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Game Development

Homework\_Four

1. **Explain the following in a few sentences and give an example in your own words (or research the internet to find one. If researched, please cite your source)**:
   1. World coordinate system
      1. The “global” map of the Unity scene which stays the same for everything, no matter where the objects are or how they’re positioned/rotated. For example, is an object (such as a soccer ball) is placed in world space at the coordinates (2, 0, 0), that means that the soccer ball is 2 units to the right of the origin (which is the center).
   2. Local coordinate system
      1. Based on the object’s specific position and rotation. When the object is rotated, the x, y, and z axes are rotated along with the object. For example, if a rocket has a local forward direction to the left in world space, if it were to be moved by (0, 0, 1), then it will move left in the world space.
   3. Vector3. Also, explain any two vectors in Unity of your choice.
      1. Represents a 3D point or direction with x, y, and z values. For example, if a rocket were to use Vector3.forward, then it would fly straight ahead.
   4. Rigidbody.AddRelativeForce function
      1. Adds force to an object solely based on the object’s local direction. If a rocket is tilted upward, then a specific function would be called to push the rocket in the direction that it is facing.
   5. Input.GetKey function
      1. Checks if a specific key on the keyboard is being held down. For example, a specific function/code would be able to tell you if the spacebar is being pressed. If done correctly, the console could display a message to show when the spacebar is being held.