MEL Scripting & Maya’s C++ API

Why do I care?

- Purpose: adding functionality to maya that doesn’t exist (yet!)
- Great way to introduce a “technical element”

Part 1: Programming in MEL

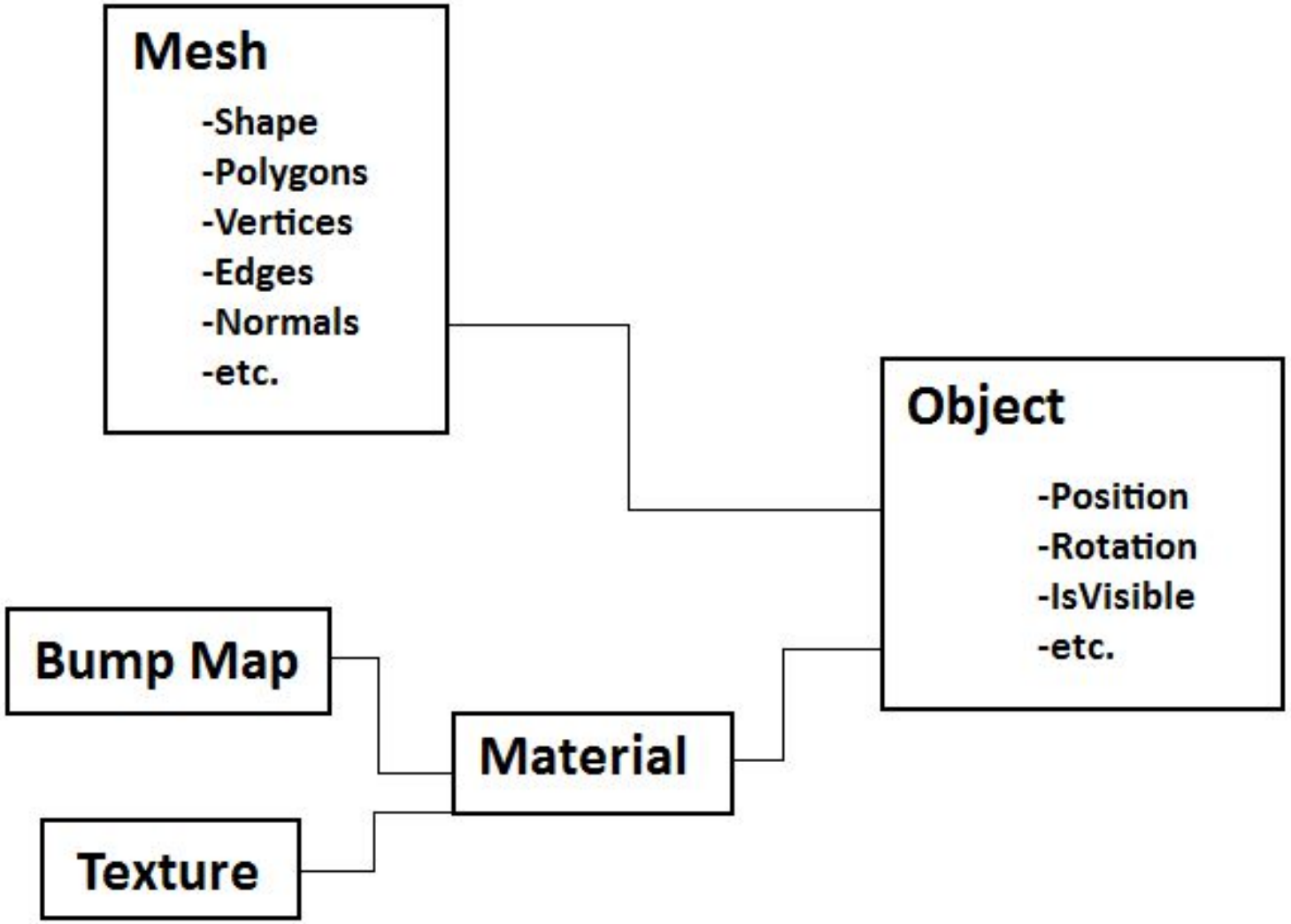
CODE EXAMPLE

Part 2: Writing Plug-ins in C++

Maya Plug-in Wizard for Visual Studio

- http://www.highend3d.com/f/4139.html
- Maya Libraries located in maya/x.x.x/include and maya/x.x.x/lib directories

