Introduction to Game Development

LAB-1

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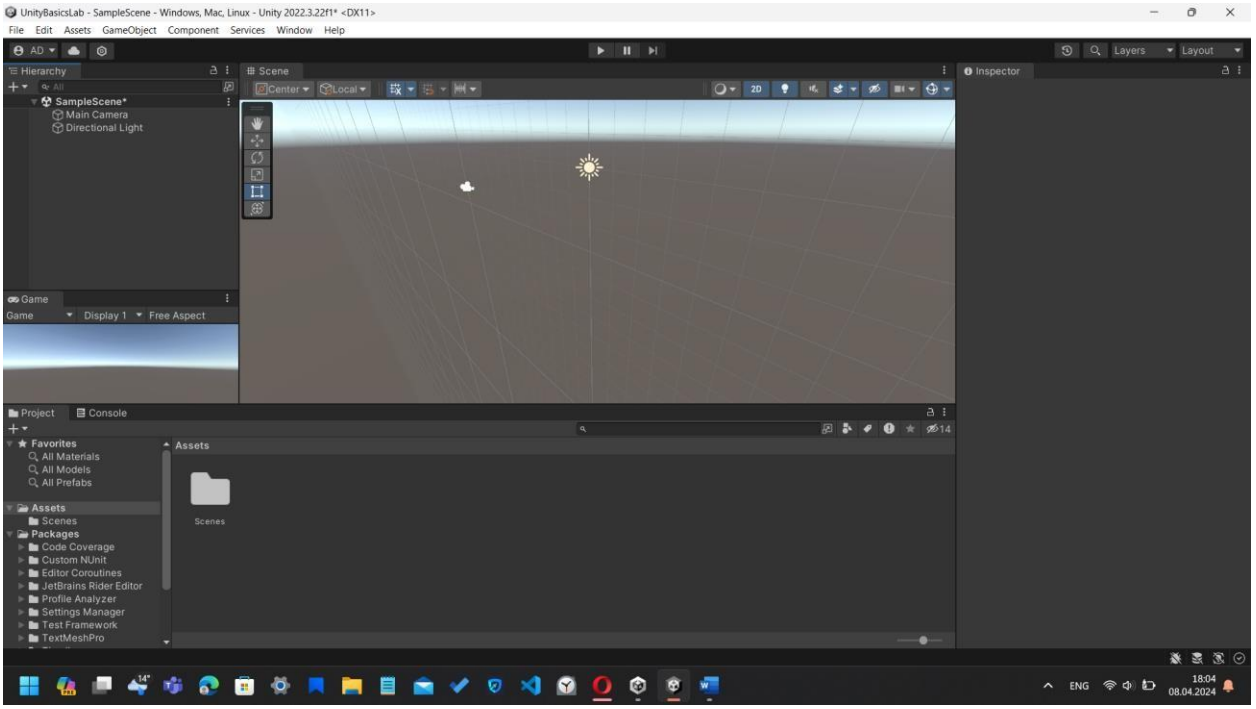
Group: SE-2211

