



DAY 2 AR Foundation

PART 1 – SETUP

Create a new project with version 2020.1 Include android or ios build support for the version

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Select Packages: Unity Registry and install the following packages: AR foundation 4.1.7 ARCore 4.1.7 (Android) ARKit XR Plugin 4.1.7 (IOS)

If it doesn't show newer versions, select the "See other versions" option

Package Manager		: • ×
+ ▼ Packages: Unity Registry		
Analytics Library	3.5.3	AR Foundation
AR Foundation	3.1.10	Unity Technologies
	4.1.7	Version 4.1.7 - April 08, 2021
	3.1.10 Verified	View documentation • View changelog • View licenses
S	ee other versions	A collection of Man Debautours and Off utilities for used in multi-AD Cubaustones
ARCore XR Plugin	4.1.7 🗸	A collection of MonoBehaviours and C# utilities for working with AR Subsystems.
ARKit Face Tracking	3.1.10	Includes: More
ARKit XR Plugin	3.1.10	Registry Unity
Quick Search	1.5.4	
WebGL Publisher	4.2.2	
Last update Apr 20, 08:15	C	Install





Open up the build settings Change the platform to android Add the current scene to open scenes

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Under Player settings, go to Other settings

sana - PlaneDetection - PC, Mac & Linux Standalone - Unity 2020.1.17f1 Assets GameObject Component Window Help	Personal <dx11></dx11>				- 🗆 ×		
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Remove Vulcan and set the minimum API level to Android 7.0

	-
Graphics APIs	
= OpenGLES3	
	+
Bundle Version Code	1
Minimum API Level	Android 7.0 'Nougat' (API 🔻
Target API Level	Automatic (highest install 🔻

XR Plug-in Management>check ARCore (NOT UNDER PLAYER SETTINGS)



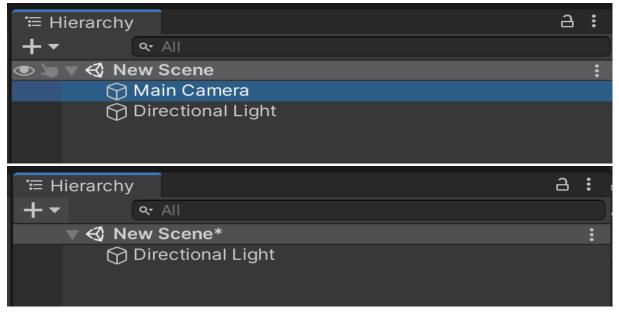


Bundle Version Code	1		
Minimum API Level	Android 7.0 'Nougat' (API 🔻]		
Target API Level	Automatic (highest install 🔻		

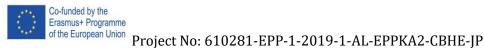




In the main scene remove the camera

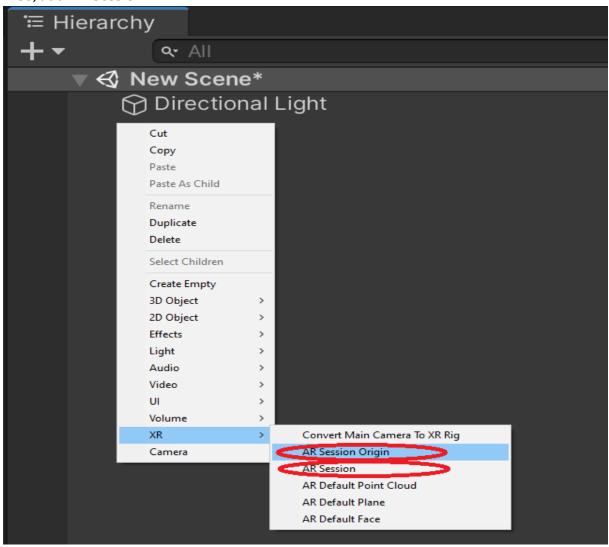


add>XR>AR Session Origin (that adds the camera)

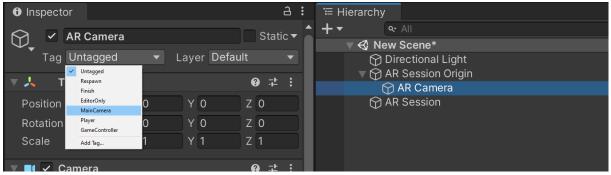




Also, add AR Session



Set AR Session Origin/AR Camera to the main camera



Select AR session origin Click Add Component Add ar raycast manager Add a plane manager



