

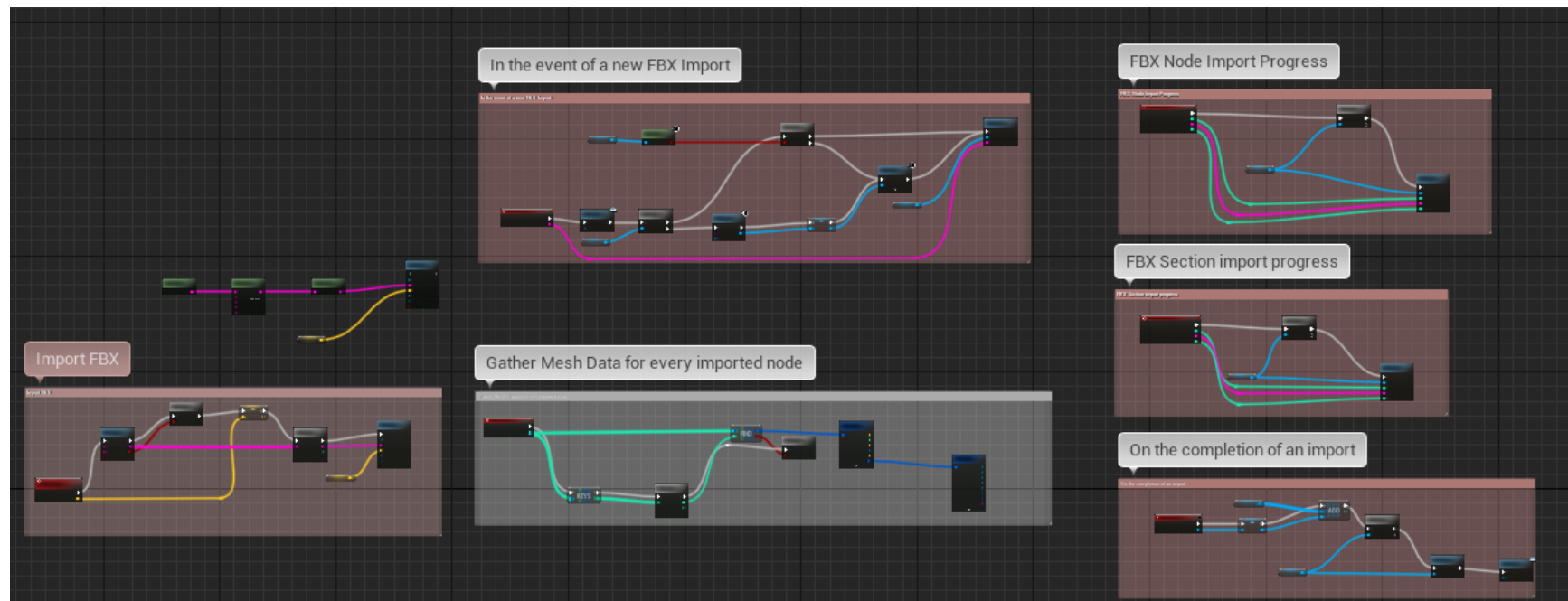
CS11: 3D Scanning of Large Spaces

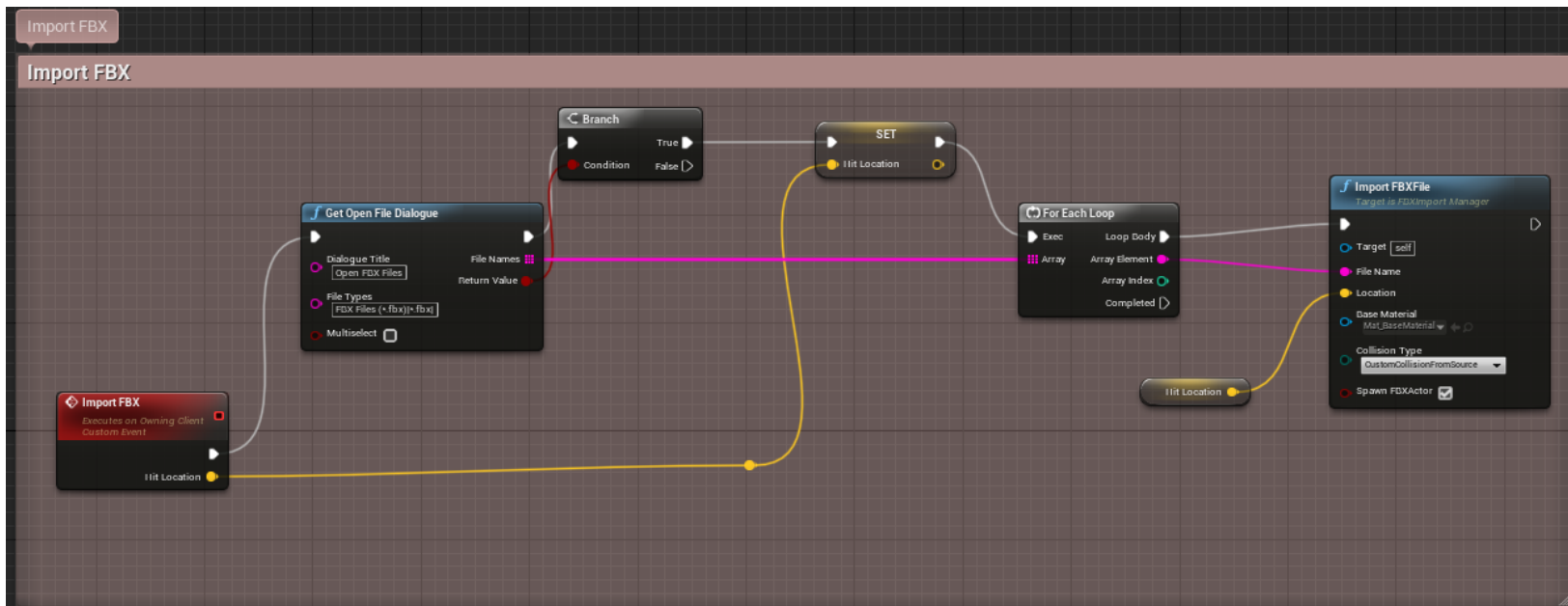
4/16/2021 Meeting

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Unreal Engine Plugin :

- The plugin now successfully imports FBX files into the Unreal Engine in real time.
- Overall plugin structure :

