Extended Reality (XR) Capstone - Transition Documentation

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Download and Installation Instructions

1. Download and install the Epic Games Launcher
    a. Open the launcher and create or log in to your Epic Games account.
    b. Navigate to the Unreal Engine tab and click the Install button to download the most recent Unreal Engine version.
2. Download and install Android Studio 4.0
    a. (This will be used to build APK and uploaded to hardware).
    b. Agree to any terms and conditions.
    c. Scroll to Android Studio Release Candidate 4 (May 28, 2020).
    d. Download the installer for your device.
3. Download and install the Oculus PC App
    a. Launch the app and follow through the installation process.
    b. Connect the Oculus headset to the app [Recommended: Link (Cable)].
    c. Follow the on-screen instructions to connect your headset.
4. Download and install Visual Studio Code
    a. Launch the Setup and follow the on-screen instructions.
    b. Install the Python extension for Visual Studio Code.
5. Download and install Python
    a. Check box “Add python.exe to PATH”

6. Install the NumPy and PySpice libraries through the command prompt
    a. CMD: pip install numpy
    b. CMD: pip install pyspice
    c. CMD: pyspice-post-installation --install-ngspice-dll --ngspice-version=32
7. Download and Install GitHub Desktop
    a. Launch the Setup and follow the on-screen instructions.

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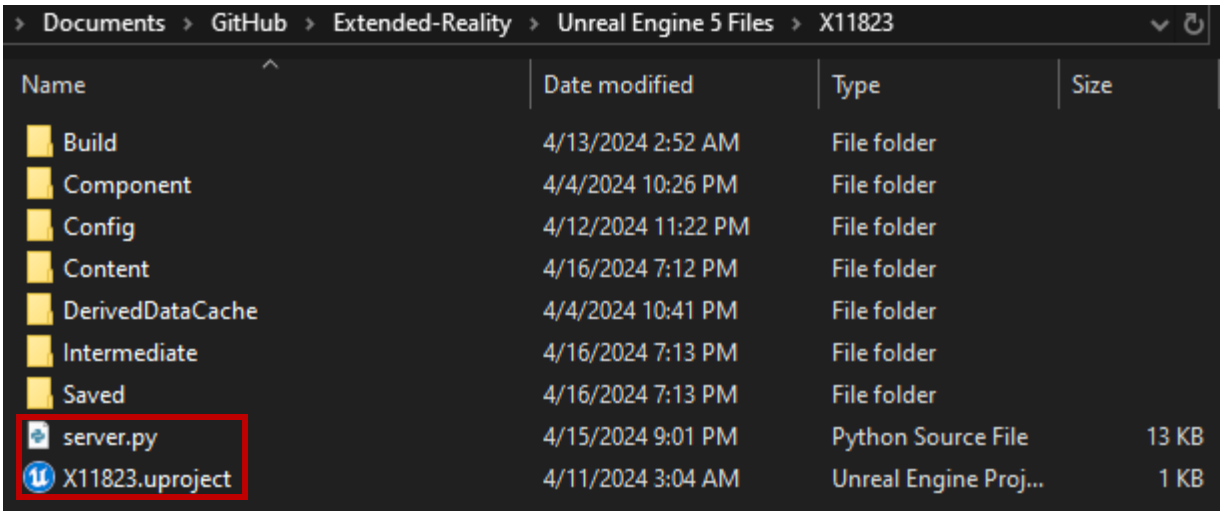
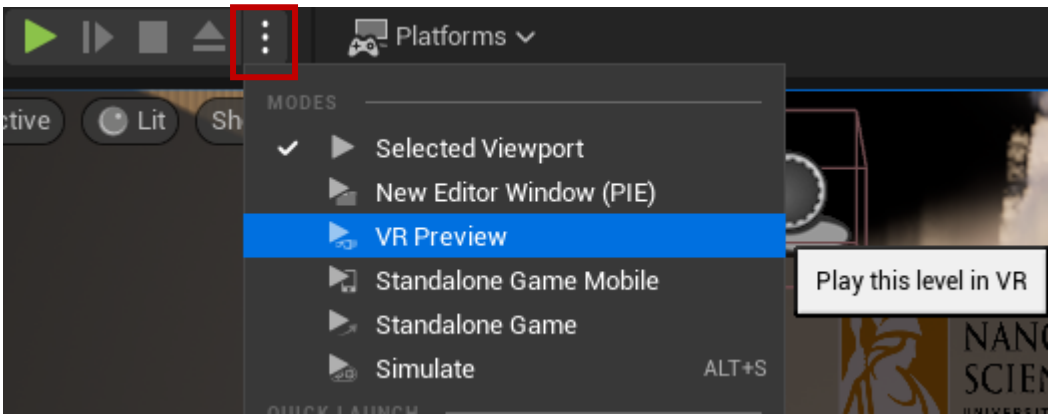
Steps to Start Running the Project

Video Tutorial

1. Launch GitHub Desktop and clone the Extended-Reality repository.
2. Locate the local repository and in the “X11823” project folder run the .uproject file.
3. Open the server.py file Visual Studio Code and run the Python file.



4. Launch the Meta Quest Link app and connect your Oculus Headset
5. In the UE5 project, from the Level Editor Toolbar buttons, click on the Play dropdown button to display the Play Options dropdown menu.



6. Select VR Preview and click the Play button to begin a Play In Editor (PIE) session and test gameplay through the headset viewport.

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Requirements/Recommendations

- Meta Quest Link Requirements
    - Window PC Requirements

Component	Minimum Specifications
Processor	Intel i5-4590 / AMD Ryzen 5 1500X or greater

Graphics Card	See GPU tables below
Memory	8 GB+ RAM
Operating System	Windows 10, Windows 11
USB Ports	1x USB port
	Recommended Specifications
Processor	Intel i7 / AMD Ryzen 7
Graphics Card	Nvidia RTX 20 Series / AMD Radeon RX 6000 Series
Memory	16 GB DDR4 RAM
Operating System	Windows 10, Windows 11
USB Ports	1x USB-C port

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Download Links

Epic Games Launcher

Oculus PC app

GitHub Desktop

Autodesk Fusion 360

Android Studio 4.0

Visual Studio Code

Python

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Unreal Engine 5 Plugins

TCP Socket Plugin

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Documentation References

Unreal Engine 5.3 Documentation (or latest)

UE5 Introduction to Blueprints

Level Editor

In-Editor Testing (Play & Simulate)

Set up Meta Quest Link

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Video References

Installing Unreal Engine | Unreal Engine

How To Use VIRTUAL REALITY In Unreal Engine 5 | Beginner Tutorial

PySpice - Part 1: Introduction & Disscussion