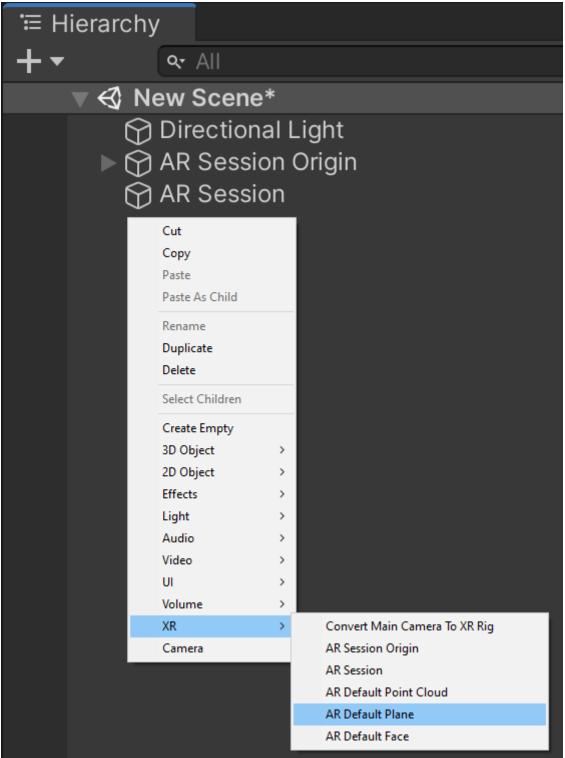


AR Session Origin Transform A AR Session Origin Layer Default A AR Session Origin A AR Occlusion Manager A AR Participant A AR Participant A AR Plane A AR P	Co-funded by the Erasmus+ Programme of the European Union	Project No: 610281-I	EPP-1-2	019-	-1-AL-EPPKA2-CBHE-JP	RTUAL Indlogies Nealkan Unversites
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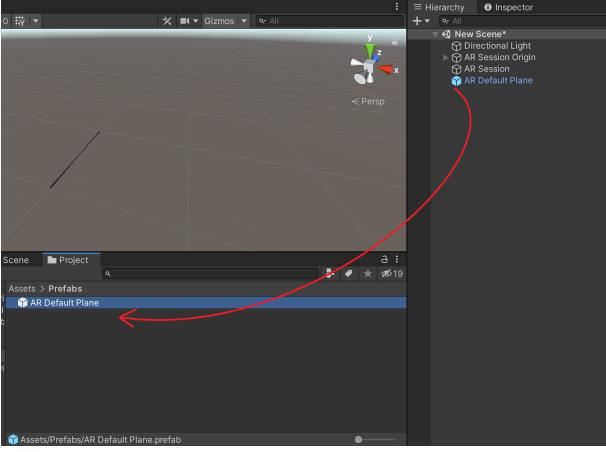
Greate AR default plane



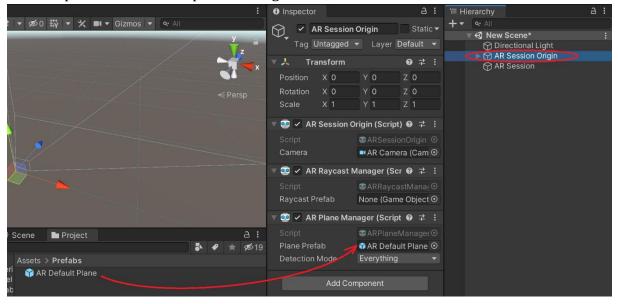




Click and drag the AR Default Plane into the Project window Then delete the AR Default Plane from the Scene



Add the prefab into the AR plane manager







Set plane manager to horizontal

BUILD AND RUN THE CODE





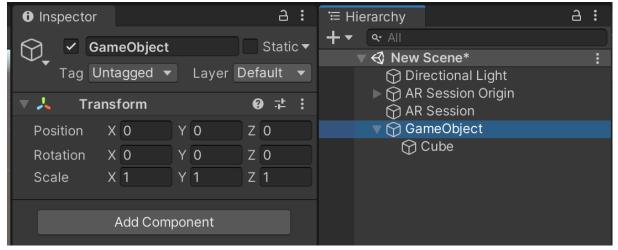
PART 2 – INTERACTION IN AR

Create an Empty object

Select it and create a Cube object inside the empty "GameObject"

