

HOMEWORK 2

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1) The cat and also the table were created following a hierarchical model, in the picture below we can see how are organized the nodes.

```
function createNode(transform, render, sibling, child){  
    var node = {  
        transform: transform,  
        render: render,  
        sibling: sibling,  
        child: child,  
    }  
    return node;  
}
```

The nodes of the cat are in the lines from 184 to 281.

2) The surface where are positioned the cat and the table, is a bumped map, and the textures are defined by a function that you can see below.

```
function configureTexture( textureImage, textureName, textureNumber ) {  
    var texture = gl.createTexture();  
    gl.bindTexture(gl.TEXTURE_2D, texture);  
    gl.texImage2D(gl.TEXTURE_2D, 0, gl.RGB, gl.RGB, gl.UNSIGNED_BYTE, textureImage);  
    gl.generateMipmap(gl.TEXTURE_2D);  
    gl.texParameteri(gl.TEXTURE_2D, gl.TEXTURE_MIN_FILTER, gl.NEAREST_MIPMAP_LINEAR);  
    gl.texParameteri(gl.TEXTURE_2D, gl.TEXTURE_MAG_FILTER, gl.NEAREST);  
    gl.uniform1i(gl.getUniformLocation(program, textureName), textureNumber);  
    return texture;  
}
```

That function is also used to define the texture of the cat, and the table.

3) The other textures are defined by the function above and it is called in the line 701.

4) As said before, the table is constructed with a hierarchical model as the cat.

5) I have added the button to start the animation. The animation works in that way; the only thing that do is modify the angle of the object,

in that case the legs, arms and body of the cat just adding a value to the initial angle.

6) To move the camera I used the same method seen in the homework 1. There are the sliders that give the opportunity to move it.

```
// CAMERA SLIDER
document.getElementById("zFarSlider").onchange = function (event) {
    far = parseFloat(event.target.value);
};
document.getElementById("zNearSlider").onchange = function (event) {
    near = parseFloat(event.target.value);
};
document.getElementById("radiusSlider").onchange = function (event) {
    radius = parseFloat(event.target.value);
};
document.getElementById("thetaSlider").onchange = function (event) {
    thetaEye = parseFloat(event.target.value) * Math.PI/180.0;
};
document.getElementById("phiSlider").onchange = function (event) {
    phi = parseFloat(event.target.value) * Math.PI/180.0;
};
document.getElementById("aspectSlider").onchange = function (event) {
    aspect = parseFloat(event.target.value);
};
document.getElementById("fovSlider").onchange = function (event) {
    fovy = parseFloat(event.target.value);
};
```

The button just modify that value.