Prerequisites:
1. Docker with vrspace container (created according to Build environment.pdf)
2. Node.js installed

Write the scripts locally:
1. Git clone vrspace into your computer
2. Create a new folder called solipsisworld (change other names if you like) in: vrspace/content/worlds/
3. Add .js and .html file, and a folder js/ in directory vrspace/content/worlds/solipsisworld/ (here I call it solpkg.js and solpkg.html)
4. Download three.js from here: https://threejs.org/build/three.js, and put three.js file in vrspace/content/worlds/solipsisworld/js/
5. Navigate to vrspace/content/worlds/solipsisworld/ and run in terminal:
    a) npm install -g solipsism
    b) npm install -g three
    c) npm install -g browserify
        i. If any error like *EACCES: permission denied occurs* occurs, run: sudo chown -R username /usr/local/lib/node_modules
6. Add a simple solipsism script in vrspace/content/worlds/solipsisworld/solpkg.js:

```javascript
var Sol = require('solipsism');
var scene = new THREE.Scene();
var world = new Sol.GameWorld('Client');
world.addBinding(new Sol.ThreeBinding(require('three'), scene))

world.add({
    type: 'spotlight',
    color: 0xFFFFFF,
    position: [1,10,5],
});

world.add({
    geometry: { type: 'box', size: [ 2, 0.2, 2 ] },
    material: { type: 'lambert', color: 0x007700 },
    mass: 0,
    position: [0, -0.1, 0],
});

world.add({
    geometry: { type: 'sphere', radius: 0.5, widthSegments: 16,
heightSegments: 16 },
    material: { type: 'phong',  color: 0xCC0000, shininess: 60 },
    mass: 5,
    position: [0, 1, 0],
});
```

```javascript
// Add a camera
var camera = new THREE.PerspectiveCamera( 70, 1, 0.01, 100 );
camera.position.z = 3;
camera.position.y = 1;
camera.aspect = window.innerWidth / window.innerHeight;
camera.updateProjectionMatrix();
scene.add(camera);

// Add a renderer
var renderer = new THREE.WebGLRenderer();
renderer.setSize( window.innerWidth, window.innerHeight );
document.body.appendChild(renderer.domElement);

function animate() {
    requestAnimationFrame(animate);
    renderer.render(scene, camera);
}
animate();
```

Note: there is a typo in solipsism Readme: there is no type called "light". You need to change it into "spotlight"

7. Run in terminal: browserify solpkg.js > bundle.js
8. Add simple html code to vrspace/content/worlds/solipsisworld/solpkg.html:

```html
<html>
<head>
    <meta charset=utf-8>
    <title>My first Solipsis app</title>
    <style>
        body { margin: 0; }
        canvas { width: 100%; height: 100% }
    </style>
</head>
<body>
<script src="./js/three.js"></script>
<script src="./bundle.js"></script>
</body>
```

9. Now you can open solpkg.html file, and you can see a red ball above a green box.

Apply script to vrspace server:
1. Open Docker and start the container
2. Open the terminal and run: docker ps
You can see a list of container IDs that you are currently running, including the vrspace

container.

```
CONTAINER ID    IMAGE             COMMAND    CREATED        STATUS        PORTS
                                    NAMES
f50868f530ab    vrspace:latest    "bash"     2 weeks ago    Up 5 days     0.0.0.0:8080
->8080/tcp, 0.0.0.0:8443->8443/tcp   infallible_lichterman
```

3. Copy the container ID in the above output
4. Run in terminal: sudo docker cp (your vrspace directory)/vrspace/content/worlds/solipsisworld (the container ID you copied):/home/vrspace/content/worlds/solipsisworld
5. Open CLI for the vrspace container (same as what you have done when building the environment)
6. In CLI run (same as you did when building the environment):
   a) cd vrspace
   b) cd server
   c) cd target
   d) java -jar server-0.4.7-SNAPSHOT.jar
7. Open http://localhost:8080/content/worlds/solipsisworld/solpkg.html, then you can see:
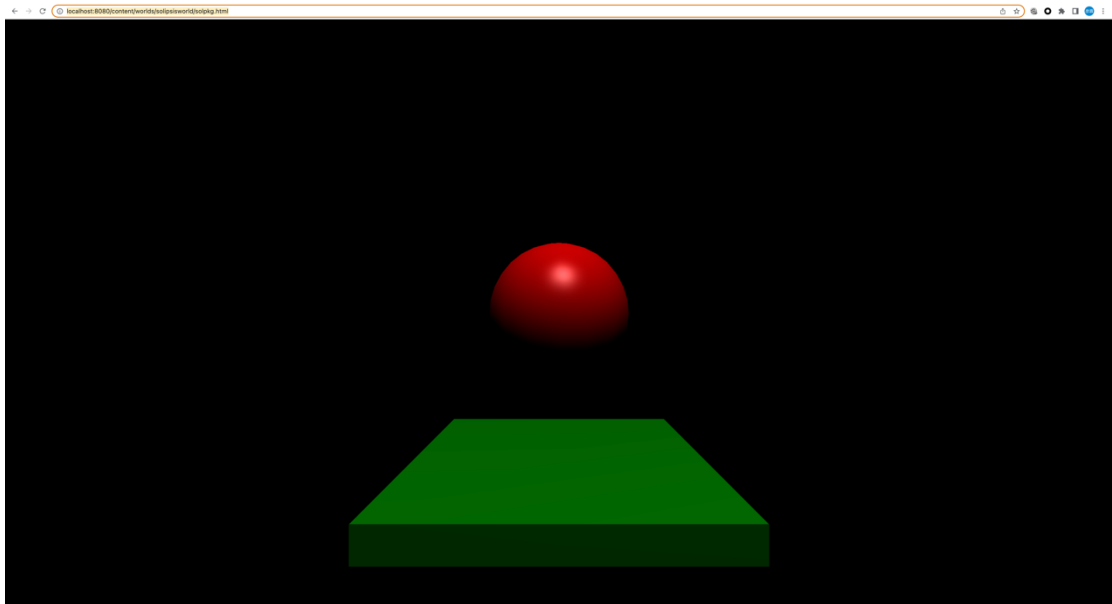
Further steps:
1. Each time you edit your .js scripts, you need to run browserify solpkg.js > bundle.js again
2. Each time after all edits locally, you can update the original solipsisworld folder in docker container by:
   a) In CLI:
      i. cd vrspace
      ii. cd content
      iii. cd worlds
      iv. rm -rf solipsisworld
   b) In terminal: sudo docker cp (your vrspace directory)/vrspace/content/worlds/solipsisworld (the container ID you copied):/home/vrspace/content/worlds/solipsisworld