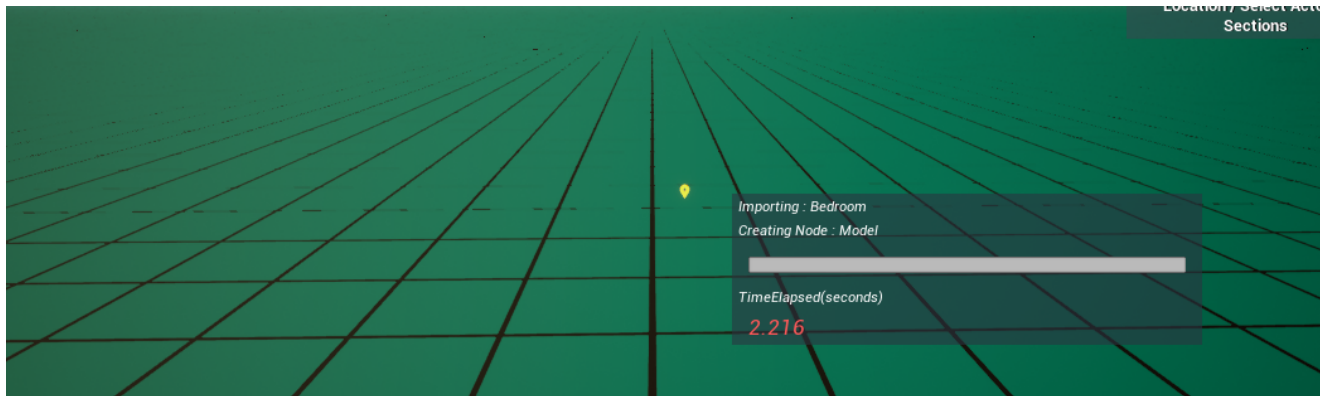




It then uses Unreal Engine classes to start the importing progress. The plugin opens up the directory for the user and displays files only with the FBX extension. Once a correct FBX file is chosen it will then invoke the built-in FBX importing tool that is provided by the Unreal Engine.

