**CS435 Computer Graphics  
Spring 2017**Project #3

Hierarchical Modeling

**Due: Feb. 27 by 11:59 pm**

**Problem**: Use WebGL to model a playground merry go round being ridden by 3D characters (letters). A playground merry go round consists of a large colored disk and some handles installed on the disk, like the one [here](http://www.bing.com/images/search?q=playground+merry+go+round&id=775FAE10989C06032F909E692B43DBE87731AC66&FORM=IQFRBA#view=detail&id=F8AE0A98972BEA6E947306137129BA297339BDFA&selectedIndex=5). Letters in a 3D font can be sitting on the handles. For simplicity, only the capital letters can ride the merry go round, and each handle can take three letters.

You shall have a <START> button to let the user to start the merry go round. Once it is started, the button is changed to the <STOP> button. Clicking the <STOP> button will stop it and the button will change back to <START>. You also shall have a one-line text input field to let the user to type in the letters that will sit on the handles. Any lower case letters shall be converted into the upper case ones. The space is allowed and it can be used to skip a seat. All other characters will be ignored.

The camera shall be placed properly so the merry go round and the riding letters can be seen clearly.

Create a directory called *project3* under your cs435 home directory. Move into that directory, and create two files: *modeling.html* and *modeling.js* to complete this project.

**Hints:** You can build a 3D font from a 2D font. In 2D, a dot-matrix font is a very basic font. (Please see <http://www.dafont.com/dot-matrix.font> for an example.) If you use a cylinder to represent a dot, you will have a 3D font. Also it is frequent to use a 16-segment display to display letters in 2D. (Please see <http://en.wikipedia.org/wiki/Sixteen-segment_display> for an example.) If you use a cylinder to represent a segment, you will have a 3D font.

**Submission Requirements:**

* Make sure the *project3* directory contain the two files: *modeling.html* and *modeling.js*.(Here we assume the *Common* directory is located in the same directory as the *project3* directory, and you do not need to submit the *Common* directory.)
* The title of *modeling.html* should contain CS435, Project #3, your name
* The *modeling.js* file should contain the following information at the beginning: CS435, Project #3, your name, a description of the program. Add other necessary comments whenever a part of the code is not obvious.
* Compress the *project3* directory into *project3.zip* and submit the compressed file as an attachment on Blackboard.