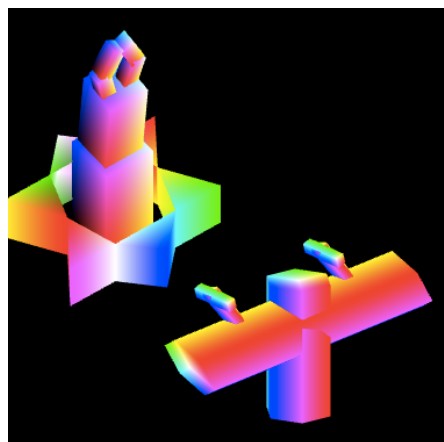


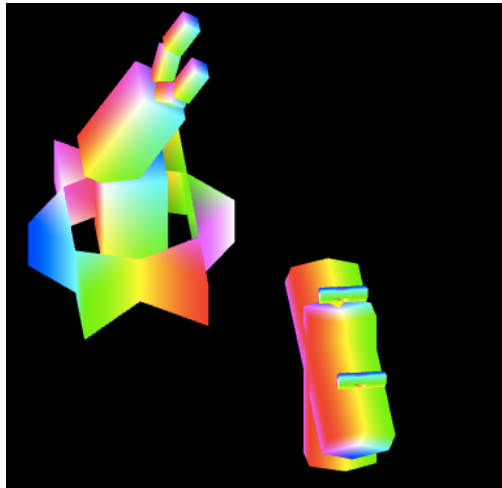
Name: Danqi Liao   NetID: dla357   Project A Title: World of Bizarreness

My goal for project “World of Bizarreness” is to draw several interactive animated colored and jointed 3D objects by using WebGL and HTML. The drawing is interactive in a way that the program allows inputs from users through mouse dragging, keyboard and mouse clicking interaction. The drawing of jointed and smoothly moving objects are implemented by the usage of model matrix stacks, specially by pushing and popping the stack to traverse the tree structures of the jointed objects.

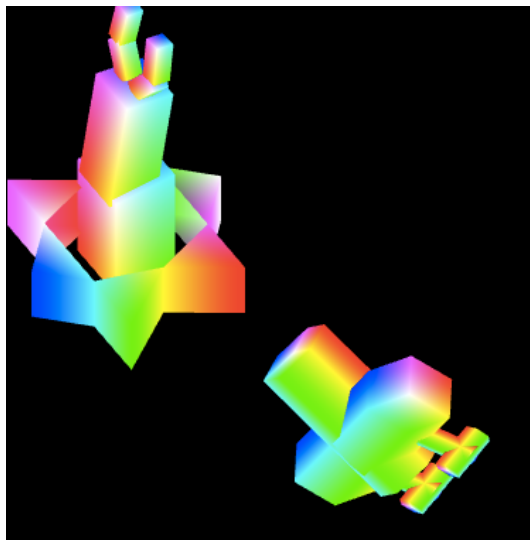
“World of Bizarreness” has two jointed moving objects. On the left side of the canvas, there is a hexagon-based robotic arm. The robotic arm has a lower arm and upper arm and its clamp. On the right side of the canvas, there is a seesaw that is made up by 6 hexagram-based cylinders. The seesaw has a base, a horizontal bar and two handles on top of the horizontal bars (for safety features!). Users can drag the mouse around the seesaw to rotate the whole seesaw in the direction they want. By controlling the up and down key on the keyboard (“↑↓”), users can control the lower part of the robotic arm to rotate outward and rotate inward. By clicking anywhere on the right side of the robotic arm, the users can spin the whole robotic arm toward the right; by clicking anywhere on the left side of the robotic arm, the users can spin the whole robotic arm toward the left. There is a “clear” button on the bottom of the web page, by clicking the button, the users can restart the motion of the drawings.



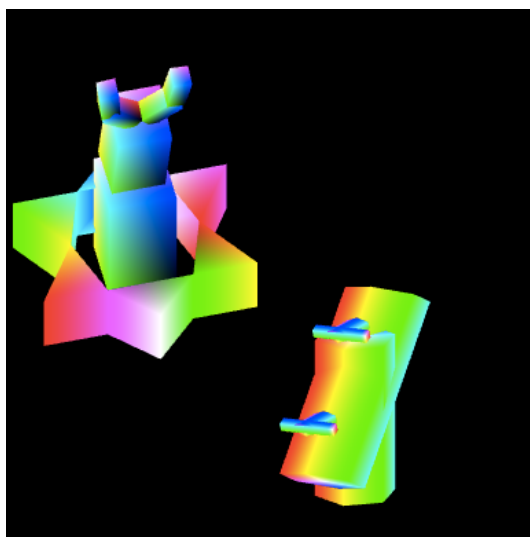
Picture 1: Moving Robotic Arm(left) & Seesaw (right)



Picture 2: Lower part of the arm is moving outside by pressing “↑↓”



Picture 3: Dragged seesaw (right)



Picture 4: Jointed, moving smoothly objects with moving differently parts

Picture 1: The initial start of the motion without user interaction. The two jointed objects rotate smoothly and for each object, different parts of the object will move differently in addition to the whole object motion.

Picture 2: Illustration of keyboard interaction. When the users press “↑↓” on the keyboard, the lower part of the robotic arm would move inside and outside accordingly.

Picture 3: Illustration of mouse dragging. When the users drag the mouses near the seesaw, the seesaw rotates in the direction of mousing dragging.

Picture 4: After the users press the “clear” button, the whole scenes restarts and clear all the previous user interactions from the canvas. The two jointed objects rotate smoothly and for each object, different parts of the object will move differently in addition to the whole object motion. For example, the clamp in the robotic arm moves from open position to close position and then repeat the motion.