

Chinese Lanterns

G6 Presentation

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Introduction

What? Why? How?



What?



Chinese Lantern

- An ancient Han traditional handicraft
- symbolize the meaning of reunion
- used to create a festive atmosphere



Why?



Why

- Very Common in life
- One of the Symbols of China
- Carry forward Traditional Culture



How?



How

1
Modeling

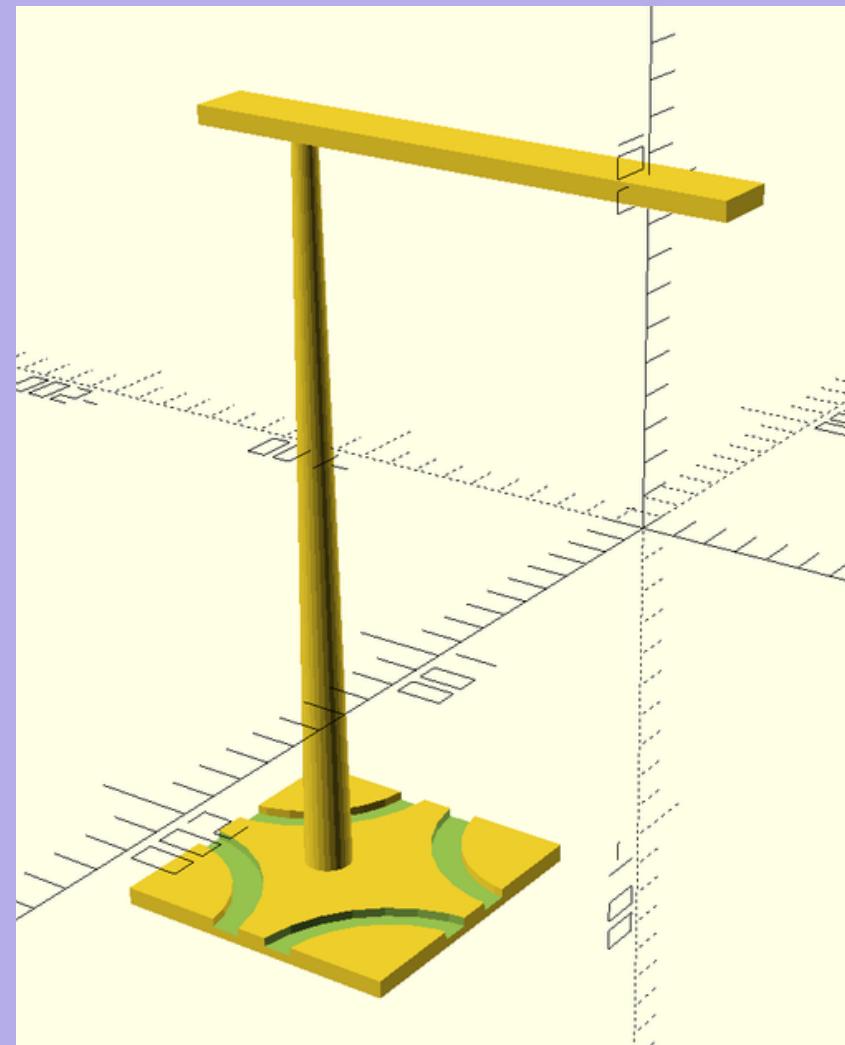
2
Rendering

3
Animation

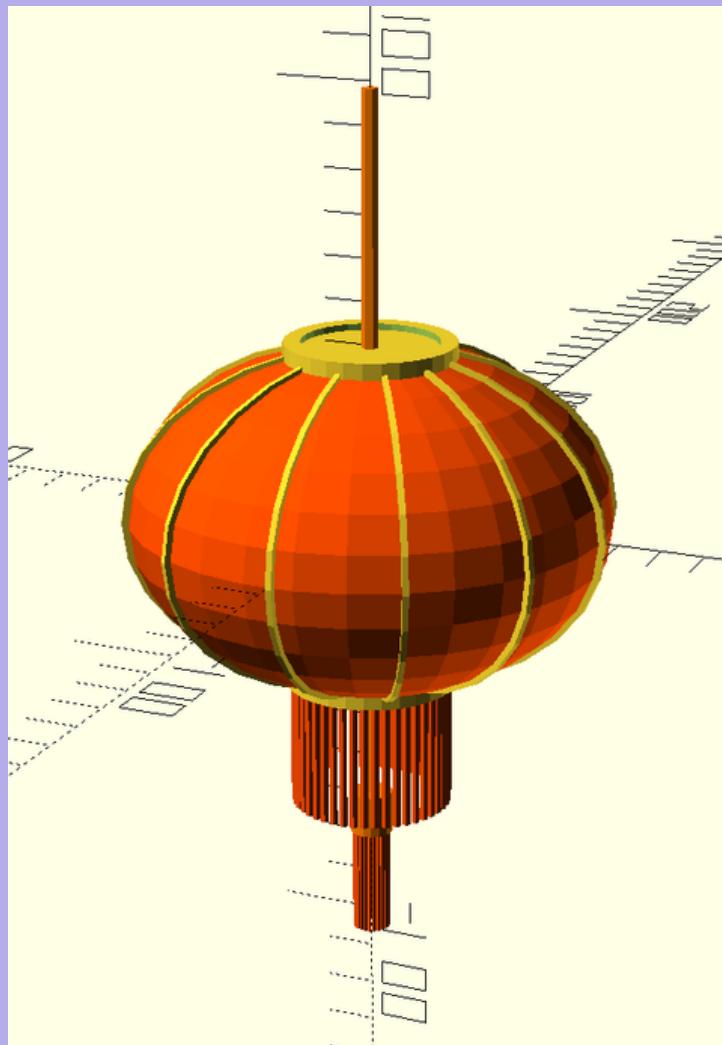


1

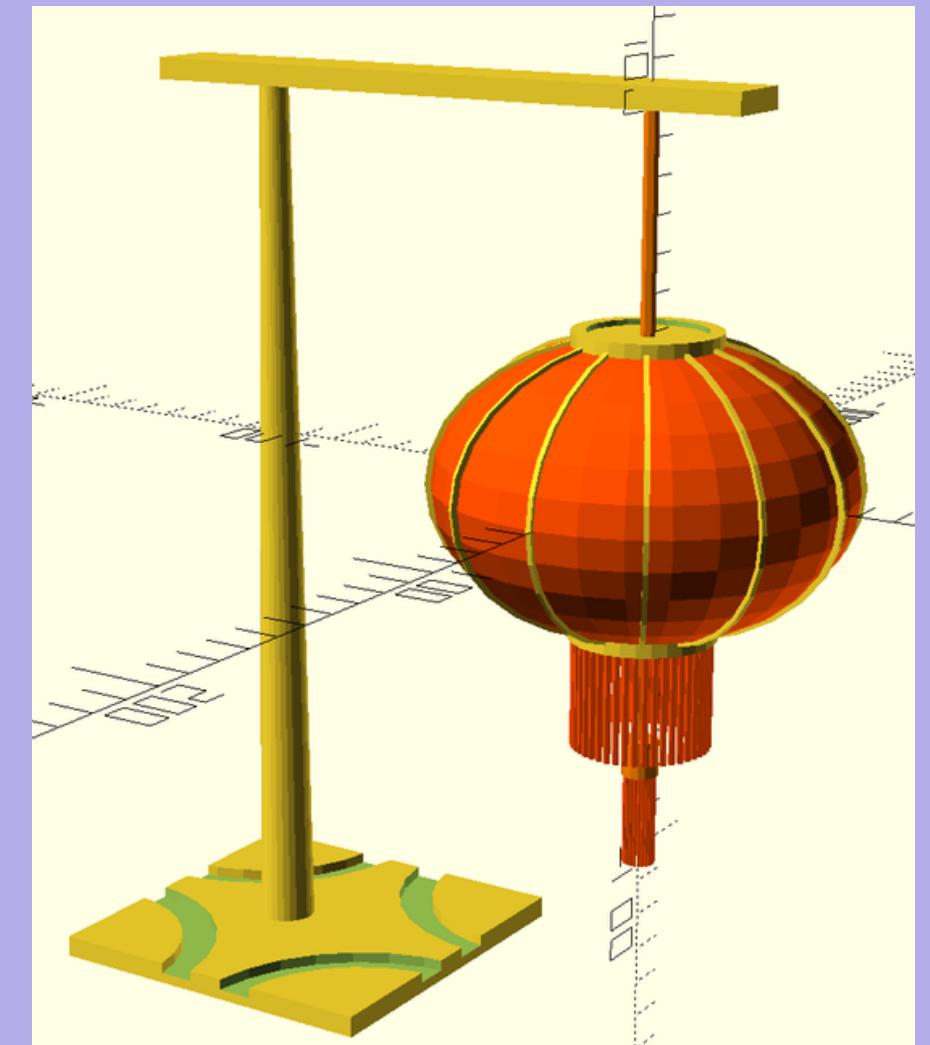
Modeling



+



=



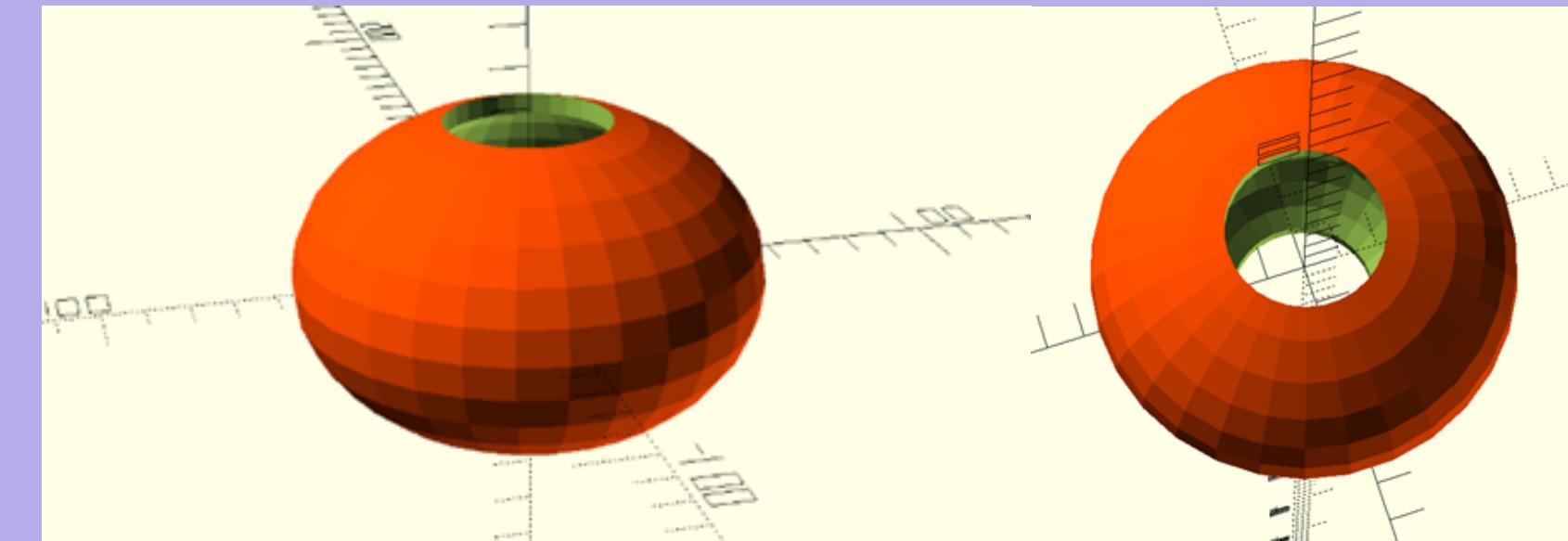
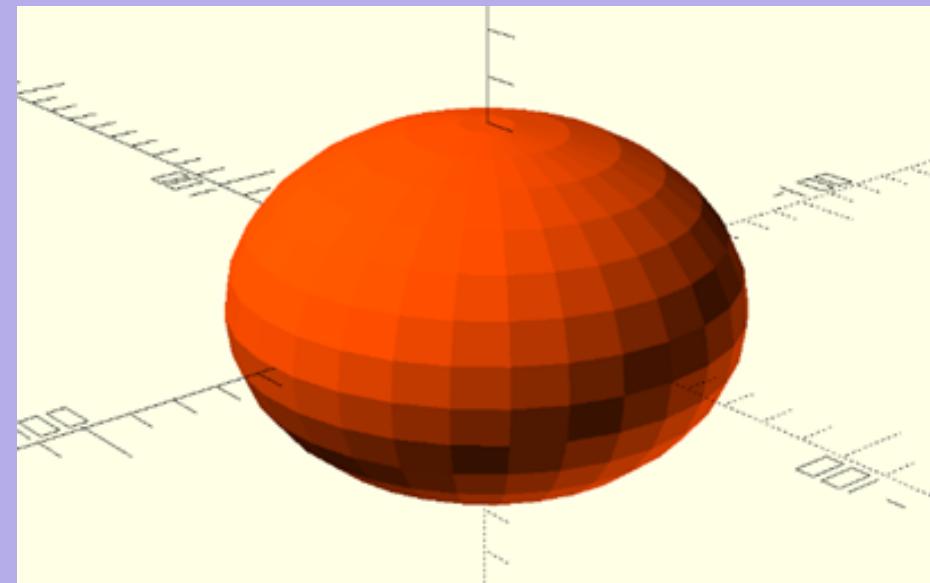
Holder

