YouTube Video Link

<https://youtu.be/UvFaP-6HvOU>

GitHub Link

<https://github.com/amir-nazemi/IMTC-505-Lab1.git>

Scripts

GameManager

Script location: Assets/Scripts/GameManager.cs

Used in the GameManager prefab.

This script contains the game logic. The tasks this script does are as follows:

* When the game starts it does the following:
  + Find and keep track of all the GamePoint objects. This information is used to calculate the max score.
  + Record the starting position of the player character.
* Updates the text objects which are referenced (linked by dragging and dropping in the component view).
* Start the clock when character moves beyond StartDistance units away from the starting position recorded.
* Keep track of the points scored and the time remaining
* Changing the material of the point objects, and setting the movement and rotation speed of objects to zero after scoring the points
* End game (i.e. disable scoring and stop timer) when max score reached or the time limit is reached.

Options in component view:

* Start Distance: the distance the character has to move for the game to start, in unity units
* Time Limit: The time limit of the game in seconds
* Points Text: Reference to the text object (GameObject with TextMeshPro GUI component) on a Canvas. Points information will be printed out to the element referenced here.
* Time Text:  Reference to the text object (GameObject with TextMeshPro GUI component) on a Canvas. Time information will be printed out to the element referenced here.
* Mat: material of the point objects after being scored

GamePoint

Script location: Assets/Scripts/GamePoint.cs

Used in the Points prefab.

Any GameObject with this script would be treated as a object the player character can interact with. When the player character runs through this object, it will increase the points as seen it's component view, then changing the material (originally color) from cyan to purple, setting the axial velocity of movement to zero and setting the rotation to zero. It is worth to note that the rotational velocity of point objects are proportional to their points (the higher points the object has, the faster it rotates). The GameObject with this script should have a collider. When the game starts, this will also disable any colliders in any of it's child GameObjects.

Options in component view:

* Points: the points scored when the player
* Y\_rotation: Rotation around Y axis
* Delta: Displacement of the point object
* Speed: The linear velocity of the point object
* StartPos: Initial position of the point object

ObjBehavior

Script location: Assets/Scripts/ObjBehavior.cs

Used in the PointObject prefab.

Any GameObject with this script would have some rotational and linear behavior.

Options in component view:

* X\_rotation: Rotation around X axis
* Y\_rotation: Rotation around Y axis
* Z\_rotation: Rotation around Z axis
* DeltaX: X Displacement of the object
* DeltaY: Y Displacement of the object
* DeltaZ: Z Displacement of the object
* Speed: The linear velocity of the object
* StartPos: Initial position of the object

Prefabs

GameManager

Script location: Assets/Prefabs/GameManager.prefab

Points

Script location: Assets/Prefabs/Points.prefab

Uses GamePoint script.

This is point object that can be placed in the scene. Contains the GamePoint script attached to a group of cubes. The scene contains 10 instances of this object.

Point Material 1

Material location: Assets/Prefabs/Point Material 1.mat

Used as the material of Points when it has not been scored.

Point Material 2

Material location: Assets/Prefabs/Point Material 2.mat

Used as the material of Points when it has been scored.