**Day 3 Assignment**

**April 15**

**Topics Covered**

* Dynamic attribute on 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.

**dynNode project**

* **Topics Covered**
  + Create dynamic attribute using MFnNumericAttribute and add it in MPxNode::postConstructor()
  + Set up affecting relationship between dynamic attribute and general attribute
* **Overview**
  + In this exercise, custom node “dynNode” has two attributes: “input” and “output”. We will add a dynamic attribute “dynAttr” on this class, also set up the affecting relationship so that the value of “output” is the sum of “input” and “dynAttr”.
* **Exercises**
  + 1. Double click on “dynNode.sln” to open the project, the skeleton of the dynNode has already been provided.
  + 2. Implement dynNode.h, add necessary function declaration

Relevant classes and methods:

MPxNode::postConstructor()

MPxNode::setDependentDirty()

* + 3. Implement dynNode.cpp, create a dynamic attribute, set up affecting relationship between it and output attribute, also in compute(), set up so that output = input + dynAttr

Relevant classes and methods:

MFnNumericAttr::create()

MPxNode:: thisMObject()

MFnDependencyNode::addAttribute()

MDataBlock::inputValue()

MDataHandle::asFloat()

* **Result**

In script editor, execute:

createNode dynNode;

Open “Attribute Editor”, you will see there are three attributes listed, “input”, “output” and “dynAttr”. If you change “dynAttr” value, and refresh the attribute editor, you will see “output” value will be the value of “input” plus the value of “dynAttr”.