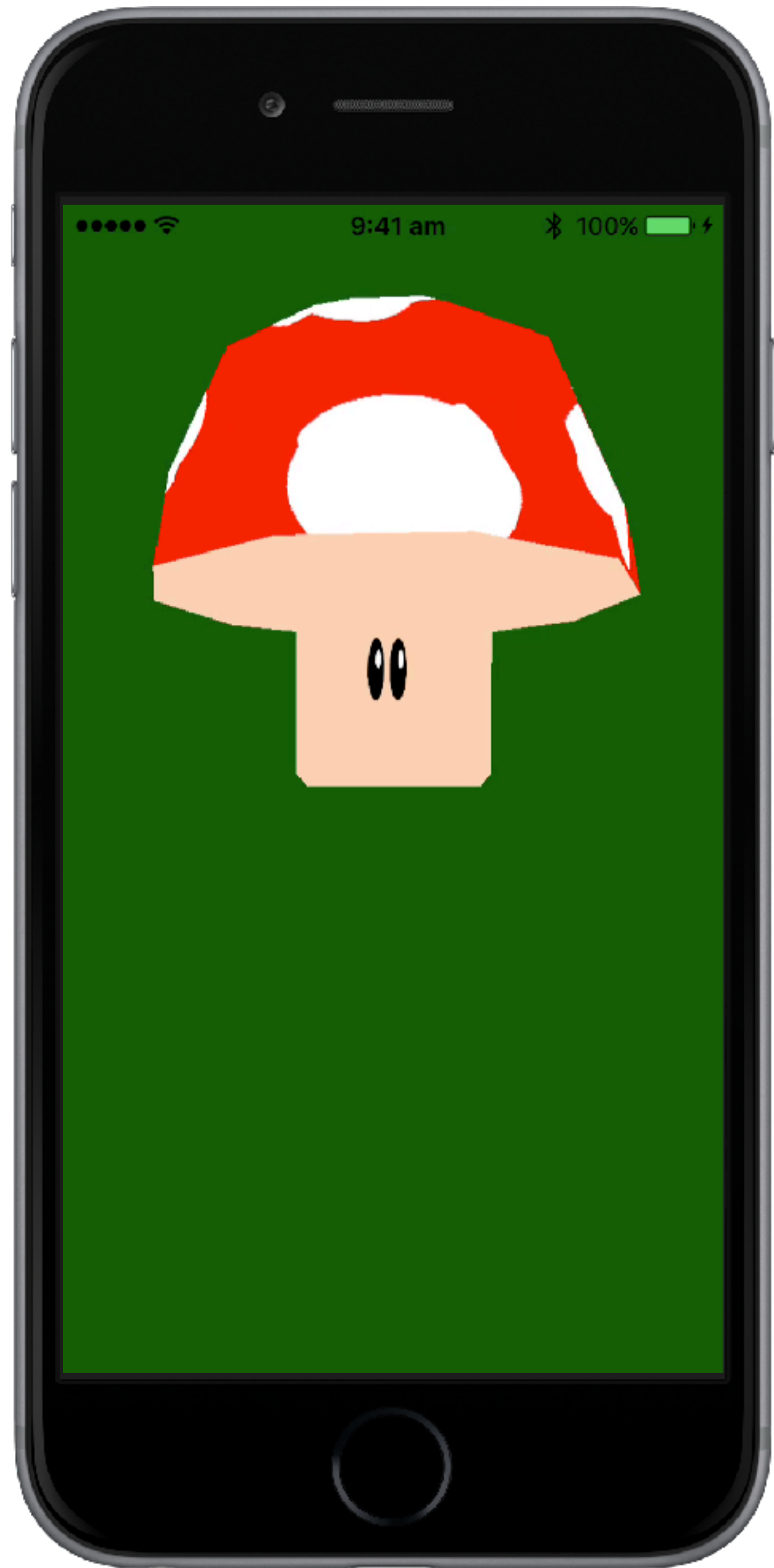


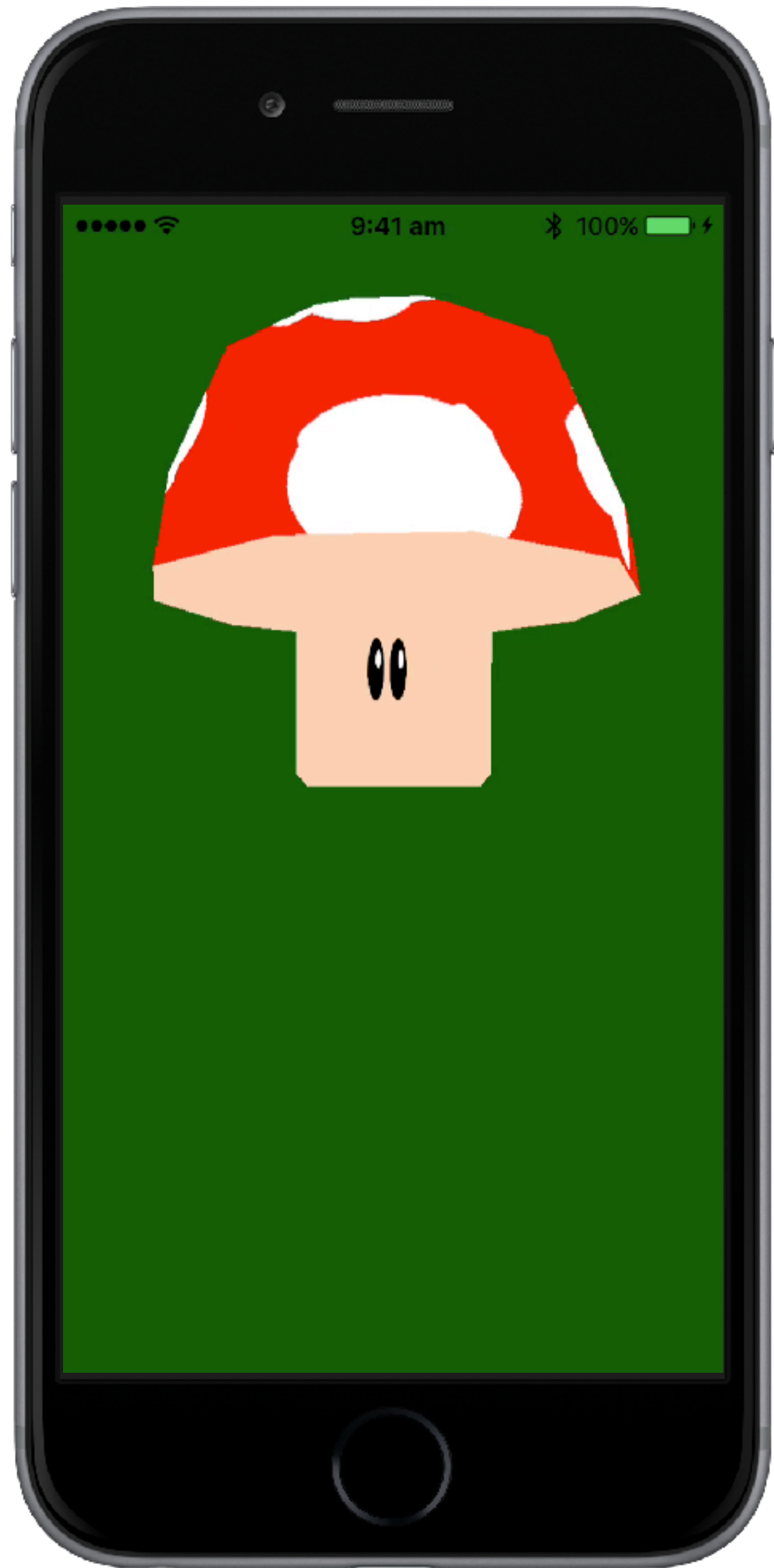


BEGINNING METAL



PART 9: MODEL I/O





WAVEFRONT .OBJ FORMAT

- ⚙ Blender (free)
- ⚙ Cheetah 3D
- ⚙ Maya
- ⚙ Wings 3D (free)
