AR Text App – Project Summary Report

What I Did:

I developed a basic Augmented Reality (AR) application using Unity and AR Foundation to display a text element in AR space. The app initializes ARCore, scans the environment using the camera, and places a “Hello, AR World!” text message 1 meter in front of the user’s view. I used Unity’s AR Session and AR Session Origin to enable AR tracking, and TextMeshPro for UI text rendering.

How I Handled the Camera Positioning:

I deleted Unity's default Main Camera and replaced it with the AR Camera included in the AR Session Origin object. This camera is automatically tracked and positioned by AR Foundation. To place the text visibly in AR space, I attached it as a child of the AR Camera and set its local position to (0, 0, 1), which places it 1 meter in front of the user. Additionally, I implemented a "Billboard" script to ensure the text always faces the camera using transform.LookAt(Camera.main.transform).

Issues Encountered and How I Solved Them:

ADB Not Recognized: Initially, the adb command was not recognized. I fixed this by downloading the Android SDK Platform Tools and adding the folder path to the system environment variables.

Device Not Detected: My Android device wasn’t showing up in adb devices. I enabled USB debugging, changed the USB mode to File Transfer (MTP), and authorized the connection from my phone.

Build Failed Due to Vulkan: Unity threw a BuildFailedException because Vulkan graphics API isn’t supported by ARCore. I solved this by disabling Vulkan and using only OpenGLES3 in the Player Settings.

Text Not Facing User: To address this, I used a custom Billboard script that makes the text dynamically rotate to always face the camera.