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HW 2

CSC 3150

3.a) Explain the behavior of Time.deltaTime in Unity in a few sentences. Add a C# script that associates Time.deltaTime to your primitive object (The specifics of the implementation of Time.deltaTime are left to you, and you may choose to implement it as you see fit)

* Time.deltaTime is used in Unity will tell developers how long it takes for a frame to execute. Multiplying something by Time.deltaTime is used to make a game “frame rate independent” which allows all users to have a similar experience, ensuring that it behaves the same on slow and fast computers.

3.b) Watch the video of the racing game, Forza Horizon: <https://www.youtube.com/watch?v=WtuBLc3cU-o>. Based on your understanding of Time.deltaTime, please try to explain where it may have been used in the game. Also, explain how the user experience would vary depending on the machine if it weren’t used.

* Time.deltaTime may have been used in the movement of the cars to separate their rate of movement from the framemate of the machine its being run on. If Time.deltaTime isn’t used, the frame rate and capabilities of the machine would determine how fast your car would be able to go. However, by using Time.deltaTime Forza is able to separate the machines performance from the movement of the car.

5. Explain the following:

a) Mesh Renderer

* The Mesh Renderer component is used to render the 3D mesh in a scene and make it visible for the camera. It is used to render characters, environment objects, and other 3D assets.

b) Box collider

* The BoxCollider component is used to define the collision area around a GameObject in Unity. It helps with collision detection and physical interactions for GameObject.

c) Input.GetAxis method

* The Input.GetAxis method returns value of a virtual axis, which is used detect inputs from devices (like keyboards). This is used to map input controls to actions in the game.

d) Rigid body

* The Rigid Body component allows a GameObject to act under the control of Unity’s physics engine enabling realistic physical interactions like gravity, collisions, and forces