**LAB 2 Handout**

**Topics Covered**

* Build Maya Custom Node with MPxNode

**Assignments**

For every project, we will provide an “Exercise” folder and a “Solution” folder. Each includes a Visual Studio solution and corresponding files. Solution folder includes the complete code for you to finish the project, it is for you to reference when you are stuck at problems when adding code into “Exercise” folder. In the “Exercise” folder, all the code you need to finish is specified with comments “//- TODO:”, you need to search for all the “TODO” comments and add your code there.

**simpleNode project**

* **Topics Covered**
  + Write a skeleton of a custom node “simpleNode” with MPxNode class from scratch
  + Add simple attribute using MFnNumericAttribute class
* **Overview**
  + In this exercise, we will implement a custom node simpleNode, it has two attributes: “input”, ”output”

Whenever the “input” attribute changes value, the “output” attribute will always be the “input” attribute value multiplied by 2.

* **Exercises**
  + 1.Assuming you already copied the whole project under C:\MayaAPITraining, go to C:\MayaAPITraining\simpleNode\Exercise\
  + 2. Double click on simpleNode.sln to open the project, the skeleton of the simpleNode has already been provided.
  + 3. In simpleNode.h, adding declaration of “output” attributes and also declare your unique node ID
  + 4. In simpleNode.cpp, implement functions that are declared in simpleNode.h.

Relevant classes and methods:

MFnNumericAttribute::create()

MPxNode::attributeAffects(), MPxNode::addAttribute()

MDataBlock::outputValue(), MDataBlock::setClean()

MDataHandle::set()

* + 5. In pluginMain.cpp, implement both initializePlugin() and uninitializePlugin() functions to handle registration and de-registration of the simpleNode node.

Relevant classes and methods:

MFnPlugin:: registerNode()

MFnPlugin:: deregisterNode()

* **Result**

In script editor, execute:

createNode simpleNode;

Open “Attribute Editor”, you will see there are two attributes listed, “input”, “output”. If you change “input” value, “output” value will be 2\* input.