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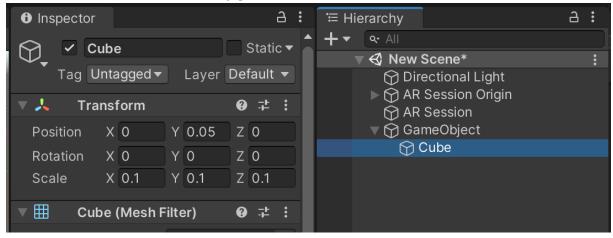
Set the position of the empty game object to 0,0,0



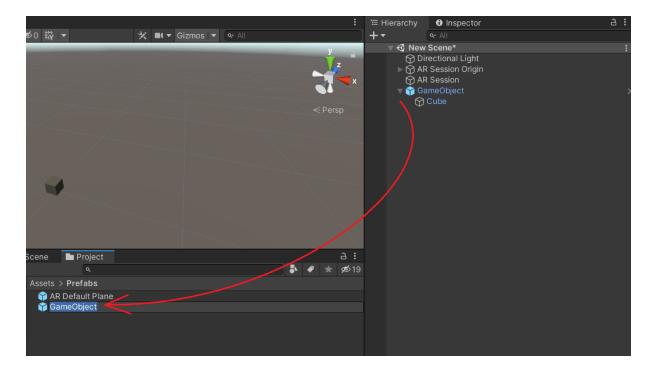




Scale the cube to 0.1 and set the y position to 0.05



Save it as a prefab just like with the AR Default Plane Then delete it from the Scene

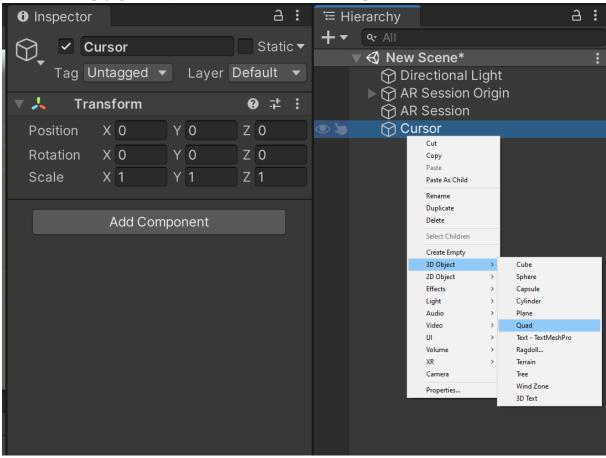




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Create an empty gameobject and name it Cursor and put a Quad in it



Rotate quad 90 in the x-axis and scale it down to 0.1

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Create a new material in your project window and name it to cursor material

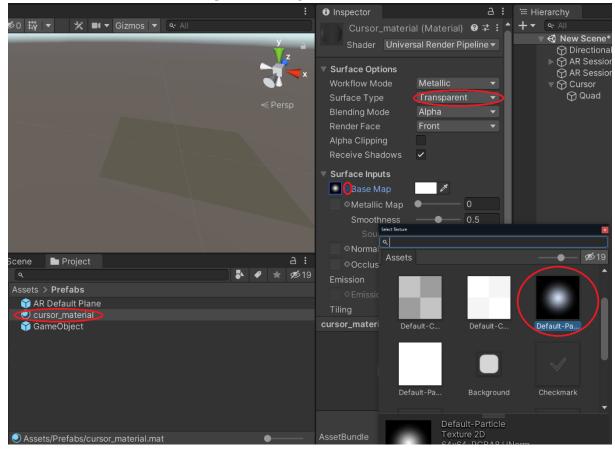
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Select the material, set t Transparent, and give it a texture







Then drag and drop the material onto the Quad in the Scene

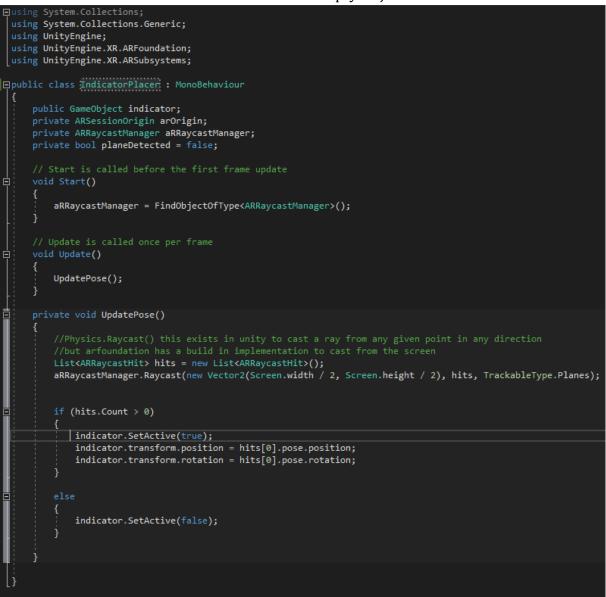
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Create another empty object in the Scene and name it ObjectPlacer

