Crash Course

Prototype P.D.D

Overview

Quick Pitch:

The Crash Course is a game made for people that want to practice their abilities in "speedrunning", finding the optimal inputs for the current and next situation presented to them.
The player is controlling a cube is a 2.5D world and must reach the end of the level as fast as possible while platforming and encountering enemies and other roadblocks that stand in the way of their new record.

Requirements

Environment/World

- Platforms to jump to and from and walls to duck under or jump over

- 3D cube to represent the player as well as enemies.
- Environmental obstacles like spikes and pits

UI/Items
- Start   Game   button

- A counter to show how much time has passed since game start

Player Control
- The player will be controlled with the W, A, S and D keys and jump with the Space key

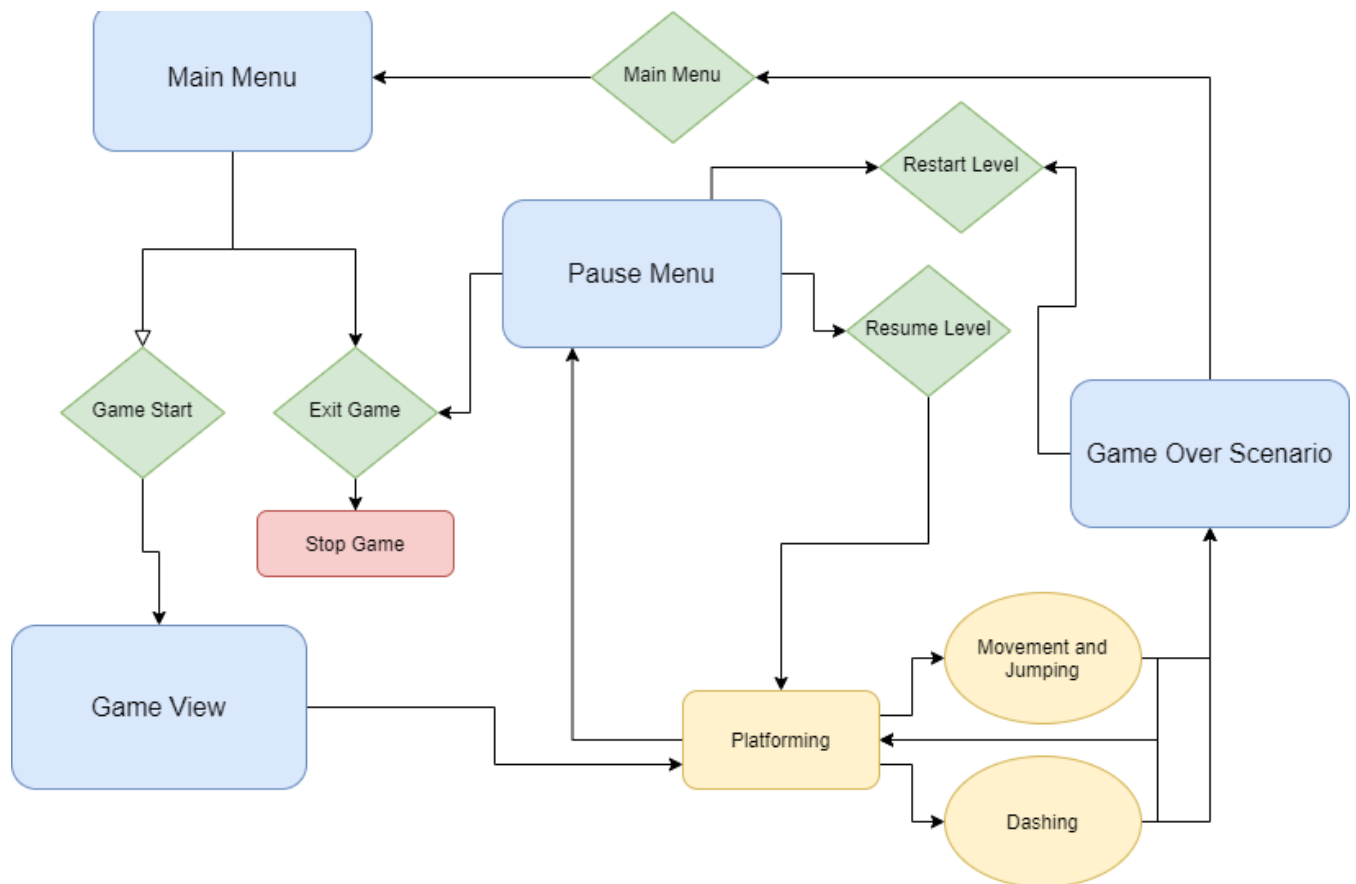   o They can also dash using the Left Mouse Button

Enemy AI

- The enemies will be patrolling the many platforms within the level and actively chase the player if they encounter them.

Screens

Scenes

- Main Menu
  - New Game
  - Quit Game
- In game
  - Pause Menu
    - Main Menu
    - Quit Game
  - Game Over Panel
    - Restart
    - Main Menu

Game Flow Diagram

Non-Goals

- Audio
- Textures on environment. We are only using Unity Primitives.

Tools

Unity 2020.1.5f1

Game engine I have used and know how to use so far, it will be used to make the game as it is also a free program for a game that isn't planned to be monetized.

Visual Studio 20

A scripting API integrated into Unity; it is a no-brainer to use it. Works with C#, the only scripting language that I know how to use, and it clearly highlights mistakes and proposes fixes to them, making it beginner friendly.

DOTween

An addon for scripting that allows for some easy and flashy animations, it can bring life to even the Unity Primitives.

Systems of Note

Dashing

While simple movement is present in the game, dashing is the primary mechanic of this platformer. Since the goal is to finish the level as fast as possible, dashing at the right moments will impact the final score tremendously.

The Dash is also an important system, as it can also be used to kill enemies by dashing through them. Some people would try to jump above them, but confidently dashing through them is the way to go.

Systems Design Diagram

Character

Character

Movement

Health

Player

Jump

Dash

Enemy

Player Detection

Environment

Environment

Hazard

Kill Zone

Blockers

Walls

U.I

U.I

Main Menu

Start Game

Exit Game

In-Game

Timer

Pause Menu

Resume Level

Restart

Main Menu

Lose Screen

Restart
Main Menu

Win Screen

Restart
Main Menu