Develop a scene in Unity that includes a cube, plane and sphere. Create a new material and texture separately for three Game objects. Change the color, material and texture of each Game object separately in the scene. Write a C# program in visual studio to change the color and material/texture of the game objects dynamically on button click.

🛠️ Part 1: Setup Unity and Create a New Project

1. Install Unity Hub:
    - Download from Unity's official site.
    - During installation, select a version like Unity 2021 LTS or newer.
2. Create a new 3D project:
    - Open Unity Hub → Click New Project → Choose "3D Core" template.
    - Name it something like MaterialChangerDemo.
    - Set the location and click Create.

🎮 Part 2: Create Scene with GameObjects

1. Open SampleScene in the Hierarchy.
2. Add a Plane:
    - Right-click in the Hierarchy → 3D Object → Plane.
    - Rename it to MyPlane.
3. Add a Cube:
    - Right-click in the Hierarchy → 3D Object → Cube.
    - Rename it to MyCube.
    - Move it up: In the Inspector, set Y position to 0.5.
4. Add a Sphere:
    - Right-click in the Hierarchy → 3D Object → Sphere.
    - Rename it to MySphere.
    - Move it up and sideways: set Y = 0.5, X = 2.
5. Add Light and Camera if not already there (usually added by default).

🎨 Part 3: Create Materials and Textures

1. Create a “Materials” folder in the Project window:
    - Right-click in Assets → Create → Folder → Name it Materials.
2. Create 3 Materials:
    - Inside Materials folder → Right-click → Create → Material → Name them:
        - CubeMat
        - SphereMat
        - PlaneMat
3. Change material colors:
    - Select CubeMat → in the Inspector → change Base Map color to Red.
    - Select SphereMat → set color to Blue.
    - Select PlaneMat → set color to Green.
4. Assign Materials:
    - Drag CubeMat onto MyCube.
    - Drag SphereMat onto MySphere.
    - Drag PlaneMat onto MyPlane.
5. Add Textures (Optional):
    - Download any textures (e.g., from textures.com).
    - Import them into Unity: Drag images into Assets.
    - Assign them to Base Map of any material for texture.

👩‍💻 Part 4: Add UI Button for Interaction

1. Add Canvas and Button:
    - Right-click in Hierarchy → UI → Button → Text - Button appears.
    - A Canvas and EventSystem are auto-created.
2. Adjust Button Label:
    - Expand Button → Click Text (Legacy) → Change Text to “Change Materials”.
3. Move Button to corner:
    - Use Rect Tool to drag or reposition it in the Scene view or Inspector.

📜 Part 5: Write a C# Script

1. Create a Scripts folder:
    - In Assets, right-click → Create → Folder → Name it Scripts.
2. Create the Script:
    - Right-click in Scripts → Create → C# Script → Name it MaterialChanger.
3. Attach Script:
    - Drag the script to any GameObject (e.g., the Canvas).
4. Open Script in Visual Studio and paste this:

```
using UnityEngine;

using UnityEngine.UI;


public class MaterialChanger : MonoBehaviour

{

   public GameObject cube, sphere, plane;

   public Material newCubeMat, newSphereMat, newPlaneMat;

   public Button changeButton;


   void Start()

   {

      changeButton.onClick.AddListener(ChangeMaterials);

   }


   void ChangeMaterials()

   {
```

```
        cube.GetComponent<Renderer>().material = newCubeMat;

        sphere.GetComponent<Renderer>().material = newSphereMat;

        plane.GetComponent<Renderer>().material = newPlaneMat;

    }

}
```

🔗 Part 6: Set References in Inspector

1. Click the GameObject with the MaterialChanger script (e.g., Canvas).
2. In the Inspector:
    - Drag MyCube into cube.
    - Drag MySphere into sphere.
    - Drag MyPlane into plane.
    - Drag the new materials you want to apply into newCubeMat, newSphereMat, newPlaneMat.
    - Drag the Button from the Canvas into changeButton.

▶️ Part 7: Test the Scene

1. Click the Play button at the top.
2. Click the button on screen — materials and colors will change dynamically!