Lantern

Final

1

Modeling



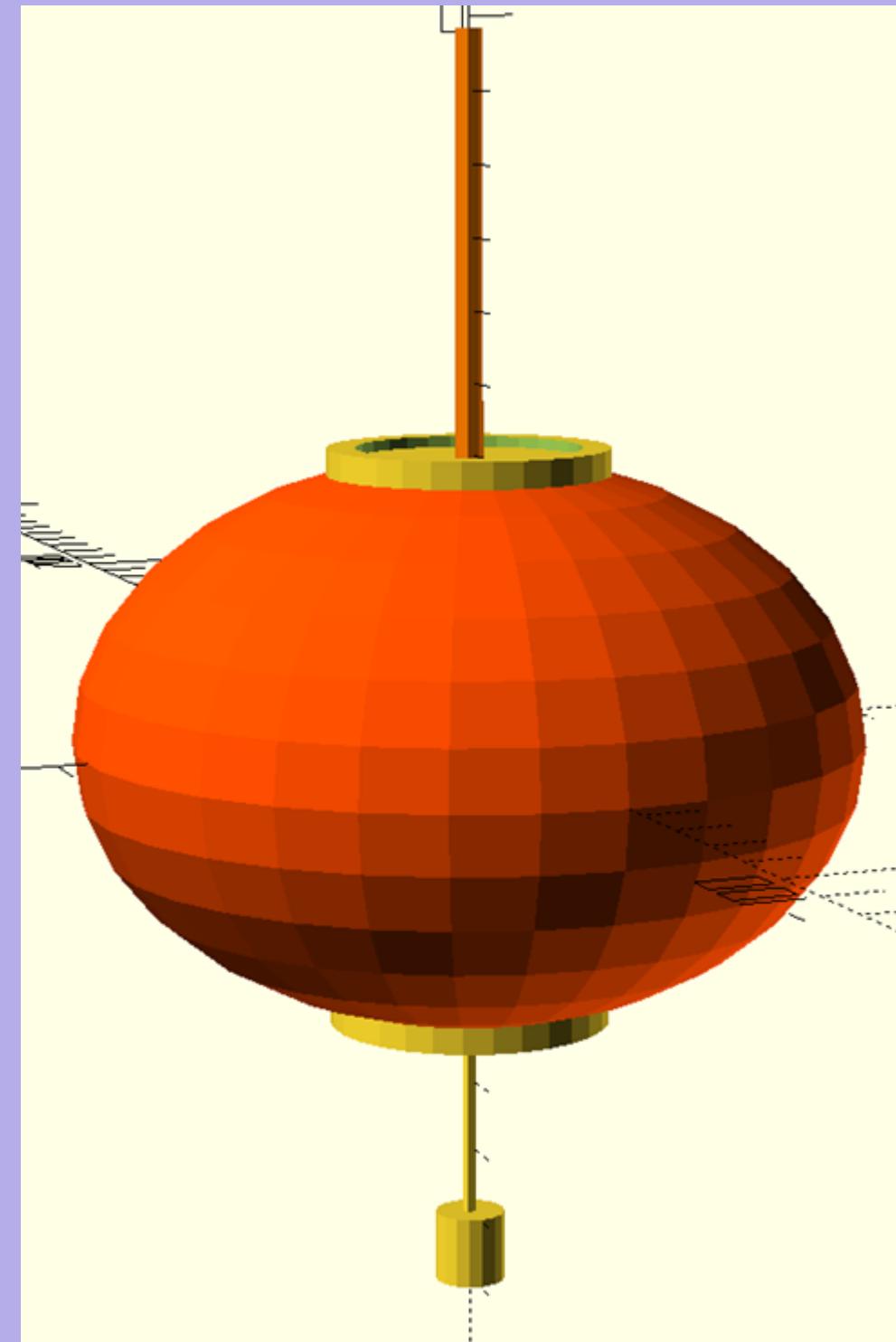
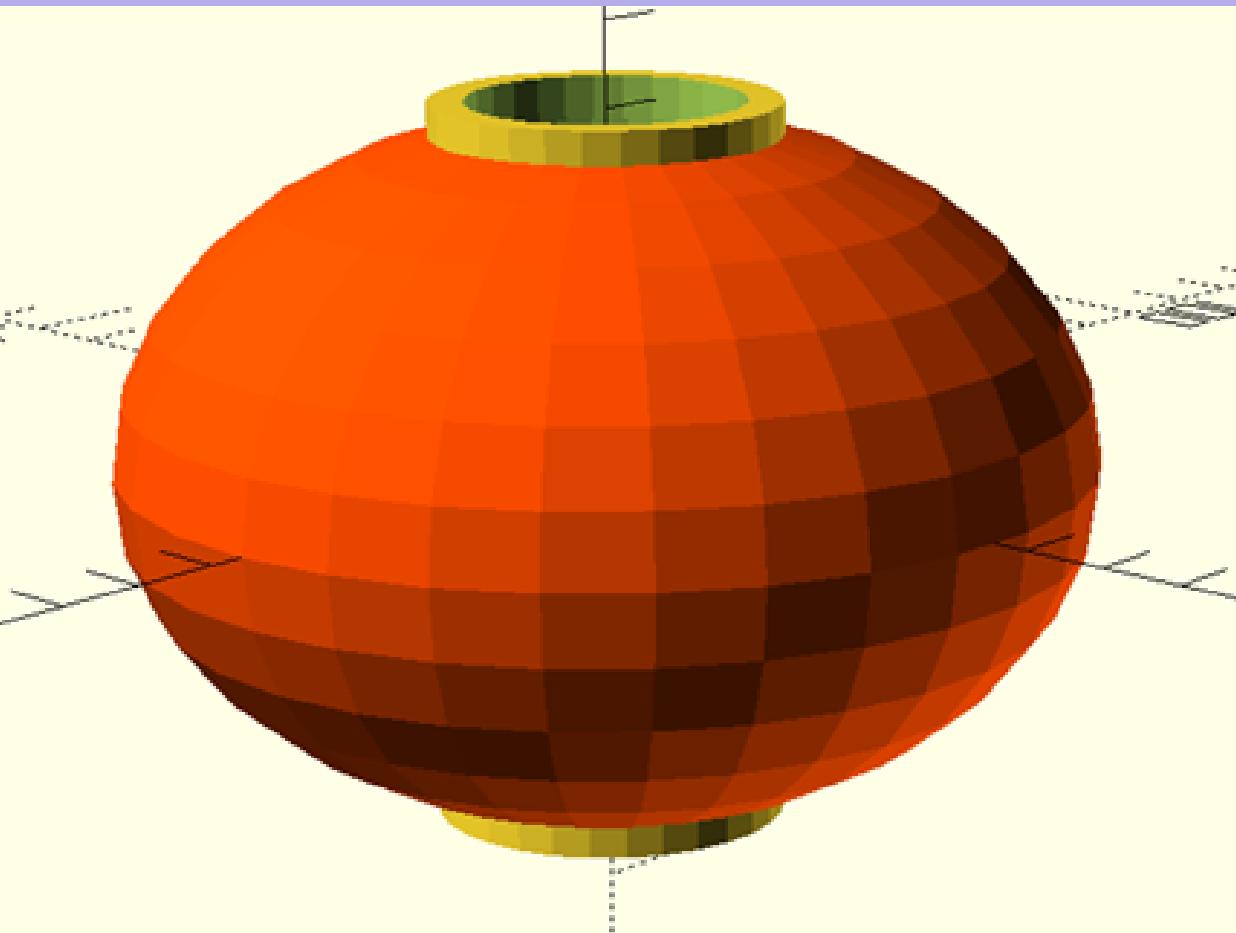
```
scale([1.4,1.4,1]) color([1,0.3,0]) sphere(r=40);
```

```
difference() {
    scale([1.4,1.4,1]) color([1,0.3,0]) sphere(r=40);
    sphere(r=38);
    translate([0,0,5]) cylinder(h=35,r=20);
    translate([0,0,-55]) cylinder(h=40,r=20);
}
```