Link to the project : https://github.com/AlikhanMDos/UnityBasicsLab

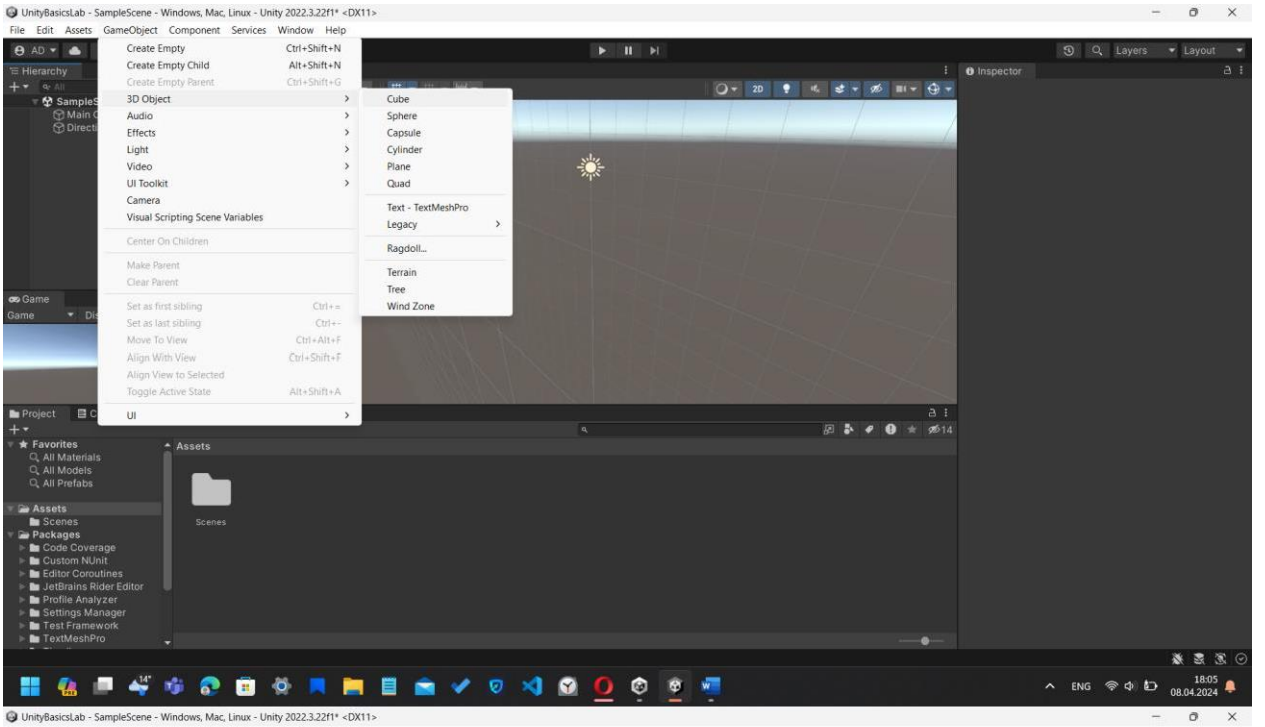
Documentation:

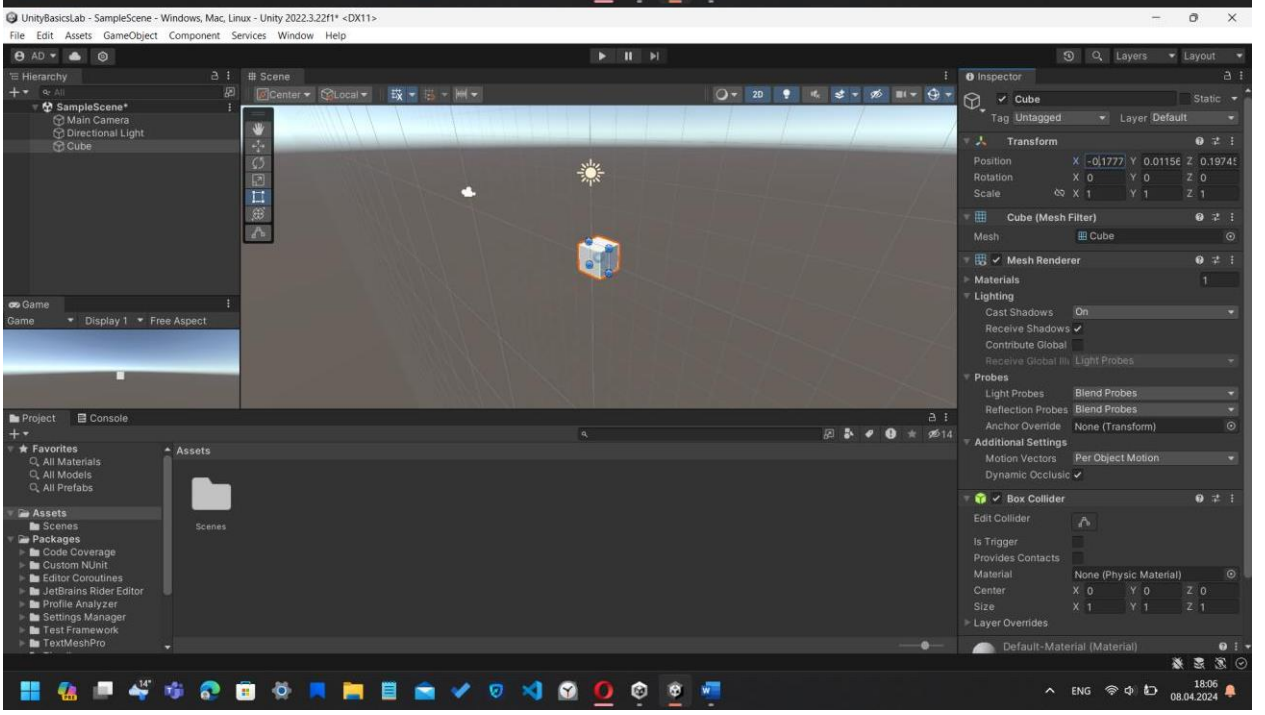
Unity Scene Setup:

