



### **Overview of Projects in General**

Each project is designed to move your learning experience and skill level forward. Failure to complete or sufficiently explore components of one project will lead to increased difficulty on the succeeding project. Each project is composed of three parts: analysis, interpretation, and demonstration.

### **Project Description**

Build a motion and control system for your creature using a scripting language such as python. The script or scripts should be accessed and implemented from within the 3D animation software package of your choice. Bone location may be determined by a pre-set distribution of pivot points. The tool should procedurally set the following: bone orientation, hierarchical relationships within a single hierarchy, FK and/or IK relationships, constraint and control systems, control icon scaling and placement, and a reasonable and extensible naming convention.

The scene file and associated scripts for the project must be turned into the class folder prior to the beginning of class on the due date. The project will be presented and critiqued in class including participation by the instructor and other class members.

### **Technical Specifications**

A 3D animation software program must be used that permits scripted commands to be run through the interface. After loading the program and a scene containing reference images, only scripts may be used to build the rig. The build scripts must run live and be projected during class.

### **Project Goals**

- Write functional code in a tool-based scripted language.
- Utilize the strengths of the language.
- Assess the strengths and weaknesses of the script language used.
- Implement a procedural, repeatable, and extensible method for generating a motion and control system for a digital character intended to be used in key-frame animation.
- Organize scripted code in your computing environment so that it is easily accessible from within and outside of the 3D animation software.
- Evaluate and critique your own work and the work of others.

### **How Success is Measured**

A successful project will generate the rig with minimal interaction from the user. The procedurally built rig should correspond to the orthographic overlays and should demonstrate appropriate scale, bone position, orientation, and connections. A hierarchical view should exhibit an appropriate base hierarchy, connections between nodes, and node naming conventions.

A successful project will be ready for presentation at the beginning of class, with a clear verbal introduction and explanation of methods used. If copyrighted source material is used the source must be cited.

A grade will be determined based upon the following factors:

- Procedural placement of animation bones appropriate for the creature presented.
- Appropriate direct (parenting hierarchy) relationships.
- Appropriate indirect relationships (constraints)
- Appropriate implementation of IK and FK.
- Appropriate naming of all nodes.
- The speed and efficiency of the rig build process including the amount of user interaction required.
- Presentation skills include verbal delivery and adherence to technical specifications.