Starting with a scaled sphere

1

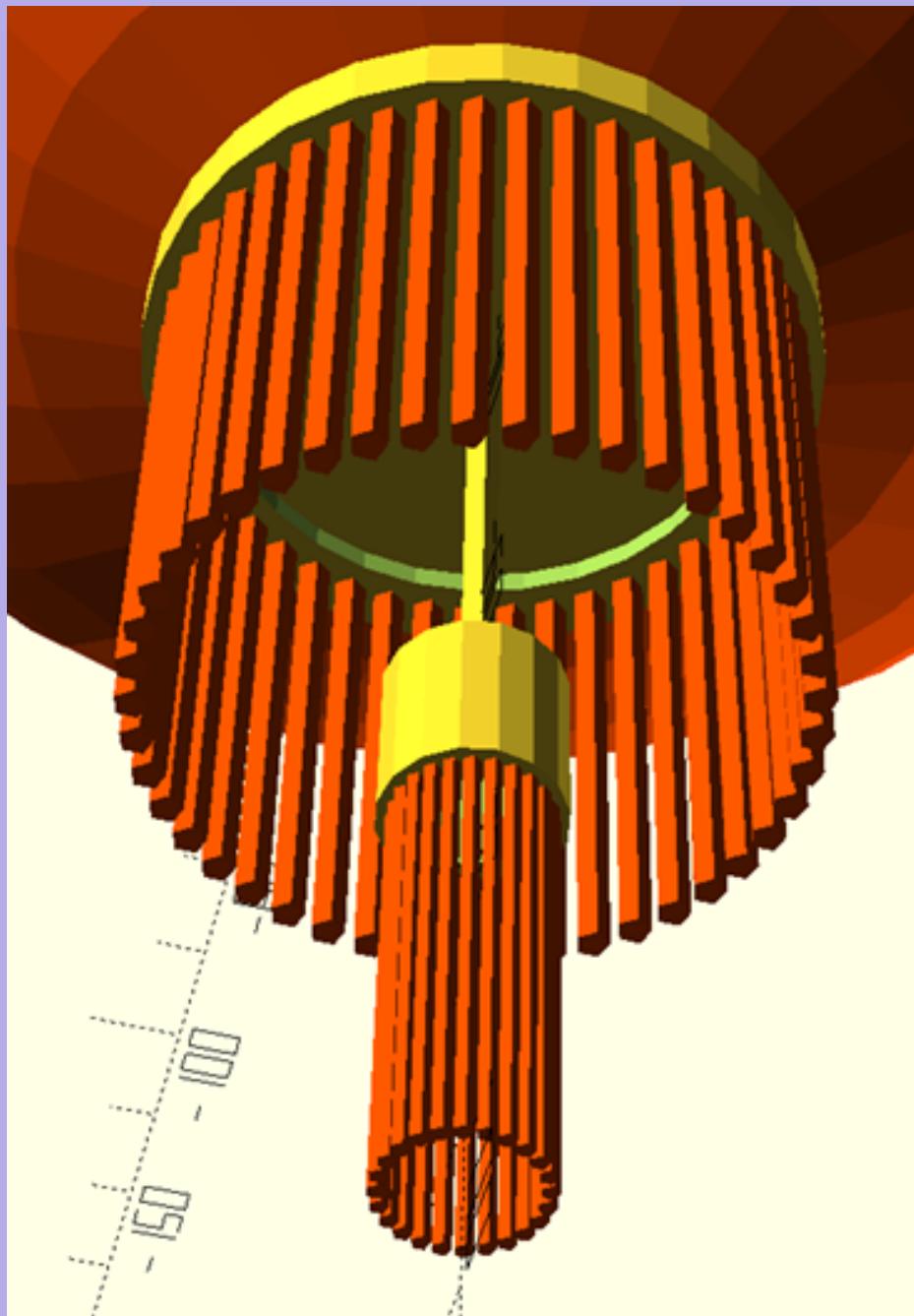
Modeling



Adding the lids and pole

1

Modeling



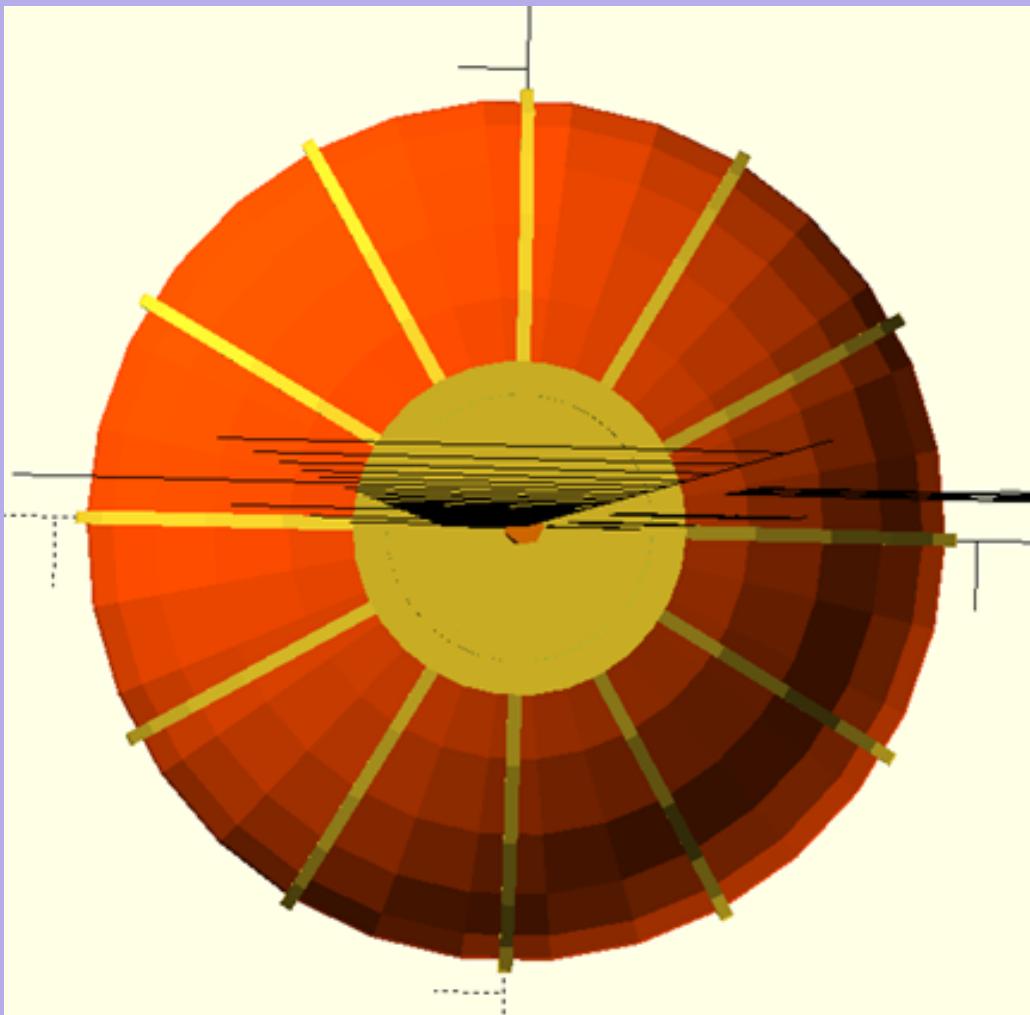
```
for (i = [0:8:360]) {  
    translate([18*cos(i), 18*sin(i), -71]) color([1,0.3,0])  
    cylinder(h=30, r=1);  
}  
  
for (i = [0:15:360]) {  
    translate([4*cos(i), 4*sin(i), -104.5]) color([1,0.3,0])  
    cylinder(h=25, r=0.5);  
}
```

Tassels

Using two for loops, applying the formula
 $x_l = x_0 + r \cdot \cos(i)$ and $y_l = y_0 + r \cdot \sin(i)$ to confirm
the position of each single tassel

