**Brief Documentation: 3D Car Off-Roading Challenge**

**1. Car Mechanics Setup:**

Objective: Implement a functional 3D car with realistic driving physics using Unity’s Rigidbody and Wheel Collider components.

* **Implementation Details:**
* **Car GameObject Setup:**
  + Created an empty GameObject named Car.
  + Added a Rigidbody component to the Car GameObject for physics simulation.
  + Created four empty child GameObjects for the wheels (frontLeftWheel,  
    frontRightWheel, rearLeftWheel, rearRightWheel).
  + Added Wheel Collider components to each wheel GameObject.
* **Wheel Collider Configuration:**
  + Configured Wheel Colliders for suspension, friction, and other properties to match realistic car behavior.
* **Car Control Script:**
  + Created a C# script named CarController.
  + Implemented acceleration, braking, and steering functionalities using Unity's input system.
  + Controls Keys:
    - W – Forward movement
    - S – Backward movement
    - A – Left steering
    - D – Right Steering
    - Spacebar – Hand Break

**2. Level Design Elements:**

Objective: Design an off-road level with various obstacles to provide a challenging but navigable path for the car.

* **Implementation Details:**
* **Off-Road Scene Setup:**
  + Created a new scene named OffRoadScene.
* **Terrain Design:**
  + Used Unity's Terrain tools to create an uneven terrain with hills and valleys.
  + Applied textures, trees, and grass to enhance realism.
* **Obstacle Placement:**
  + Placed various obstacles like rocks, speed breakers, and ditches using 3D models and primitive shapes (cubes, spheres).
  + Ensured obstacles were positioned to provide a challenging path without making it impossible to navigate.
* **Testing:**
  + Tested the car in play mode to ensure it could navigate through the terrain and obstacles without getting stuck.

**3. UI Layout and Functionality:**

Objective: Design a main menu UI that resembles the UI of Sniper 3D, focusing on layout rather than functionality.

* **Implementation Details:**
* **Main Menu Layout:**
  + Created a new Canvas in the scene for the UI elements.
  + Added a Panel to the Canvas as a background for better visual organization.
* **UI Arrangement:**
  + Arranged the buttons on the Canvas to resemble the layout shown in the provided image.
  + Positioned and resized buttons to achieve the desired visual design.
* **Button Configuration:**
  + Set the button colors to black and white to keep the design simple.
  + Adjusted the size and position of the buttons to match the layout requirements.