COMP280-Multiplayer Game Programming

Lab 1

Contents

1. Purpose: Set up the environment to be used during the course.

1.1. Technical requirements

We are going to use Unreal Engine 5.4. The Unreal Engine Editor may be very demanding in terms of hardware prerequisites. However, we'll focus on game programming than on real-time visual effects.

1.1.1 Pre-requisite knowledge

You should already have some knowledge about Unreal Engine development. As such, you should already be familiar with the following topics:

- The Epic Games Launcher and the Unreal Engine Editor
- Blueprint classes and Blueprint programming
- C++ programming with your IDE of choice
- A minimum level of understanding of C++ programming with Unreal Engine.

1.1.2 Hardware and software requirements

1.1.2.1 Hardware requirements

- Windows OS: Operating System: Windows 10 64-bit version 1909 revision .1350 or higher, or versions 2004 and 20H2 revision .789 or higher
- Processor: Quad-core Intel or AMD, 2.5 GHz or faster
- Memory: 8 GB RAM
- Graphics Card: DirectX 11- or 12-compatible graphics card

1.1.2.2 Software requirements

- Epic Games Launcher and
- Unreal Engine 5[.4 , although lower versions might work] installed and fully working on your computer.
- Visual Studio 2022

1.1.3 Setting up Visual Studio for Unreal Engine development

Once you have Visual Studio installed, you'll need the following extra components to make it properly work with Unreal Engine:

- C++ profiling tools
- C++ AddressSanitizer
- Windows 10 SDK
- Unreal Engine installer

To include these tools, follow these steps:

1. Open Visual Studio Installer.
2. Select Modify from your own Visual Studio installation, selecting the version you will be using.
3. Once the Modifying modal window opens, in the top bar, make sure you are in the Workloads section.
4. Then, activate the Game development with C++ option by clicking the checkmark.
5. Next, if it is closed, open Installation details | Game development with C++ | Optional from the right sidebar.
6. Select C++ profiling tools, C++ AddressSanitizer, the latest Windows 10 SDK version available, and Unreal Engine installer.
7. Click the Install while downloading button (or the Download all, then install button) to start the installation process.

Once the download and installation process is finished, you will be ready to develop your own C++ games with Unreal Engine.

1.1.4 IDE support for Unreal Engine

Microsoft has an Unreal Engine integration extension for Visual Studio 2022 called IDE Support for Unreal Engine. This tool adds some new features such as Blueprint references, Blueprint assets, and CodeLens hints on top of Unreal Engine classes, functions, and properties. To include this tool, follow these steps:

1. Open the Workloads section if it has been closed.
2. Activate the Game development with C++ option by clicking the checkmark.
3. If it is closed, open Installation details | Game Development with C++ | Optional from the right sidebar.
4. Select IDE support for Unreal Engine

5. Now install the tool.