navigates through a forest filled with obstacles, enemies, and collectibles. The goal is to survive as long as possible while achieving a high score by collecting coins and defeating enemies.

# Key Features

* **Endless Runner Gameplay**: The player auto-runs through the forest while dodging obstacles and interacting with enemies.
* **Dynamic Scoring**: Score increases by collecting coins, defeating enemies, and surviving longer.
* **Health System**: Players have limited health that depletes when hit by enemies or obstacles.
* **Attack Mechanic**: Attack certain enemies for bonus points.
* **Leaderboard**: Keeps track of the top 10 scores with details like coins collected and enemies defeated.
* **Beautiful Visuals**: Minimalistic and classy design with smooth animations.
* **Background Layers**: Parallax scrolling to give depth to the game world.

# Gameplay Mechanics

**Player Abilities**

* **Auto-Run**: The player continuously moves forward.
* **Jump**: Use the Space or Up Arrow key to jump over obstacles.
* **Attack**: Use A or Left Shift to attack certain enemies.

**Health System**

* The player starts with 3 health points.
* Colliding with enemies (e.g., Boar) or missing platforms reduces health.
* Health depletion results in the game ending.

**Score System**

* **Coins**: Collecting coins increases the score.
* **Enemies**: Defeating enemies doubles the points.
* **Time**: Survive longer for incremental score bonuses.

**Obstacles and Enemies**

* **Boars**: Avoid them to prevent health loss.
* **Snails and Flies**: Can be defeated with attacks for bonus points.

# Game Flow

1. **Main Menu**:
   * Options: Start Game, Leaderboard, Info, Credits, Quit.
   * Players can navigate using keyboard or mouse.
2. **Gameplay**:
   * Player auto-runs through the forest, jumping between platforms, collecting coins, and attacking enemies.
   * As the game progresses, platform scrolling speed increases.
3. **Game Over**:
   * Display the player’s score.
   * Save the score to the leaderboard if it qualifies.
4. **Leaderboard**:
   * Shows the top 10 scores with details like coins collected, enemies defeated, and time taken.
   * Player can return to the main menu.
5. **Info**:
   * Displays instructions, controls, and game objectives.
   * Player can return to the main menu.

# Game Assets

**Visuals**

* **Backgrounds**: Three parallax layers for depth (e.g., sky, forest, and ground).
* **Player Animations**:
  + Running, Jumping, Attacking, and Dead states.
* **Enemy Animations**:
  + Snails, Flies, and Boars have distinct animations.
* **Collectibles**: Coins rotate dynamically to stand out.

[*https://brullov.itch.io/oak-woods*](https://brullov.itch.io/oak-woods)

[*https://anokolisa.itch.io/sidescroller-pixelart-sprites-asset-pack-forest-16x16*](https://anokolisa.itch.io/sidescroller-pixelart-sprites-asset-pack-forest-16x16)

**Audio**

* Background music and sound effects (e.g., coin collection, attack, and game over).

[*https://pixabay.com/sound-effects/sword-sound-effect-2-234986/*](https://pixabay.com/sound-effects/sword-sound-effect-2-234986/)

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# Core Components

1. **Player**:
   * Handles animations, state transitions (Run, Jump, Attack, Dead), and collision detection.
2. **Level**:
   * Dynamically generates platforms, enemies, and collectibles.
3. **Leaderboard**:
   * Saves and retrieves scores from a local JSON file.
4. **Scenes**:
   * MainMenu, Gameplay, Leaderboard, Info, Credits.

**Future Improvements**

* **Power-Ups**: Add temporary abilities like double jump or shield.
* **New Levels**: Introduce new backgrounds and enemies with different abilities.

# Our Game

A screenshot of a computer game

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A screenshot of a computer game

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A screenshot of a computer

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A screenshot of a video game

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