Project 3 - Procedural Motion and Mechanical Objects

DATE DUE: see class notes

CHECKLIST:

- hipnc
- pdf
- jpg beauty
- jpg compare
- mov or mp4 (compressed)
- and reference / textures

Goals: To learn how to use procedural methods to model and animate geometry. Specifically, to use expressions and functions to generate motion that relates to real world objects. You should complete the assignment with a base knowledge of the use of *sin, cos, noise, rand, smooth* and *ab*s functions. In addition, you should understand the use of *logical operators* and the use of the *if* function as well as use of the *ch()* function. You may use chops but it is not required.

If you decide to use chops with music it is imperative that it appears and music is controlling the motion and that the music selected is used with permission.

Rules:
1. It is **suggested** you use *sin, cos, noise, abs, rand* and *if* functions somewhere in the work.
2. The motion should be based on a mechanical object that displays cyclical motion. However, it must **involve motion beyond just simple rotation**.
3. The result must be 10 seconds minimum.
4. The environments must represent and present the animated object well and all objects should be shaded and lit to a **high aesthetic quality**.
5. **All aspects are to be completed in Houdini**.

Considerations:
Use a video as a reference for the motion or a storyboard with at least 6 drawings/sketches of your chosen object. Good choices for the object could be mechanical toys or old-style steam locomotives, wacky flying devices from the turn of the century, wind-up toys with several moving parts, robots from films, carousels, and so on. Poor choices would include a mechanical object that is overly complex (hundreds of moving parts like a watch), or any mechanical object that is visually overly simplified like a car where no complex moving parts are visible. (See class notes for inspirational websites).

Grading: Producing a well-rounded portfolio piece is expected. Content such as lighting, composition, use of color, and most importantly, believable motion, will all contribute to the final quality of the piece and to the overall grade. First priority is believable motion, appropriate level of modeling, and finally shading and lighting. See the specific rubric posted on the class website.

Submissions guidelines:
The project will be submitted as a directory **F24_V350_P3_LastnameFirstname_Title/**

This directory should contain the following:

- **F24_V350_P3_LastnameFirstname_Title.hipnc**

- **F24_V350_P3_LastnameFirstname_Title.pdf** Please include a general description to a viewer as well as a more technical description to a peer in your class. It is to serve as a breakdown. A visual breakdown would be a plus as well. See template on the class notes. **Always cite your sources.**

- **F24_V350_P3_LastnameFirstname_Title.mp4** typically containing 10 seconds of animation, high-quality H.264 compression, 1920 x 1080 pixels (720 X 405 if you are rendering during high renderfarm usage).

- **F24_V350_P3_LastnameFirstname_Title.jpg** (or png no tifs). This image should be rendered in high resolution(1920 x 1080 pixels). Other aspect ratios accepted. **Render in exr,** convert using mplay.

- **F24_V350_P3_LastnameFirstname_Compare.jpg –** a screensnap of your reference and your final render

- Additional information required:
    - **reference/** images and **sources.pdf**, indicating primary references/influences for the project and the source of the submitted reference images, including appropriate URLs and small reference images. If you are using your own artwork, please scan it and place it in this directory.
    - **tex/**