**Object Rigging Outline**

This is just an overview of topics covered for this demo. These things are also covered in depth in the project write-up and exercises on the course website:

[www.cs.washington.edu/458](http://www.cs.washington.edu/458)

**Hierarchy Basics**

* What hierarchy is
* Brief into via cubes
* Rotation and translation in Parenting

**Basic intro to pivots**

* Control via insert or by holding down D
* Choose good vertexes!
* Snap to:
  + X – snap to grid
  + C – snap to curve
  + V – snap to vertex

**Good Outliner Control**

* Groups
* Single top node (the top con)
* Parenting
* Controls:
  + Shift-click to show more
  + Middle-click drag to parent

**Basic intro to Anims**

* Creating curves via EP and NURBS curves
* Top Con: Don’t move it!
* Freezing Transforms: zeroing out all attributes
* Locking & hiding Channels

**Adding Attributes**

* Create new attributes using Add Attribute editor
* Minimum/Maximum values let you limit control for animators (good thing!)

**The Hypergraph**

* Lets you directly connect various objects to other attributes
* Not always perfect, commonly can be reversed:
* Need to use a multiply/divide node
* Multiply/divide: Not an axis thing!
* Just can take and output three different variables times 3 different numbers

**Set Driven Keys**

* Need to change default in-and-out animation settings to "Clamped" before doing set driven keys
* Set a key to a lower value, then to a higher value, and it will interpolate the values in between

**Layers**

* Allow rendering to be easier (more on this later)
* Basically, allows for animators to not accidentally be clicking on things they shouldn’t
* Can divide up anims and geometry. Two ways to make/fill layers
* Can set to Visible/Not, and referenced/not