Write IndicatorPlacer code and attach it to an empty ObjectPlacer



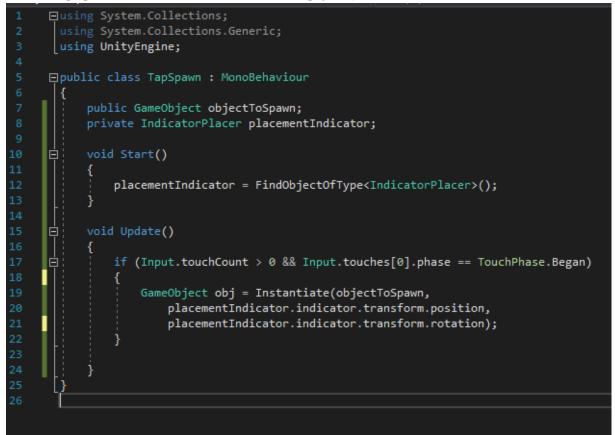
Drag and drop the Cursor object in the scene into the "indicator" field



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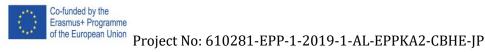


Write TapSpawn code and attach it to an empty ObjectPlacer



Drag and drop the GameObject prefab we created into the "objectToSpawn" field

BUILD AND RUN THE CODE





PART 3 - AR ANCHORS

Duplicate the current scene by selecting the Scene in the project window CTRL+D and double-click on it

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Delete the cursor from the scene and delete AR Plane manager + AR Raycast manager from the AR Session Origin (The ones that we had added previously)





Select AR session origin Add ar anchor manager

Add ar anchor manager				
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Create an empty and add a line renderer to it

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add material and color to the line





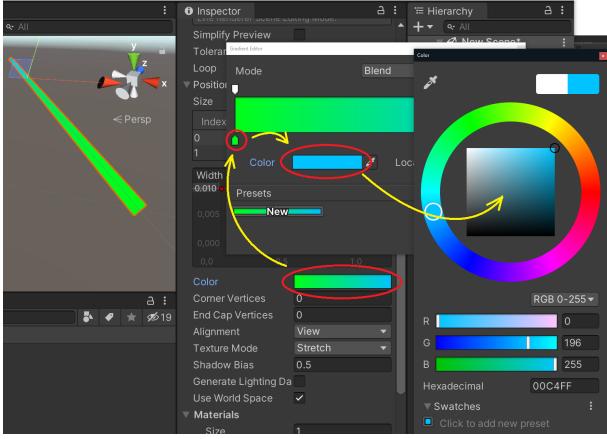
Co-funded by the Erasmus+ Programme of the European Union Project No: 610281-EPP-1-2019-1-AL-EPPKA2-CBHE-JP

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Set the number of points to 0





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Save as a prefab just like with the previous times





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Create a DrawManager script

```
□using System.Collections;
   using UnityEngine;
   using UnityEngine.XR.ARFoundation;
  using UnityEngine.XR.ARSubsystems;
 public class DrawManager : MonoBehaviour
      private Camera arcamera;
public GameObject linePrefab;
      GameObject line;
      Vector3 prevPosition;
          arcamera = Camera.main;
      void Update()
          if (Input.touchCount > 0)
{
              Draw();
      private void Draw()
          Vector3 position = arcamera.ScreenToWorldPoint(new Vector3(Screen.width / 2, Screen.height / 2, 0.3f));
          if (Input.touches[0].phase == TouchPhase.Began)
{
               line = Instantiate(linePrefab, position, Quaternion.identity);
line.AddComponent<ARAnchor>();
          }
              AddPointToLine(position);
      private void AddPointToLine(Vector3 position)
if (prevPosition == null)
              prevPosition = position;
           if (Vector3.Distance(position, prevPosition) > 0.1) ;
              prevPosition = position;
              LineRenderer renderer = line.GetComponent<LineRenderer>();
              renderer.positionCount += 1;
renderer.SetPosition(renderer.positionCount - 1, position);
  ]}
```

And add it to a new empty object in the scene Drag and drop the line prefab we just created into the "linePrefab" field

BUILD AND RUN THE CODE