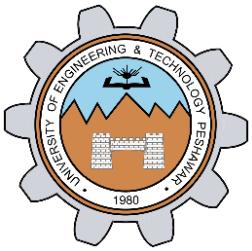
Introduction to C# and Unity API

LAB # 4



Fall 2024

CSE-411L Intro to Game Development Lab

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Registration No.: **21PWCSE2059**

Class Section: **A**

"On my honor, as student of University of Engineering and Technology, I have neither given nor received unauthorized assistance on this academic work."

Submitted to:

Engr. Abdullah Hamid

Date:

21st December 2024

Department of Computer Systems Engineering

University of Engineering and Technology, Peshawar

Objective:

In this lab we will explore the Unity API and Basic C# Code.

Tasks:

- Open/create a Unity scene

- Create 3 cubes

- Color each cube differently

- Apply 3 different scripts on each cube with the following logic

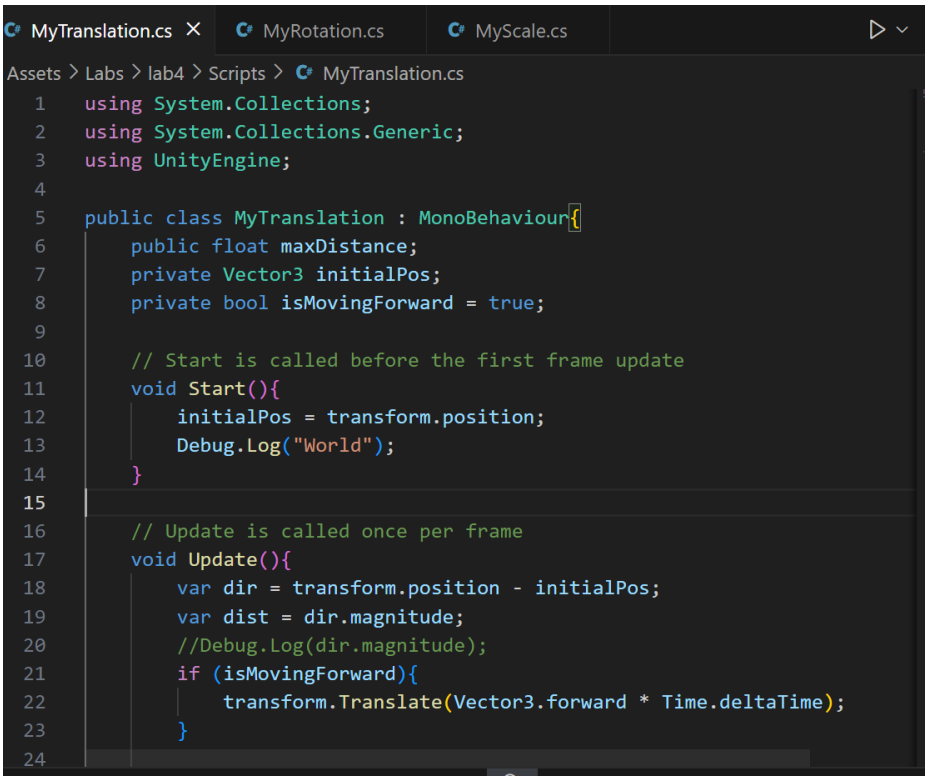
- First cube shall display “Hello” on console and constantly rotate in vector3.up direction

- Second cube shall display “World” on console and start to move in vector3.forward direction and after covering some distance it should stop and comeback to its original position

- Third cube shall display “!” on the console and should increase its scale to 5 and then back to 1 and should constantly keep on increasing and decreasing scale.

Code:

MyTranslation class



```
    void Update(){
        var dist = dir.magnitude;
        //Debug.Log(dir.magnitude);
        if (isMovingForward){
            transform.Translate(Vector3.forward * Time.deltaTime);
        }

        else{
            transform.Translate(-Vector3.forward * Time.deltaTime);

        }

        if (dist > maxDistance){
            isMovingForward = false;
        }

        else if((int)dist == 0f){
            isMovingForward = true;
        }
    }
}
```

