Documentation: Milestone 1, Assignment 2

Design:

The player will be tasked with navigating a series of floating platforms using movement controls and special abilities such as air dashing and gliding. The goal is to collect the most number of coins in a given time limit, we will also have collectible speed boosts on the platforms. Falling off a platform will penalize the player in some way (either game over, time reduction, or point reduction). The platforms will also need to incorporate various floor angles to create surfaces that the player may slide off of. The GUI will be very simple and consist of a countdown timer, a coins collected pane to track progress, and a sound control panel. The game will feature background music and sound effects for the various movements such as jumping, gliding, dashing, collecting a coin, ect.

Software architecture and plan:

Scene Tree

Main (Node)
- Game (Spatial)
  - -Script_parent
    - --KinematicBody
      - ---CollisionShape
      - ---MeshInstance
      - ---Camera
  - GUI (MarginContainer)
    - Timer
    - Coins Collected
    - Sound fx on/off indicator
      - Sound fx can be toggled with key press
    - Background music volume indicator
      - Sound volume can be adjusted with key press

How will you keep the code modular:

Implementation through Godot's Node-based system will allow us easy distribution of any asset as long as all dependencies are packaged together. To adhere to this practice and keep our assets modular for future use, we will attempt to structure our hierarchies and assets so that they can be dropped into a new scene and require little to no overhead to get working again. Currently we plan on packaging the player and 3rd person camera together so that our full player system could be used elsewhere.

Tracking Game State:

We plan on tracking the game state in our script that contains the number of coins collected by the player and the time remaining before the level ends. This script will also handle penalties for when the player falls off platforms.

Scaling back plan:

If our group begins to run out of time, we will sacrifice our ledge Fall/Stop/Hang mechanics first, as our group views these mechanics as the most costly of all. We want to first get the basic necessities working together end to end before focusing on the harder mechanics and details.

Work Scale: 1 = easiest 5 = hardest

- **Player Package**
  - **Move** - 1
  - **Jump** - 1
  - **Fall** - 1
  - **Walkable Angle** - 3
  - **Ledge Fall/Ledge Stop/Ledge Hang** - 5
  - **Gliding - 2**
  - **Dashing (in air and on ground) - 4**
  - **Object Interactions** - 3
  - **Game Timer** - 1
- **Camera control - 3**
- **Sound effects and Background music - 1**
- **Physics and collision detection - 3**
- **GUI and Status Display - 2**

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Division of labor:

Robert: Movement, Jump, Fall, Walkable Angle

Huylar: Gliding, speed boost and coin interaction, timer countdown

George: GUI and sound effects, camera control

Keegan: Dashing, Ledge mechanics

We all agree that the work not necessarily parallelizable and we'll work together on stuff and also on whatever needs to be done next.

Will have major work days on Friday, Saturday, Sunday (10/4 - 10/6)