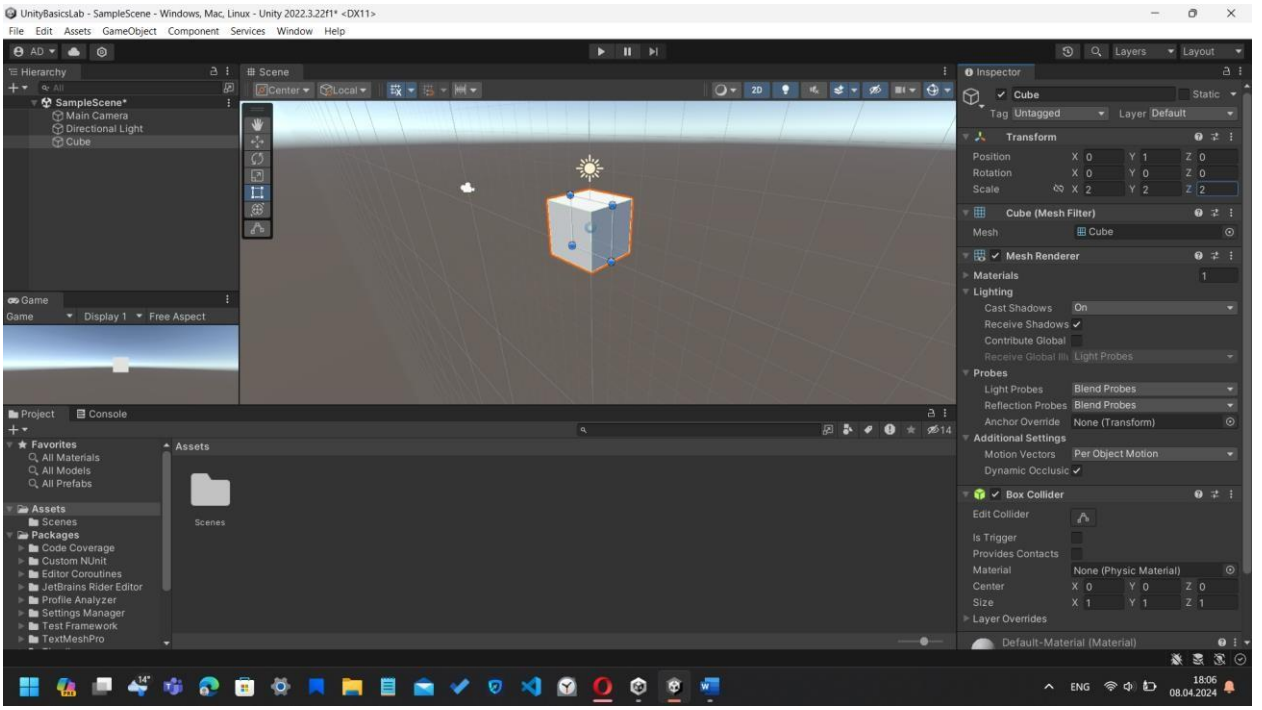
- Created a new Unity project named "UnityBasicsLab".