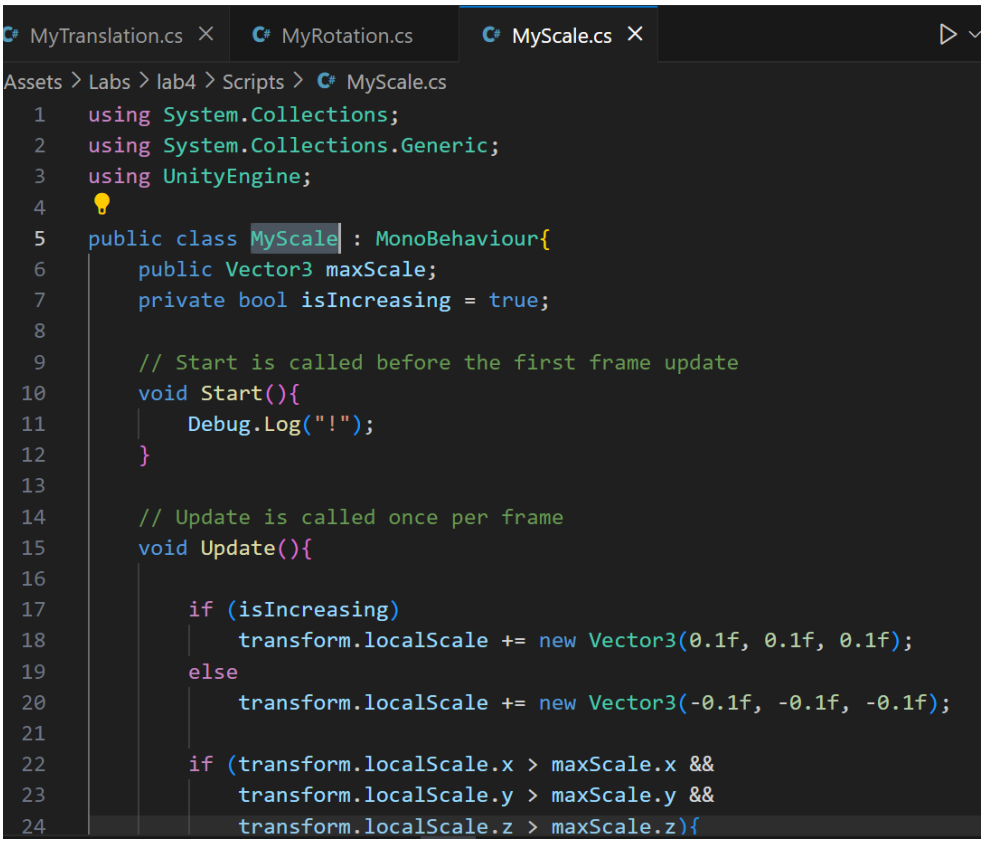
MyRotation class

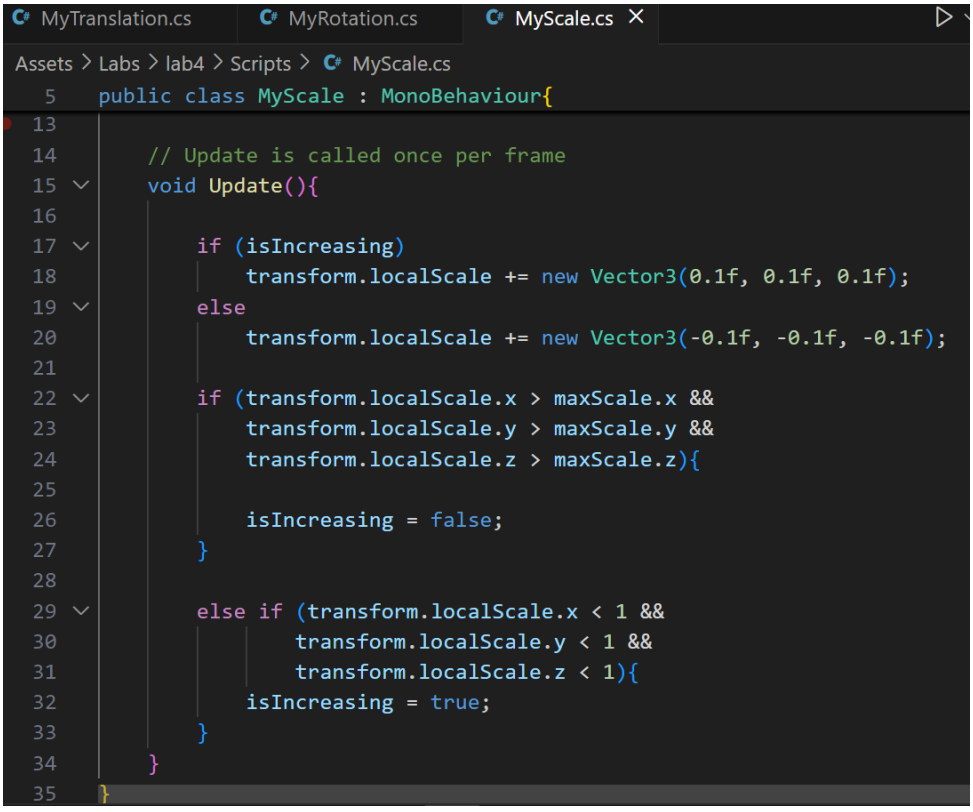
MyTranslation.cs | MyRotation.cs | MyScale.cs