1

Modeling



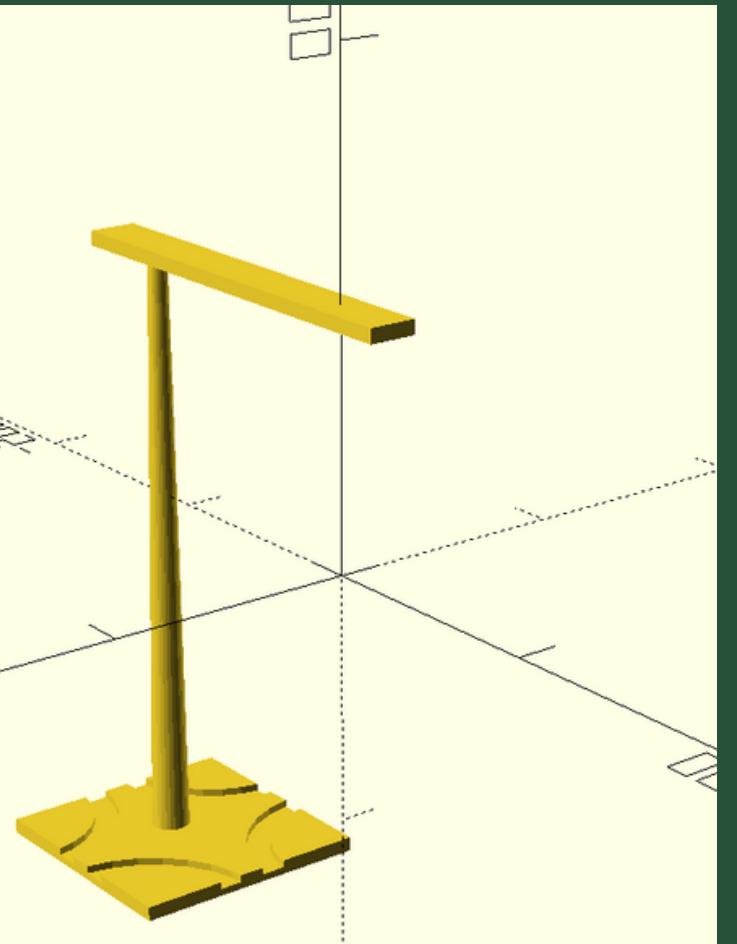
```
for (i = [0:30:179]) {
    difference() {
        scale([1.4,1.4,1]) rotate([90,0,i]) cylinder(h=1,r=41);
        translate([0,0,-100]) cylinder(h=200,r=16);
    }
}
```

Frame

Using a **for loop**, after each of them is created, **rotate it in x-z dimensions**

2

Rendering



STL
via `STLLoader`



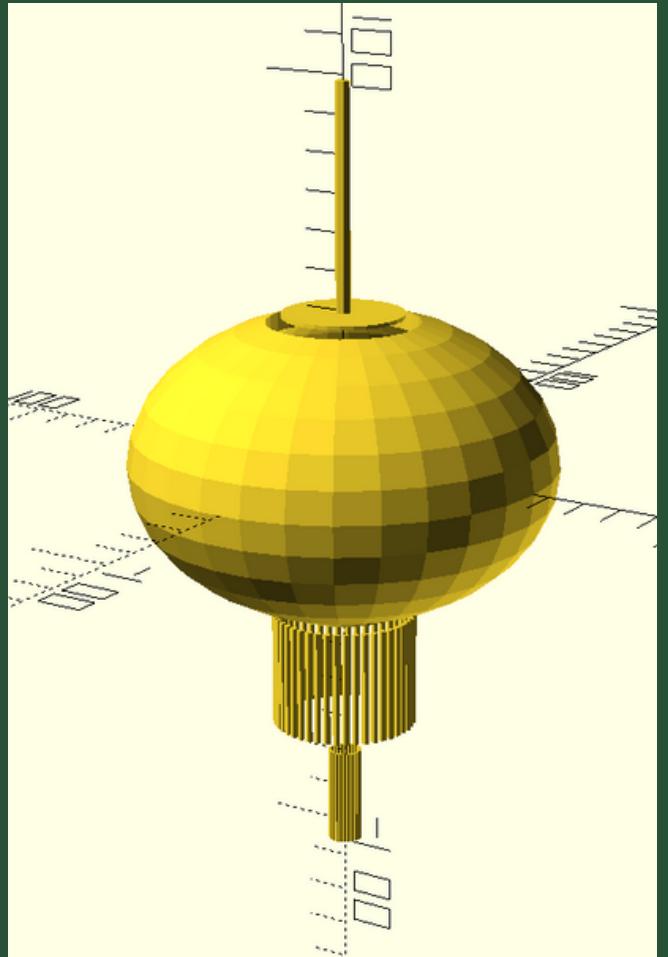
Texture
`basicMap`
`normalMap`



Apply Material
`map:`
`woodBaseColor`
`normalMap:`
`woodNormalDX`
`roughnessMap:`
`woodRoughness`