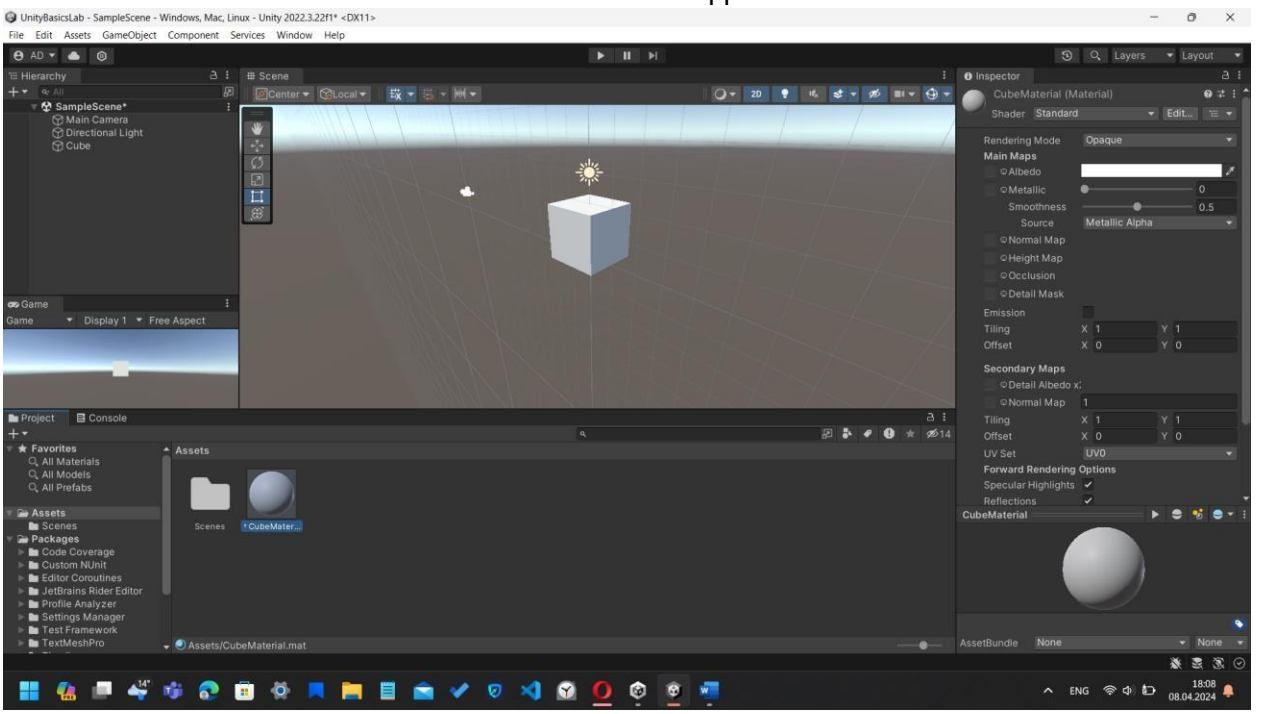
- In the scene, a cube GameObject was created, positioned at coordinates (0, 1, 0), and scaled to (2, 2, 2).