Assets > Labs > lab4 > Scripts > MyRotation.cs

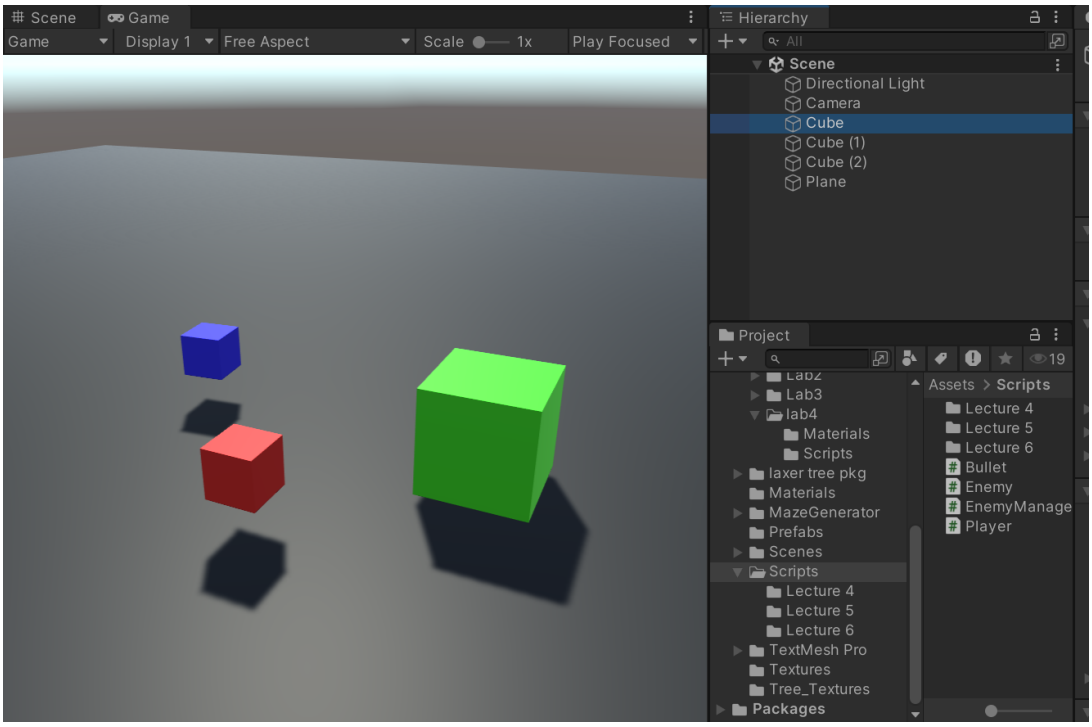
```
using System.Collections;
using System.Collections.Generic;
using UnityEngine;

public class MyRotation : MonoBehaviour{
    // Start is called before the first frame update
    void Start(){
        Debug.Log("Hello");

    }

    // Update is called once per frame
    void Update(){
        transform.Rotate(Vector3.up);
    }
}
```