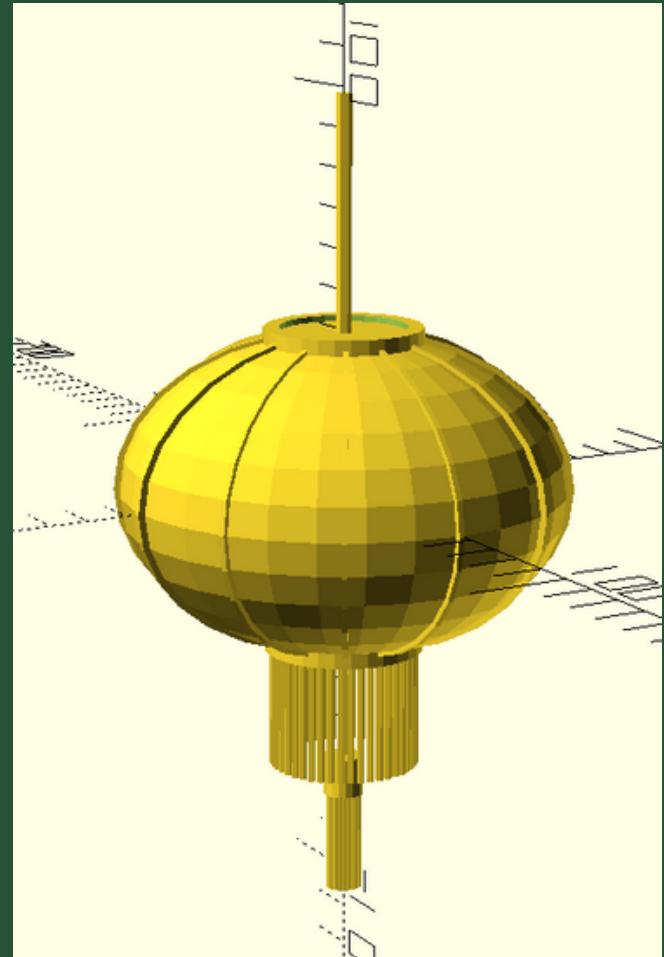
2

Rendering



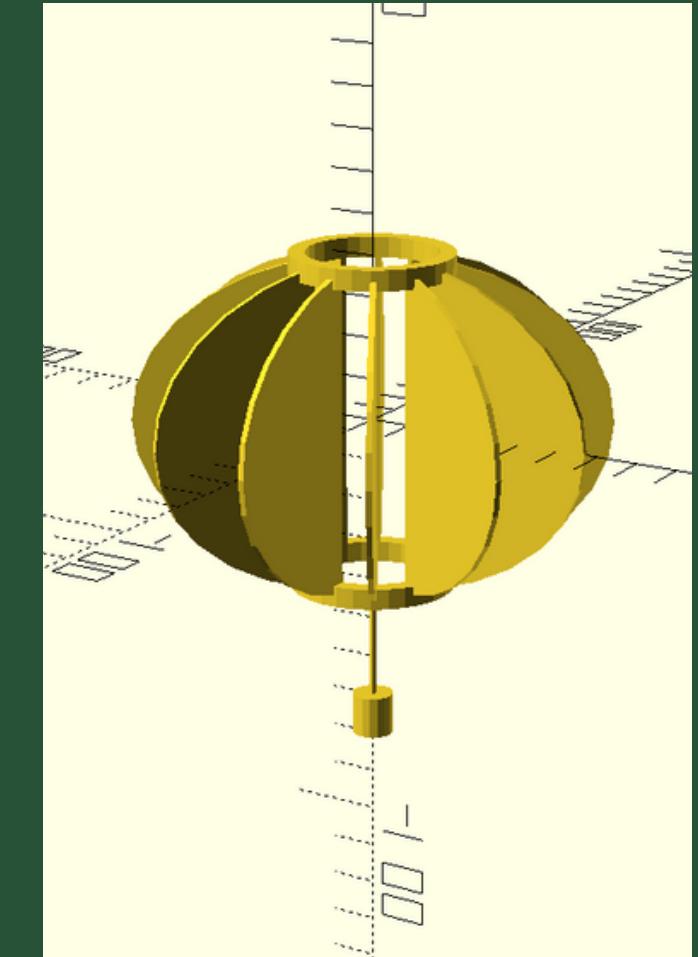
lantern Red Part

<<<



lantern

>>>



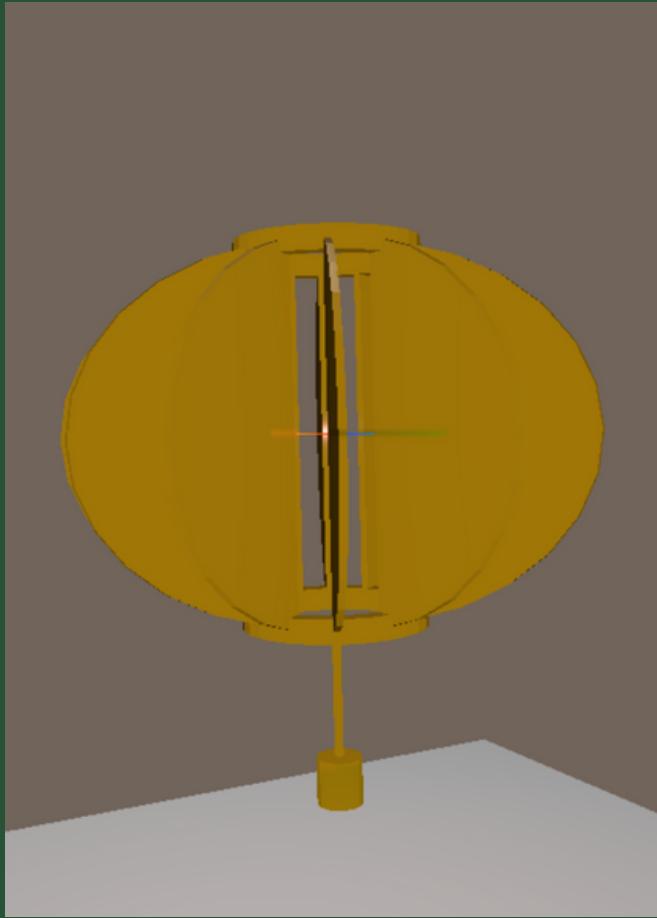
lantern Gold Part

2

Rendering



>>>



basicMap
normalMap
metalnessMap

color: 0xffb900,
roughness: 0.2,
transparent: false,
transmission: 1.0,



>>>



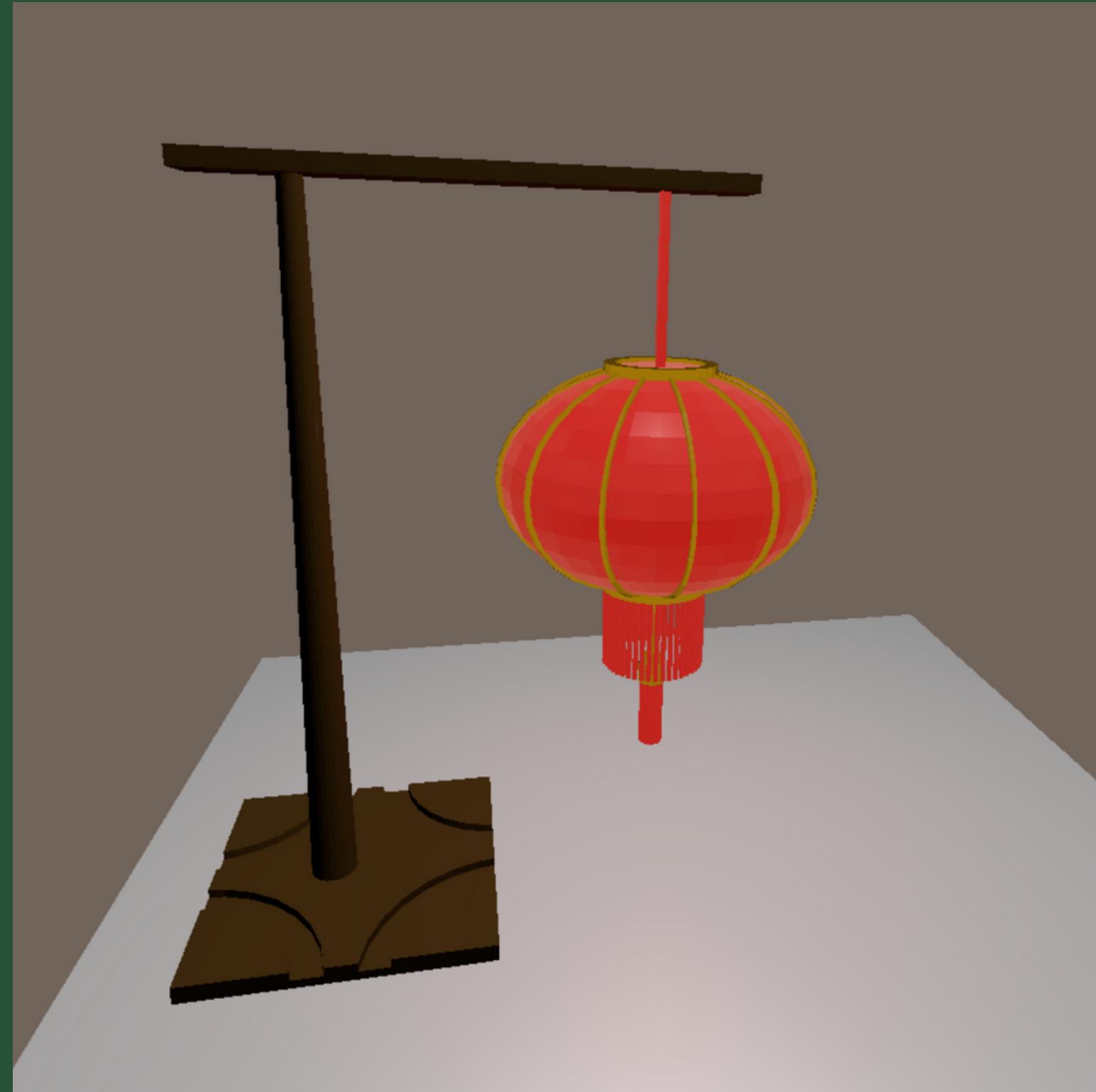
basicMap

color: 0xe60000,
envMap: redTexture,
metalness: 0.00,
roughness: 1.0,
opacity: 1.0,
transparent: true,
transmission: 0.7,