The FBX from a given file pathway is seen by this class as a group of nodes. Each individual node has a corresponding FBX mesh that contains unique material sections and coordinates. Each of these sections are generated as meshes by the built-in importing tool which helps it be displayed (in the Unreal Engine viewfinder) as a full and complete textured object.

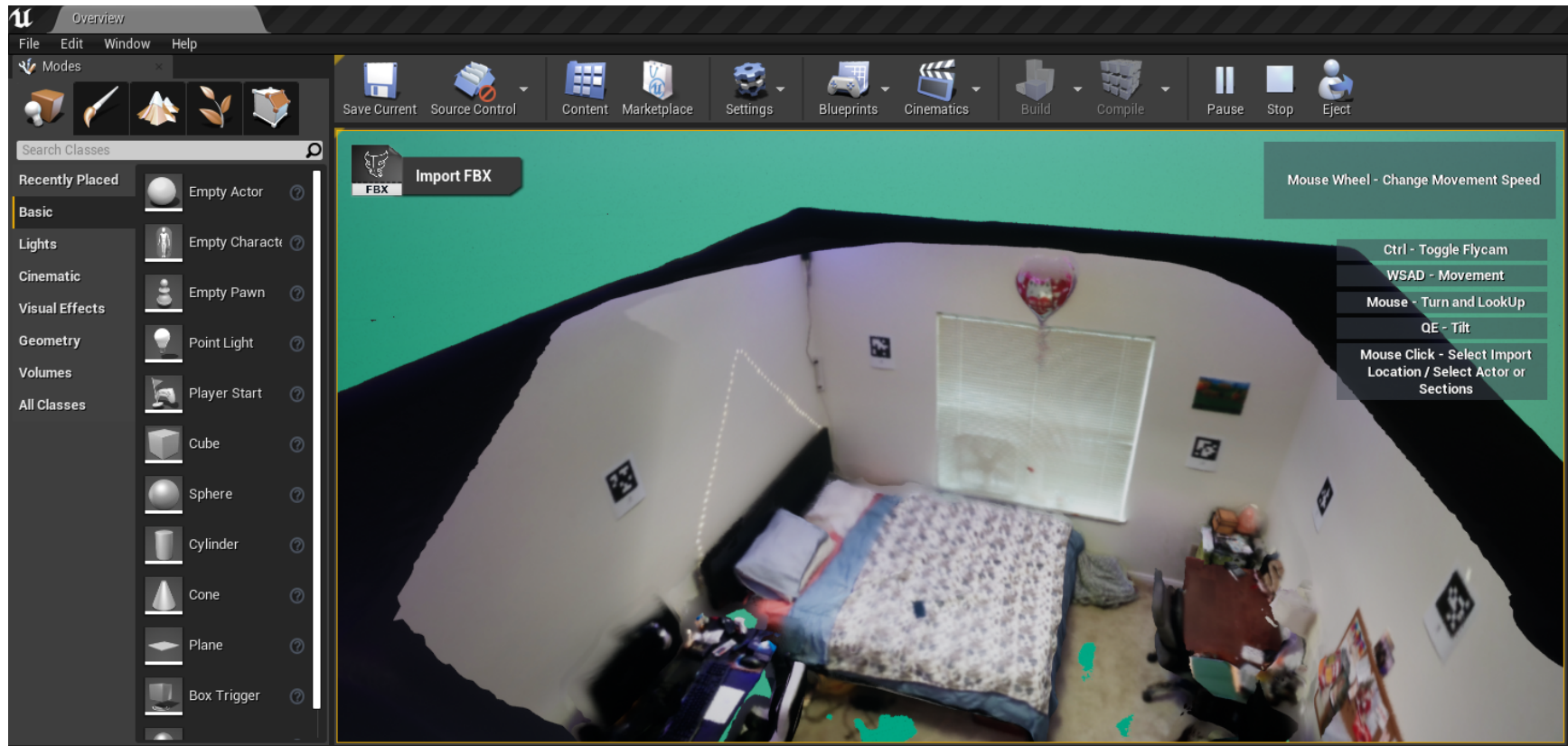
Importing in progress :



This GUI element lets the user know the progress of their FBX file is still being imported. This is in response to our issues with the Unreal Engine before where it would crash during importation.

