Game Development HW 2

3.

1. Time.deltaTime in Unity is a variable that represents the time interval it took from the last frame to the current and measures it in seconds. It is a read-only property. If you multiple something by Time.deltaTime, it makes the game “frame rate independent “.
2. In Forza Horizon, Time.deltaTime may have been used to determine how fast the car should go per frame based on the speed of the car. It can also be used to detect and avoid collisions. Time.deltaTime helps keep the stimulation consistent and as stable as possible. It is also used when controlling the sky and whether it was day or nighttime keeping it consistent at different frame rates. User experience would vary if the machine wasn’t used. Car speeds would be chaotic and unpredictable due to all the movement being frame-dependent. Collisions and accidents would also be unpredictable in the game Any type of controlled animation or effect would be unpredictable, sloppy, and uncontrollable.

5.

1. Mesh Renderer is a component in Unity that is responsible for rendering a 3D mesh in the scene so that it is visible to the camera. If you were to turn off the mesh renderer, the 3D mesh would be masked to the camera. Mesh renderer is also used to render characters, environment objects and other 3d assets.
2. Box Collider is a component in Unity that defines a box shaped collision area around a GrameObject. This component provides collision detection and physical interactions for GameObjects and helps define the collision area for characters, and GameObjects in the scence.
3. Input.GetAxis is a method in Unity that returns a value of a virtual axis, which can then be used to detect input from devices like keyboards, joysticks, and game controllers. Axis names of Horizontal and Vertical are used to map input controls to actions in your game.
4. Rigid body is a component in Unity that allows a GameObject to act under the control of Unity’s Physics engine which enables realistic physical behaviors like gravity, forces, and collision.