How Maya Stores/Represents Data



Accessing Nodes

- Maya node types:
- Subclasses of MFn::Type
- MFn::kMesh, MFn::kTransform, MFn::kLambert, etc.
- Accessed using maya iterator types

Using iterators: example

```
#include <maya/MItDependencyNodes.h>
#include <maya/MLibrary.h>

void SomeClass::totallySweetFunction()
{
        //create an iterator to loop over the meshes in the scene
        MItDependencyNodes meshes(MFn::kMesh);

        while(!meshes.isDone())
        {

                MObject bar = meshes.item();

                //do something here
                .
                .
                .

                //move on to the next item
                meshes.next();
        }
}
```

Great. Now how do I do something useful with this?

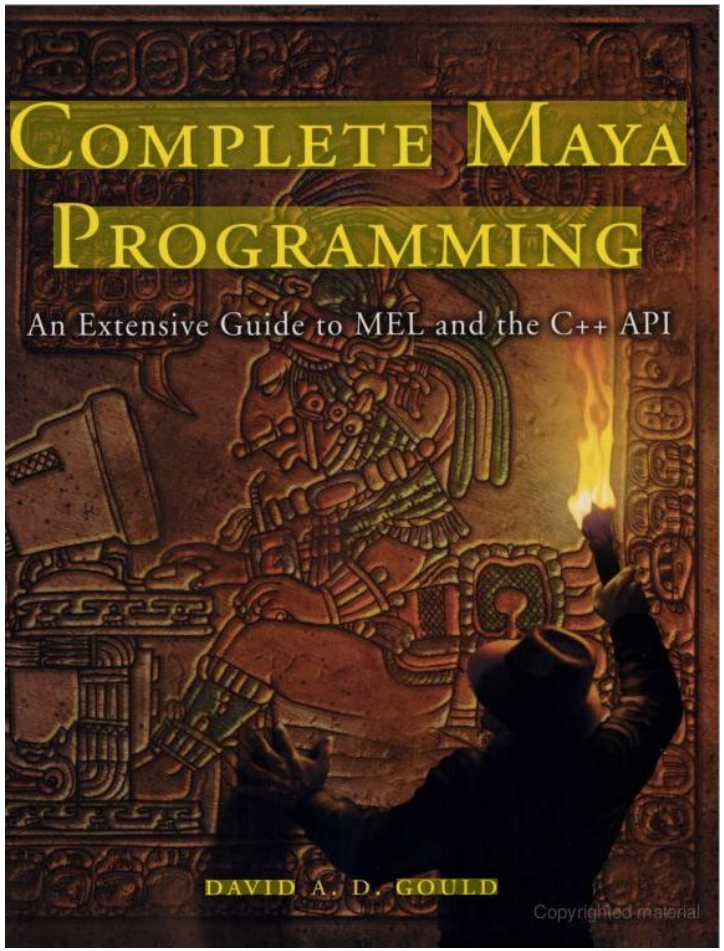
- Use “function sets” to access attributes

```
#include <maya/MFnTransform.h>
#include <maya/MVector.h>

void SomeClass::MoveThisObject(MObject &obj)
{
        //attach a function set to this object
        MFnTransform f_set(obj);

        //get the position of this object
        MVector pos = f_set.getTranslation();

        //create a new MVector object
        MVector new_pos(pos.x, pos.y + 1.0, pos.z);

        //move the object to its new position
        f_set.setTranslation(new_pos);
}
```

The Easier Way

- Download a plug-in that's already been written:
- http://www.highend3d.com/maya/downloads/plugins/

Additional Resources



- Available in the Engineering & Science Library (Wean 4th floor)