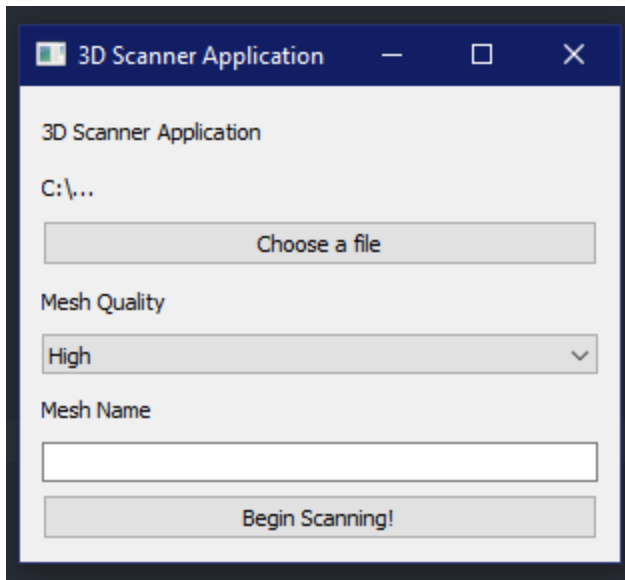
FBX textures and materials within the Engine :

FBX meshes generated by MetaShape usually have textures applied to them already. When the built in FBX importing tool is invoked it already imports both color and texture values from the FBX source file and by default already seeks to apply these values to the mesh that is being imported. This makes it easy to import them!

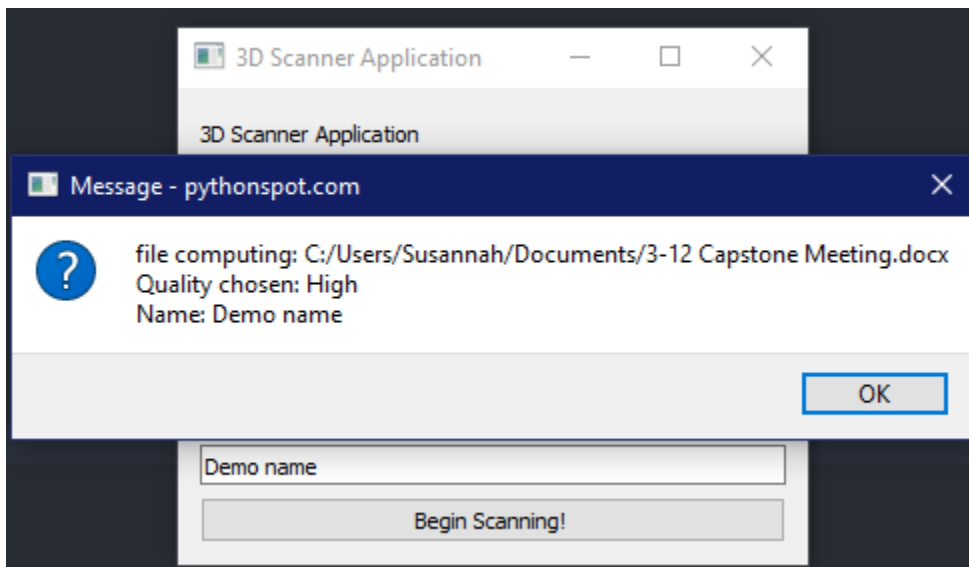


User Interface :

This week, we rebuilt the user interface from the ground up with PyQt5. Before we attempted to aid the interface with QML, but this led to module errors. Since the interface only needs to be simple, we decided to have it created with just the PyQt5 modules. Currently, it has the functionality of selecting the name of the final scan, the point cloud file to scan, and the quality of the mesh.



This box demonstrates that the ui is able to extract the data the was inputted by the user and will be able to use it in other areas.



[pyqt5tutorial.pdf \(wordpress.com\)](#)