

Real-time communication between Maya and external renderer

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This is an external render application which renders out the scene from Maya in real-time. It does so via a maya plugin designed to send the scene data to the external render application. Currently it can handle transforms, meshes, material and camera. Lights are already set up in the render application.

To run this project open Maya Renderer project in Visual Studio, ensure that Renderer is the single startup project in the Solution properties, build and run the solution. Load the created .mll into Maya.

The following solution '*Maya Renderer*' is developed in Visual Studio 2019 and is built up of four projects, a Maya plugin '*MayaAPI*', an OpenGL render application using Raylib 1.3 '*Renderer*', a Raylib library '*raylib*' and a communication library '*Shared Memory*'.

Maya plugin

For the plugin project to build, it must be linked to include and library folders in the Autodesk Maya directory and shared memory. Linking should already be done and the project should be ready to run.

This project will build a Maya plugin .mll file. Load this file as a plugin in Maya.

To load the plugin automatically during solution build:

- In Maya, enter "commandPort -n ":1234"" in the Script Editor
- In MayaAPI/loadPlugin.py, change the path inside of 'loadPlugin()' at line 23 to target the plugin
- In MayaAPI/Properties/Build Events, set the Pre-Build Event and Post-Build Event to use in build

The plugin will add callbacks to newly created nodes and send them to the Render application. If issues occur, try reloading the plugin. It is recommended to have a new/empty scene in Maya and load the plugin before running the external application. Also, when loading textures in materials, use .png files.

Render application

The render application project is developed with OpenGL using Raylib 1.3, it must be linked with the raylib folder that comes with this project. Linking should already be setup here too and is ready to build. If running the solution in visual studio, do control in Solution properties that the Renderer is the single startup project.

The project will build a .exe file. Run this .exe

This application receives data from maya via the plugin. It will move the camera, create/import meshes, transform objects and add/change materials accordingly to Maya. Some actions may be a little slow such as transformation, especially if there are children, due to a lot of data being sent from the plugin.

Enjoy!