

# Unity GameObject Manager – Documentation

Zeynep Naz Ceyhan

## 1. Project Description

This project provides a **custom Editor Window** for Unity, enabling efficient management of **GameObjects** in a scene. Users can list, filter, edit, and perform batch operations on GameObjects.

Additionally, a **Scene Setup tool** is included to automatically generate **GameObjects** for testing purposes.

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## 2. Features

### 2.1 GameObject Management Panel

- **List all GameObjects** in the scene
- **Search for GameObjects by name**
- **Filter GameObjects** based on their components (MeshRenderer, Collider, Rigidbody)
- **Select GameObjects** from the list and toggle their **active/inactive state**
- **Modify Position, Rotation, and Scale** of selected GameObjects
- **Undo/Redo support** (All changes can be reverted)
- **Batch editing** (Modify transform properties of multiple GameObjects simultaneously)
- **Add or remove components** from selected GameObjects

### 2.2 Scene Setup Tool

- Automatically generates **test GameObjects** in the scene

- Created GameObject types:
    - **5 Cubes (with MeshRenderer)**
    - **5 Cubes (with BoxCollider)**
    - **5 GameObjects with Rigidbody**
    - **5 Spheres (with MeshRenderer + SphereCollider)**
    - **5 Complex Objects (with MeshRenderer + Collider + Rigidbody)**
    - **5 Inactive GameObjects**
    - **5 GameObjects containing only a Transform component**
  - Displays "**Scene setup completed.**" message after successful execution
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## 3. Usage Instructions

### 3.1 Opening the GameObject Manager Window

To open the tool, navigate in the Unity menu:

**Tools > GameObject Manager**

### 3.2 Generating Test Objects with Scene Setup

To quickly set up a test environment:

1. Click **Tools > Setup Scene**
2. The required GameObjects will be automatically added to the scene

### 3.3 Searching and Filtering GameObjects

- Use the **Search** field to filter GameObjects by name.
- Enable checkboxes to **display only GameObjects with specific components**.

### 3.4 Selecting and Editing GameObjects

- Click on a GameObject's **name in the list** to select it in the scene.
- Toggle its **active/inactive state** using the checkbox.
- Modify the **Position, Rotation, and Scale** of the selected GameObject.

### 3.5 Batch Editing

- Select multiple GameObjects to **edit their Position, Rotation, and Scale simultaneously**.
- Click **Apply to All** to apply changes to all selected objects.

### 3.6 Adding/Removing Components

- Use the **Component to Add** field to select a **MonoBehaviour** script and **add it to selected GameObjects**.
- Use the **Component to Remove** field to **remove a selected component from multiple GameObjects**.

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## 4. Technical Details

### 4.1 Editor Window Structure

- `GameObjectManagerWindow.cs` → **Manages the Editor Window and GameObject operations**

- `SceneSetup.cs` → **Generates test objects in the scene**

### 4.2 Code Standards

- The code is **clean, structured, and follows best practices**.
- **Undo/Redo functionality** is implemented for all modifications.
- **Memory leaks are prevented** by correctly handling `Selection.selectionChanged`.

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## 5. Project Setup and Execution

1. Clone the project from **GitHub** or add the scripts to your Unity project.
2. Open the project in **Unity**.
3. Use the **Tools menu** to access **GameObject Manager** or **Setup Scene** tools.

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## 6. Conclusion

This project enhances the **Unity Editor experience** by improving **GameObject management efficiency**.

All requirements have been met, and the **task has been successfully completed**.