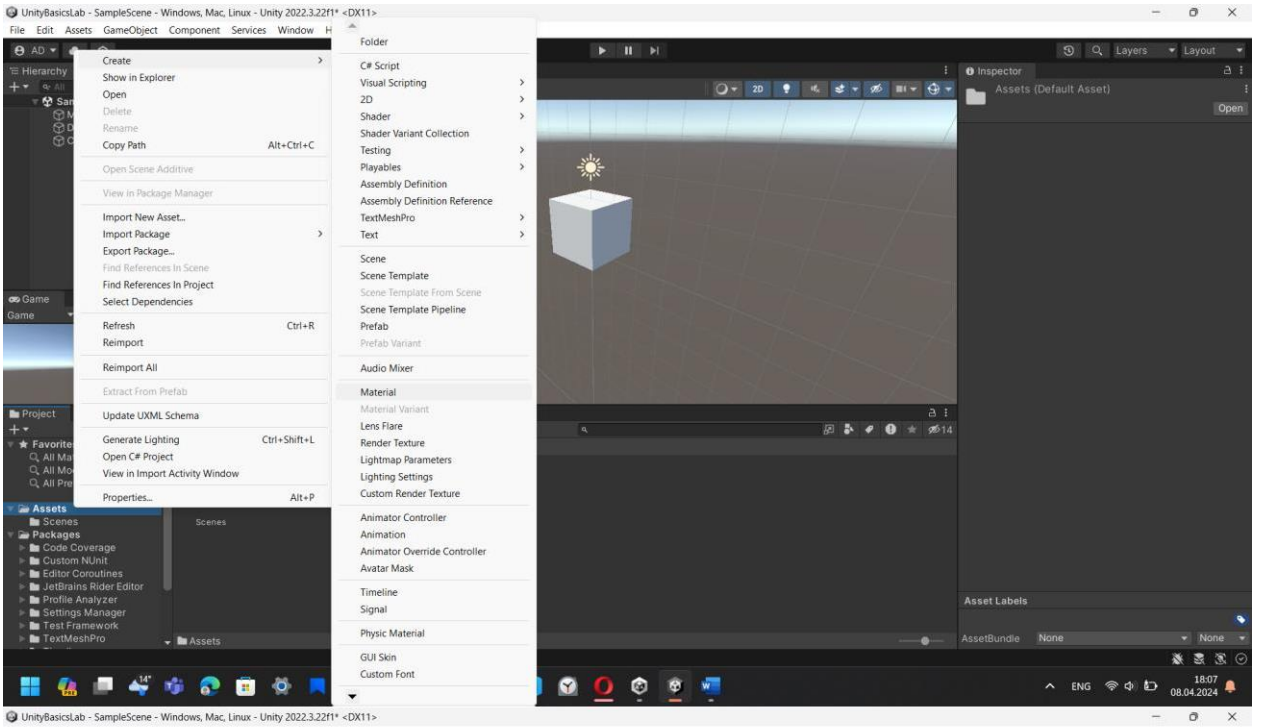

UnityBasicsLab - SampleScene - Windows, Mac, Linux - Unity 2022.3.22f1* <DX11>
File Edit Assets GameObject Component Services Window Help
Create Empty Ctrl+Shift+N
Create Empty Child Alt+Shift+N
Create Empty Parent Ctrl+Shift+G
3D Object
Audio
Effects
Light
Video
UI Toolkit
Camera
Visual Scripting Scene Variables
Center On Children
Make Parent
Clear Parent
Set as first sibling Ctrl+=
Set as last sibling Ctrl+-
Move To View Ctrl+Alt+F
Align With View Ctrl+Shift+F
Align View to Selected
Toggle Active State Alt+Shift+A
UI
Cube
Sphere
Capsule
Cylinder
Plane
Quad
Text - TextMeshPro
Legacy
Ragdoll...
Terrain
Tree
Wind Zone
Hierarchy
Inspector
Project
Favorites
All Materials
All Models
All Prefabs
Assets
Scenes
Packages
Code Coverage
Custom NUnit
Editor Coroutines
JetBrains Rider Editor
Profile Analyzer
Settings Manager
Test Framework
TextMeshPro
ENG
18:05
08.04.2024

