TEXAS A&M UNIVERSITY
DEPARTMENT OF VISUALIZATION

VIZA 615 – Computer Animation, Spring 2012

Project #2 –Form Analysis

Instructor: Tim McLaughlin

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

Create bone placement diagrams, range of motion diagrams, and a CG mass blocking model of your animal. Use reference material from anatomy books, video reference, and CG modeling tutorials to assist your work. The bone placement diagrams should exhibit the animal in front and side orthographic views. Identify the pivot point of each bone required for animation, and the connection of one bone to another where appropriate. The range of motion diagrams should be created from the same orthographic views used in the bone placement diagrams. Identify motion arcs, including stopping points, for the major appendages, torso, neck, and head. Draw contour lines on the orthographic views, either as an overlay or a separate drawing, indicating how geometry will be modeled to accommodate the expected ranged of motion. The project will be presented and critiqued in class including participation by the instructor and other class members.

Technical Specifications

Range of motion and bone placement diagrams may be created either practically (paper, pen, pencil) or digitally.

The CG model should be presented as still frame overlays on the front and side orthographic reference views of your animal. Create both non-textured flat shaded, and hidden-line renders of the model. Use an appropriate world scale as determined by your 3D CG software.

Visual materials and model file(s) should be placed in the course folder prior to the beginning of class. However, students may use a personal website or blog to detail their work during class.

Project Goals

- Identify anatomically correct body form, bone placement, and number of bones.
- Define a visually plausible range of motion for major limbs, torso, neck, and head.
- Appraise the importance of CG bone number and placement relative to anatomical reference.
- Plan and execute a geometric representation of the biological form of the animal that is appropriate for the CG bone positions and range of motion.
- Evaluate and critique your own work and the work of others.

How Success is Measured

Successful bone placement diagrams will clearly exhibit how careful placement of pivot points and an efficient layout of CG bones can lead to plausible biomechanical motion. It is likely that there will not be an exact match between the number bones or placement points of animation bones relative to anatomical bones. It may be necessary to create your own plausible orthographic views if no exact reference can be found. A successful project will also be presented on time, with a clear verbal introduction and explanation of methods used. If copyrighted source material is used the source must be cited.

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:

- Understanding of the number and location of pivot points necessary to create appropriate motion.
- Understanding modeled form of the animal and the impact of range of motion on density and orientation of geometry.
- The graphical appeal of the overall presentation.
- Presentation skills include verbal delivery and adherence to technical specifications.