2

Rendering

Add Elements Up



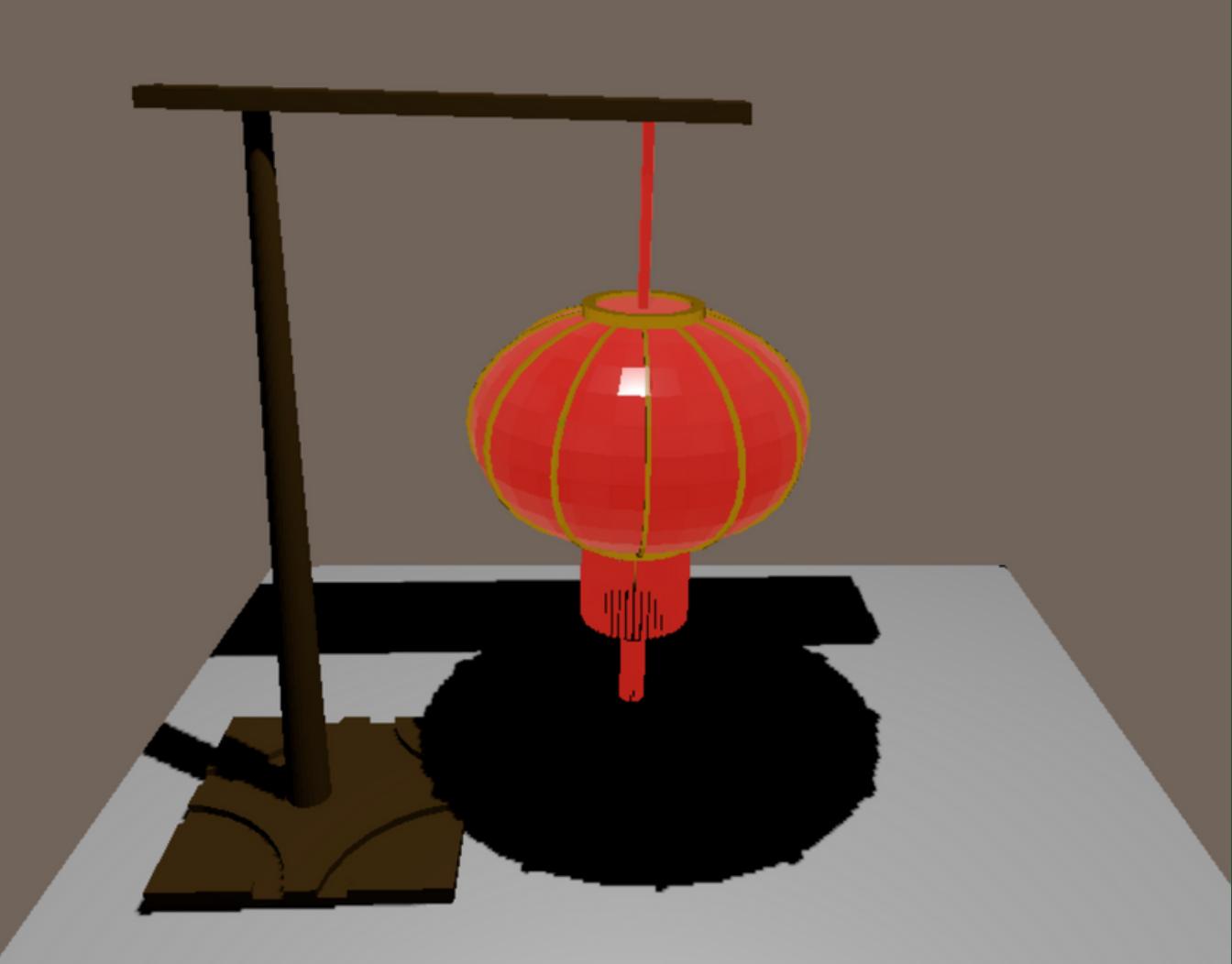
2

Rendering

Lighting

Create the main shadow using the main light source

```
const pointlight1 = new THREE.PointLight(0xffffffff,0.5,0,0);
pointlight1.position.set(70, 220, 5);
pointlight1.distance = 0.0;
pointlight1.castShadow = true;
scene.add(pointlight1);
```



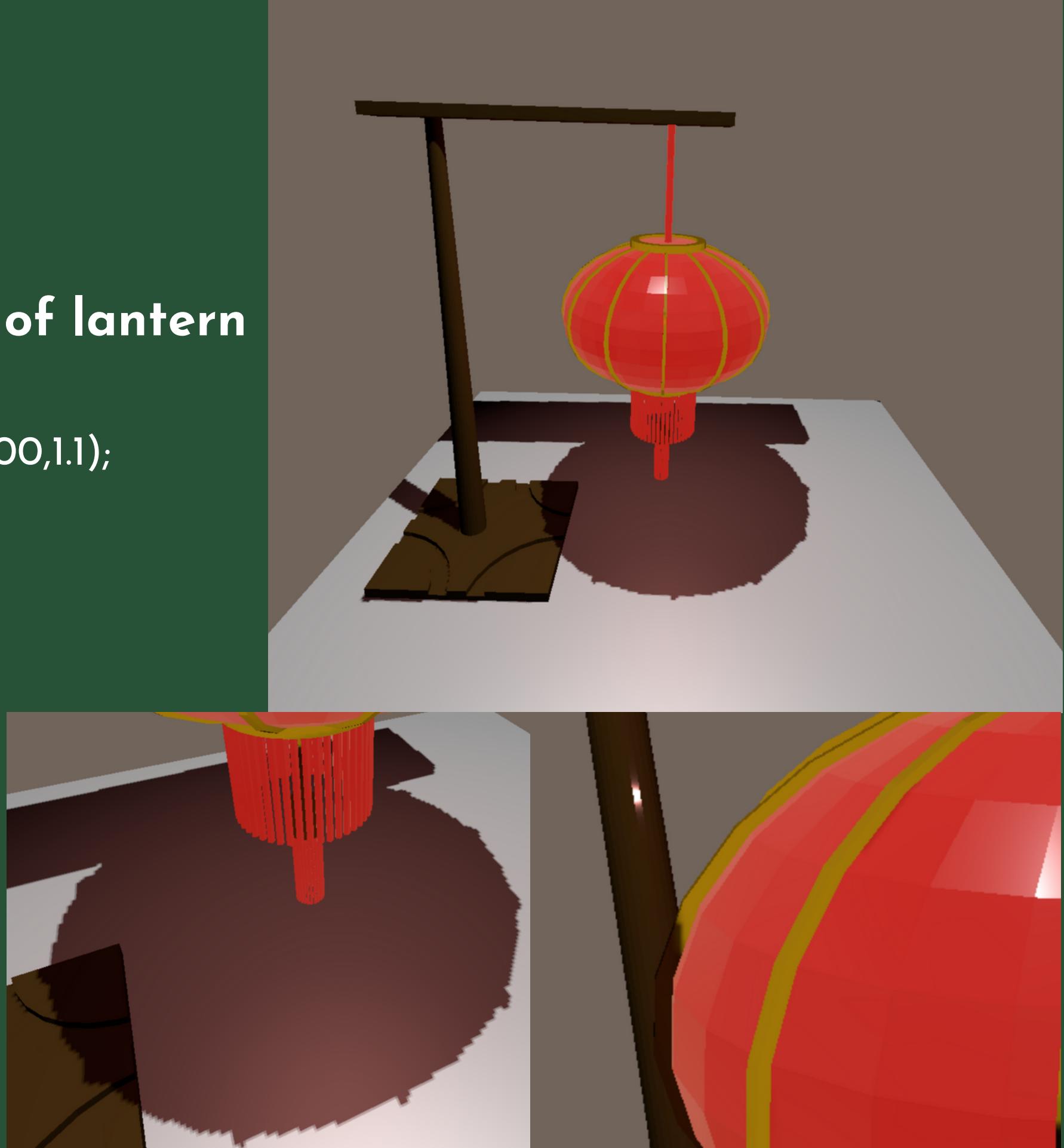
After we added lighting, we could see the reflection of the wood holder on the gold ring

2

Rendering

Adding Secondary Light Source in the middle of lantern

```
const pointlight = new THREE.PointLight(0xec4e46,0.3,300,1.1);
    pointlight.position.set(0, 0, 0);
    scene.add(pointlight);
```