- ⚙ Silo



WAVEFRONT .OBJ FORMAT

```
# WaveFront *.obj file (generated by Cheetah3D)

mtllib plane.mtl

g Plane
v -1.500000 0.000000 -1.500000
v -1.500000 0.000000 1.500000
v 1.500000 0.000000 -1.500000
v 1.500000 0.000000 1.500000

vt 0.000000 1.000000
vt 1.000000 1.000000
vt 1.000000 0.000000
vt 0.000000 0.000000

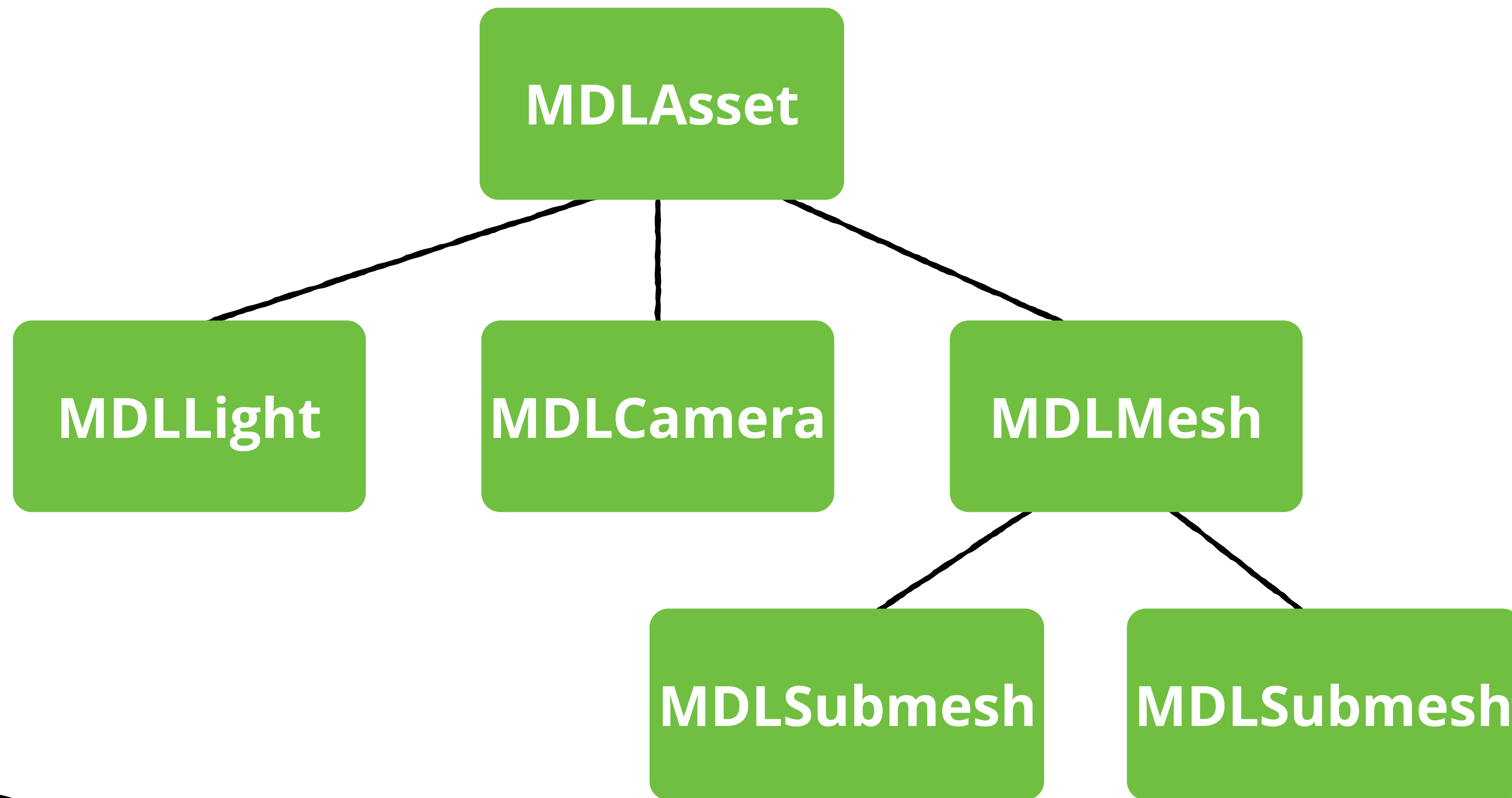
vn 0.000000 1.000000 0.000000

usemtl default
f 2/4/1 4/3/1 3/2/1 1/1/1
```