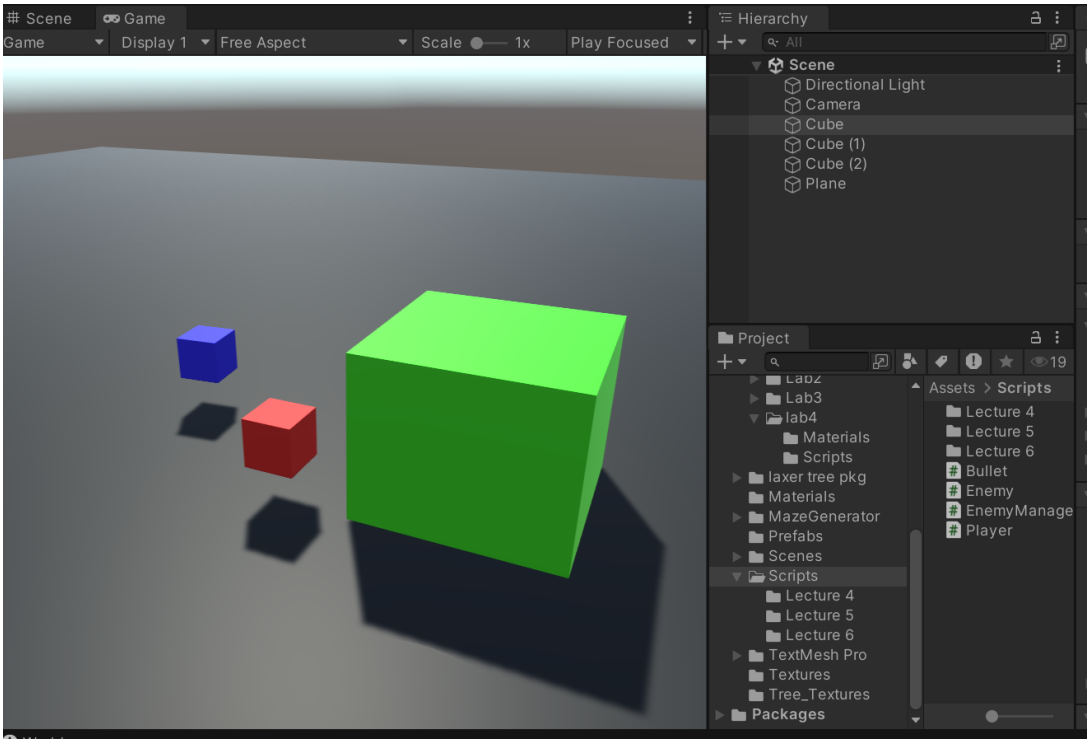
MyScale class





Output:


Scene
Game
Game
Display 1
Free Aspect
Scale
1x
Play Focused
Hierarchy
All
Scene
Directional Light
Camera
Cube
Cube (1)
Cube (2)
Plane
Project
19
Assets
Scripts
Lab2
Lab3
lab4
Materials
Scripts
laxer tree pkg
Materials
MazeGenerator
Prefabs
Scenes
Scripts
Lecture 4
Lecture 5
Lecture 6
TextMesh Pro
Textures
Tree_Textures
Packages
Lecture 4
Lecture 5
Lecture 6
Bullet
Enemy
EnemyManage
Player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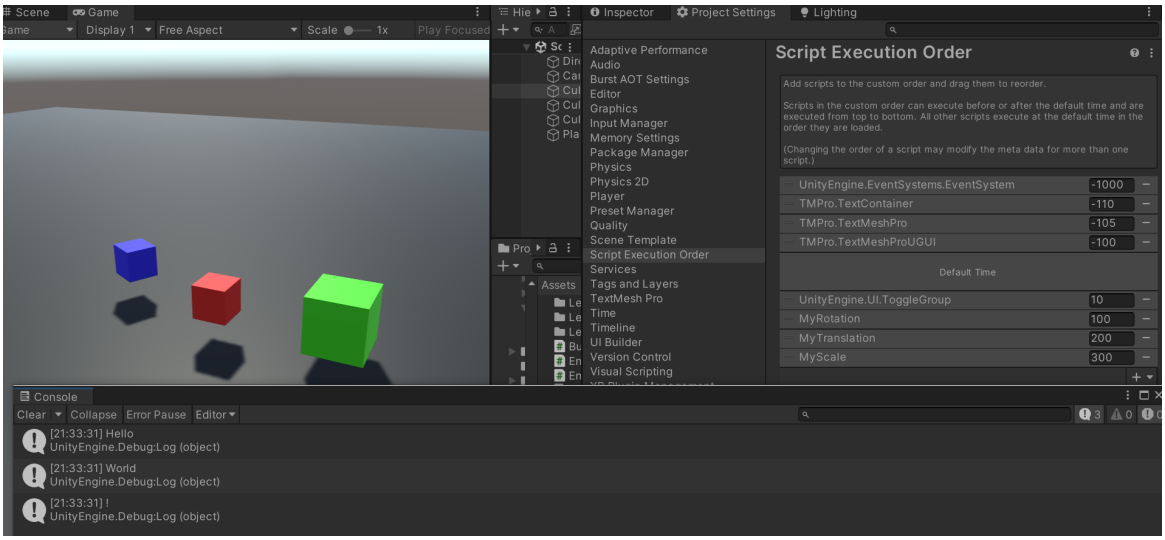
Scene
Game
Display 1
Free Aspect
Scale
1x
Play Focused
Inspector
Project Settings
Lighting
Adaptive Performance
Audio
Burst AOT Settings
Editor
Graphics
Input Manager
Memory Settings
Package Manager
Physics
Physics 2D
Player
Preset Manager
Quality
Scene Template
Script Execution Order
Services
Tags and Layers
TextMesh Pro
Time
Timeline
UI Builder
Version Control
Visual Scripting
Script Execution Order
Add scripts to the custom order and drag them to reorder.
Scripts in the custom order can execute before or after the default time and are executed from top to bottom. All other scripts execute at the default time in the order they are loaded.
(Changing the order of a script may modify the meta data for more than one script.)
UnityEngine.EventSystems.EventSystem -1000
TMPro.TextContainer -110
TMPro.TextMeshPro -105
TMPro.TextMeshProUGUI -100
Default Time
UnityEngine.UI.ToggleGroup 10
MyRotation 100
MyTranslation 200
MyScale 300
Assets
Console
Clear
Collapse
Error Pause
Editor
[21:33:31] Hello
UnityEngine.Debug:Log (object)
[21:33:31] World
UnityEngine.Debug:Log (object)
[21:33:31] !
UnityEngine.Debug:Log (object)