



WEEK 3

# MANUAL FOR WEEK 3



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## **CAMERAS**

- This folder consists of html codes with the implementation three.js to perform 3D transformations based on camera views, i.e. Perspective (meaning the view of camera changes as your position changes) and Orthographic (the view of the object is same irrespective of the position).
- The file "Perspective.html" consists of html code to implement the perspective view on a 3D object. The parameters that are given to the PerspectiveCamera are: first the camera's vertical field view from the bottom to the top degrees and the next is the aspect ratio of the camera and then the near and far plane, these are the points where clipping occurs, i.e. whether the objects are too near or too far to the camera according to which the camera's position can be set.
- The file "Orthographic.html" consists of html code to implement the orthographic view on a 3D object. The parameters that are given to the OrthographicCamera are; left, right, top, bottom, as well as the near and far clipping points.
- CameraHelper has been implemented in both the files for providing help in debugging of cameras, i.e. it helps clearly in determining the difference between the perspective and orthographic view. The CameraHelper changes its size in perspective view, i.e. it becomes small when it moves farther away and becomes big when it moves near whereas in Orthographic view the size of the CameraHelper remains same.

## **LIGHTS**

- This folder consists of html codes with the implementation three.js to perform 3D transformations based on light sources, i.e. Ambient(it doesn't have a position but floods the entire scene with the lighting constraint by taking a color and intensity parameter), Point(light is radiated from a single point with color, intensity and distance as parameters), Spot(light is radiated from a point in cone like fashion with color, intensity and distance as parameters), Directional(light coming from a particular direction, takes color, intensity and target as parameters), and Hemisphere(it's like an ambient light which doesn't have an actual position and it takes two color values which represent the colors coming from top(sunlight or ceiling) or bottom(reflection)) light views.
- Each separate html file performs each respective light source action.
- Like the camera even lights have LightHelper which helps in debugging of the light radiations.