ST Runner Script for Unity 3d Game Development

Unity Interface

(A) The Hierarchy window is a hierarchical text representation of every GameObject in the Scene. Each item in the Scene has an entry in the hierarchy, so the two windows are inherently linked. The hierarchy reveals the structure of how GameObjects attach to each other.

(B) The Scene view allows you to visually navigate and edit your Scene. The Scene view can display a 3D or 2D perspective, depending on the type of Project you are working on.

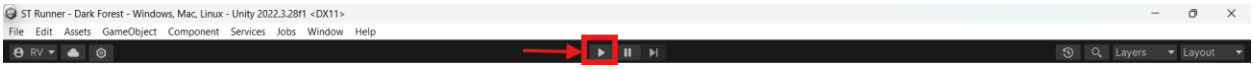
(C) The Game view simulates what your final rendered game will look like through your Scene Cameras. When you click the Play button, the simulation begins.

(D) The Inspector window allows you to view and edit all the properties of the currently selected GameObject. Because different types of GameObjects have different sets of properties, the layout and contents of the Inspector window change each time you select a different GameObject.

(E) The Project window displays your library of Assets that are available to use in your Project. When you import Assets into your Project, they appear here.

(F) Overlays contain the basic tools for manipulating the Scene view and the GameObjects within it. You can also add custom Overlays to improve your workflow.

How to run the game?



Click on the play button on the Toolbar, you can find it at the top of the Unity interface. This will start an instance of game which you can play and the play button will become blue. To stop the game click again on the play button which will then turn back to black background showing that the game has stopped.

How to move around in the Scene?

Hold right click on your mouse and press W to move front, A to move left, S to move back and D to move right. To turn or rotate the view, hold right click and drag your mouse. To slide away, hold middle click while dragging your mouse.

What is a Scene?

Scenes contain the objects of your game. They can be used to create a main menu, individual levels, and anything else. Think of each unique Scene file as a unique level. In each Scene, you will place your environments, obstacles, and decorations, essentially designing and building your game in pieces.

How to change your current scene?

Since a game consists of several different scenes, you can change the scene that is currently opened. By going to the project window, click on the scenes folder. Now you should see 3 different scenes: Credits, Dark Forest and Main Menu.

What are GameObjects?

GameObjects in Unity are like the main items or things in your game world. Think of them as the empty containers or shells that you can fill with different features using components.

What are Components?

Components in Unity are like building blocks that you attach to GameObjects to give them different features and behaviors. Think of a GameObject as a toy car and components as the parts you add to make the car work (wheels, engine, lights, etc.). Some of the components we will be using are: Colliders, Rigidbodies, scripts, etc.

What are Colliders?

Colliders are components that define the shape of an object for the purposes of physical collisions. They can be basic shapes like boxes or spheres, or more complex mesh shapes. They allow game objects to bump into each other.

What are Rigidbodies?

A Rigidbody component makes an object respond to physics forces like gravity and collisions. When you add a Rigidbody to an object, Unity's physics engine will handle how it moves and interacts with other objects.

Challenge 1: Change the size of the collider of obstacle

Movement and Physics in Unity

- **Movement**: This refers to how game objects move in the game world. It can be controlled by scripts that tell the object where to go and how fast to move.
- **Physics**: Unity's physics engine simulates real-world physical interactions between objects. It handles things like gravity, collisions, and other forces, making objects move and behave realistically.

Challenge 2: Change the movement speed of the player

Player Controls

- **Player Controls**: This involves setting up how the player will interact with the game, usually through input devices like keyboards, mice, or game controllers. It includes configuring buttons and joystick movements to control the player character or other game elements.

Challenge 3: Change the keybind for roll or jump?

Camera Setup

- **Camera Setup**: The camera in Unity is what the player sees in the game. Setting up the camera involves positioning it correctly in the scene, deciding how it follows or focuses on objects, and adjusting settings like field of view and depth of field.

No need to have a challenge for this

Animations

- **Animations**: Animations in Unity bring game objects to life by changing their properties over time, such as position, rotation, or appearance. This can include things like character movements, environmental effects, or user interface transitions.
- **Animation Controller**: Animation Controller in Unity is like a set of instructions that tells a character or object how to move or change. Think of it like a director in a movie who tells actors when to run, jump, or dance.

Challenge 4: Change the animation for one of the states.

UI Elements

- **UI Elements**: User Interface (UI) elements are components like buttons, text, health bars, and menus that players interact with on the screen. Setting up UI involves arranging these elements and scripting their behavior to respond to player actions.

Challenge 5: Add your name to the credits scene