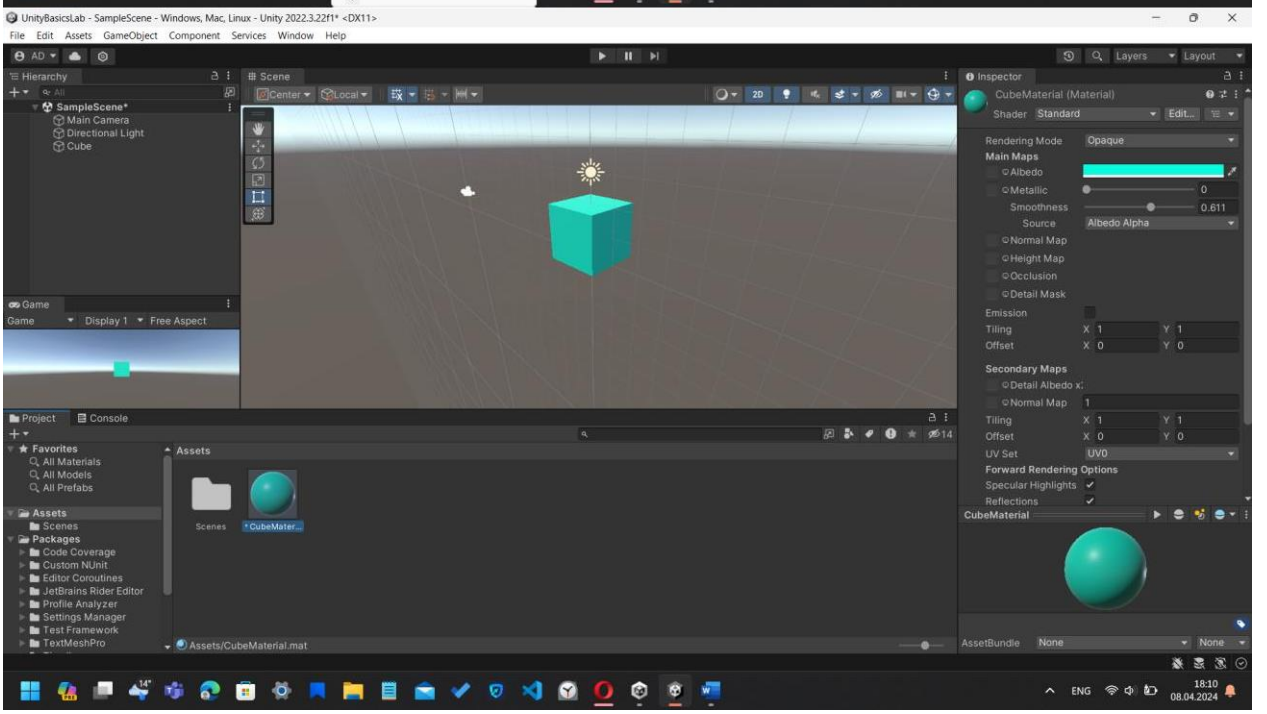

UnityBasicsLab - SampleScene - Windows, Mac, Linux - Unity 2022.3.22f1* <DX11>
File Edit Assets GameObject Component Services Window Help
Hierarchy
SampleScene*
Main Camera
Directional Light
Cube
Scene
Game
Display 1
Free Aspect
Inspector
Cube
Tag Untagged
Layer Default
Transform
Position
Rotation
Scale
Cube (Mesh Filter)
Mesh
Mesh Renderer
Materials
Lighting
Cast Shadows
Receive Shadows
Probes
Light Probes
Reflection Probes
Anchor Override
Additional Settings
Motion Vectors
Box Collider
Edit Collider
Is Trigger
Provides Contacts
Material
Center
Size
Layer Overrides
Default-Material (Material)
Project
Console
Favorites
Assets
Scenes
Packages
ENG
18:06
08.04.2024



- A new material named "CubeMaterial" was created and applied to the cube.