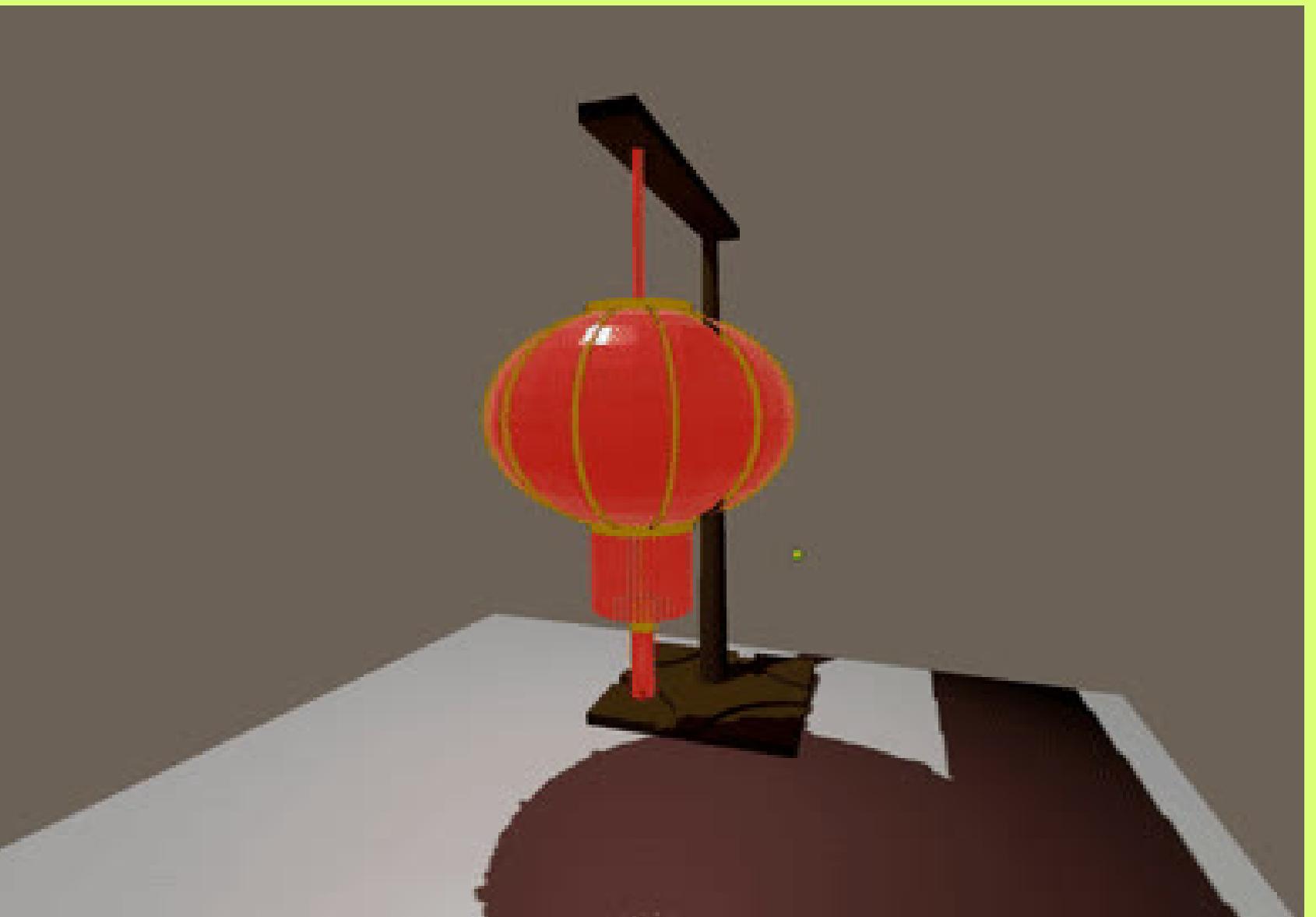


3

Animation

Make Camera Rotate Automatically

```
controls.autoRotate = true;  
controls.autoRotateSpeed = 2.1;  
renderer.render(scene, camera);
```



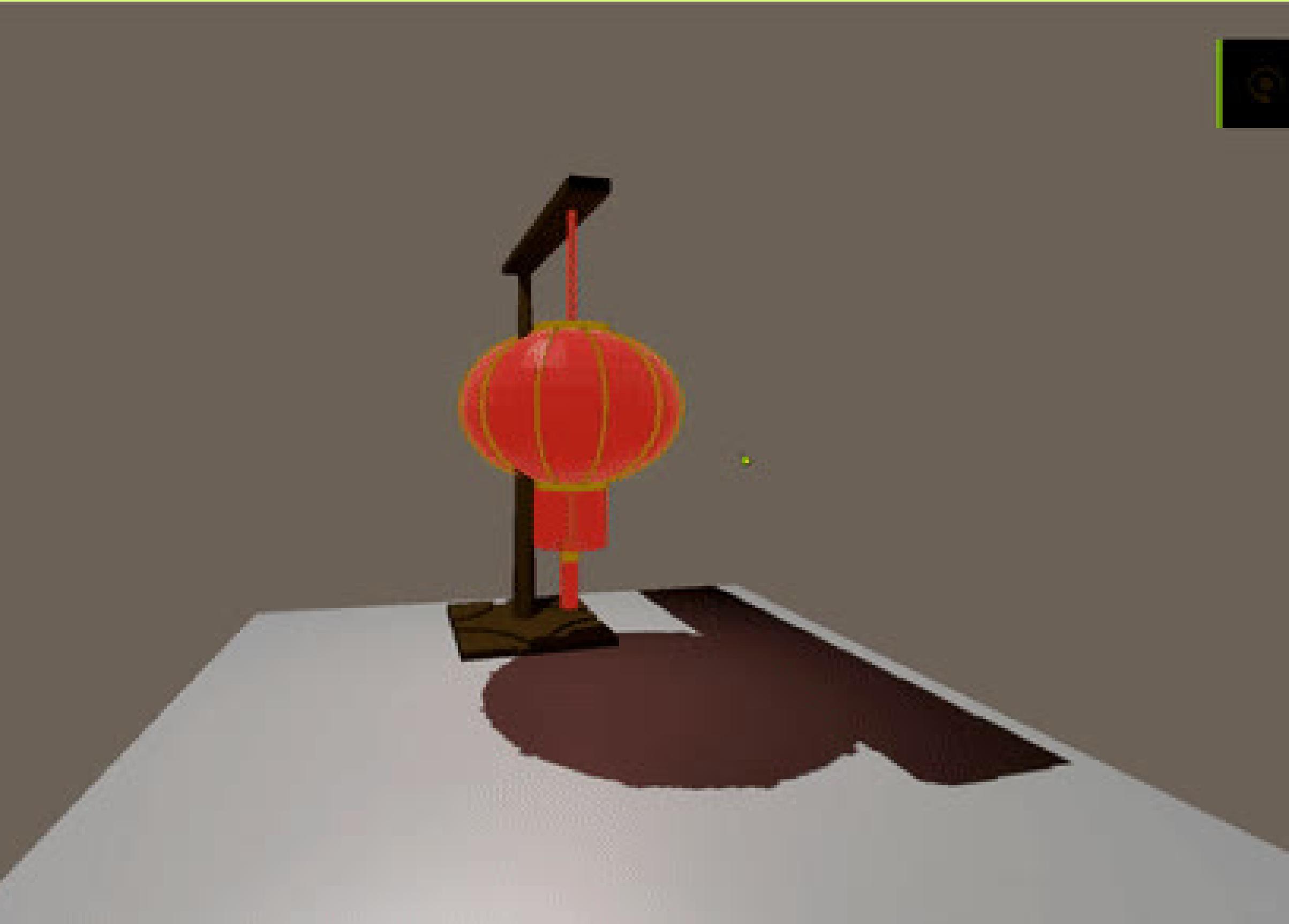
3

Animation

Drag and Release

Users could use the mouse to drag, translate, and zoom in/out camera.

And it will keep rotating automatically after the user releases the mouse.



Conclusion

Future

Future

deficiency&solution

- Create more models for the scene
- Add more detail to the lantern
- Add background Image

Thanks

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