UnityBasicsLab - SampleScene - Windows, Mac, Linux - Unity 2022.3.22f1* <DX11>
File Edit Assets GameObject Component Services Window H
Create
Show in Explorer
Open
Delete
Rename
Copy Path Alt+Ctrl+C
Open Scene Additive
View in Package Manager
Import New Asset...
Import Package
Export Package...
Find References In Scene
Find References In Project
Select Dependencies
Refresh Ctrl+R
Reimport
Reimport All
Extract From Prefab
Update UXML Schema
Generate Lighting Ctrl+Shift+L
Open C# Project
View in Import Activity Window
Properties... Alt+P
Folder
C# Script
Visual Scripting
2D
Shader
Shader Variant Collection
Testing
Playables
Assembly Definition
Assembly Definition Reference
TextMeshPro
Text
Scene
Scene Template
Scene Template From Scene
Scene Template Pipeline
Prefab
Prefab Variant
Audio Mixer
Material
Material Variant
Lens Flare
Render Texture
Lightmap Parameters
Lighting Settings
Custom Render Texture
Animator Controller
Animation
Animator Override Controller
Avatar Mask
Timeline
Signal
Physic Material
GUI Skin
Custom Font
Hierarchy
Project
Game
Inspector
Assets (Default Asset)
Open
Asset Labels
AssetBundle None None
Packages
Code Coverage
Custom NUnit
Editor Coroutines
JetBrains Rider Editor
Profile Analyzer
Settings Manager
Test Framework
TextMeshPro
ENG 18:07 08.04.2024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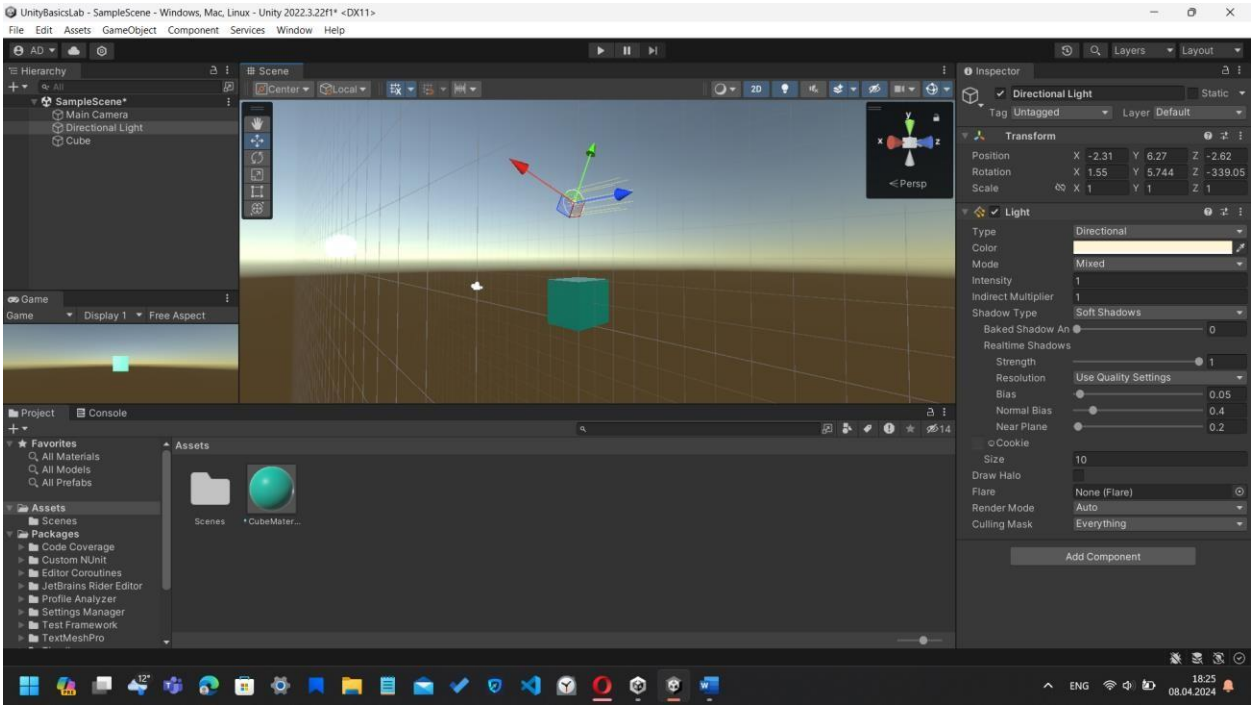
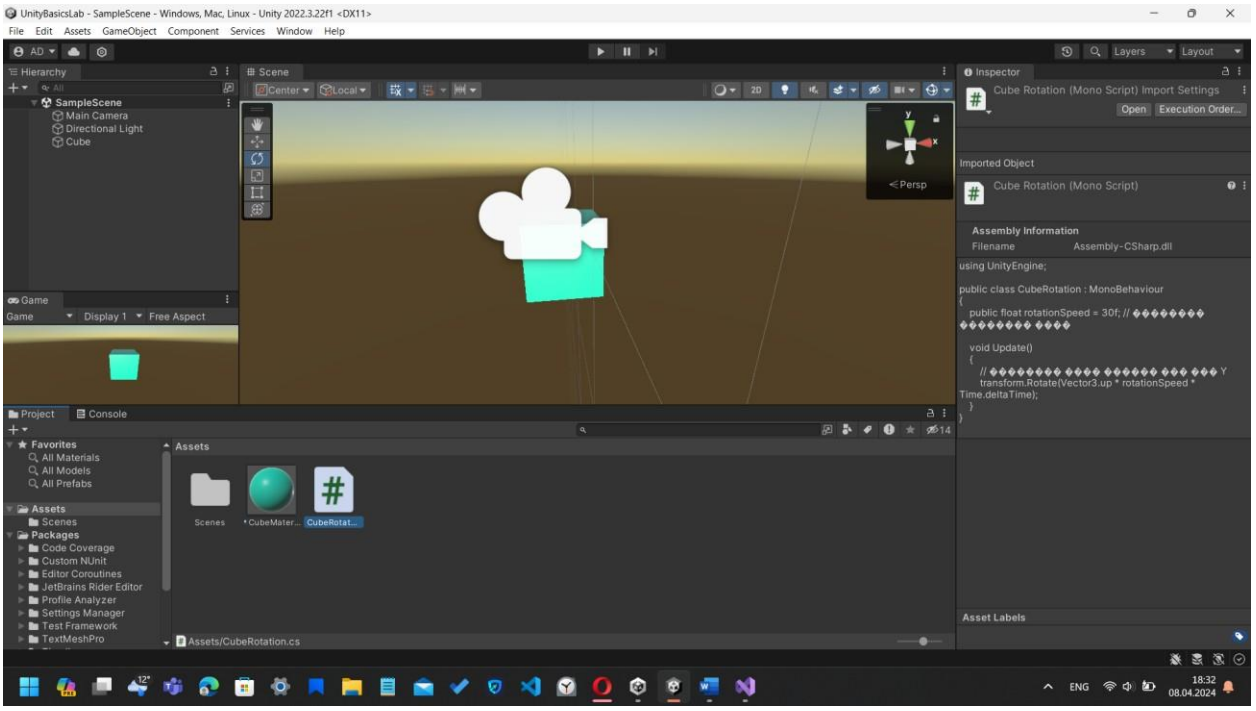
Hierarchy
SampleScene*
Main Camera
Directional Light
Cube
Scene
Game
Display 1 Free Aspect
Project
Console
Favorites
All Materials
All Models
All Prefabs
Assets
Scenes
*CubeMater...
Assets/CubeMaterial.mat
Inspector
CubeMaterial (Material)
Shader Standard Edit...
Rendering Mode Opaque
Main Maps
Albedo
Metallic 0
Smoothness 0.611
Source Albedo Alpha
Normal Map
Height Map
Occlusion
Detail Mask
Emission
Tiling X 1 Y 1
Offset X 0 Y 0
Secondary Maps
Detail Albedo x
Normal Map 1
UV Set UV0
Forward Rendering Options
Specular Highlights
Reflections
CubeMaterial
AssetBundle None None
ENG 18:10 08.04.2024

- A directional light source was added and configured to achieve the desired lighting effect.



- A camera was added and set up to view the entire cube.



Script's Code:

```
us ng Un tyEng ne;

public class CubeRotat on : MonoBehaviour
{
    publ c float rotat onSpeed = 30f; // Скорость вращения куба

    vo d Update()
    {
        // Вращение куба вокруг его оси Y
```

```
        transform.Rotate(Vector3.up * rotat onSpeed * T me.deltaT me);
    }
}
```

Challenges Faced and Outcomes:

- Writing the script was relatively straightforward thanks to the use of Unity's built-in methods.
- The main challenge was setting up the scene to achieve the desired visual lighting and object positions.
- After completing the scene setup and writing the script, we successfully tested the project and ensured that the cube rotates correctly.