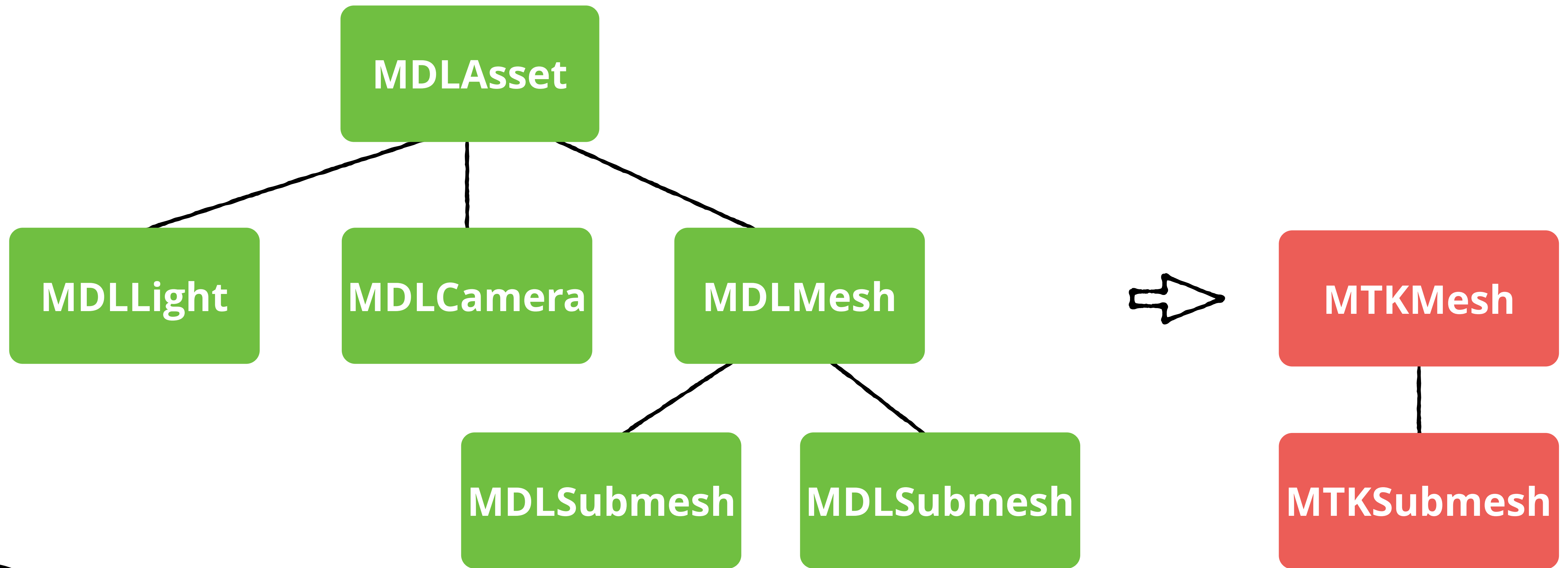
MODEL IMPORT WITH MODEL I/O



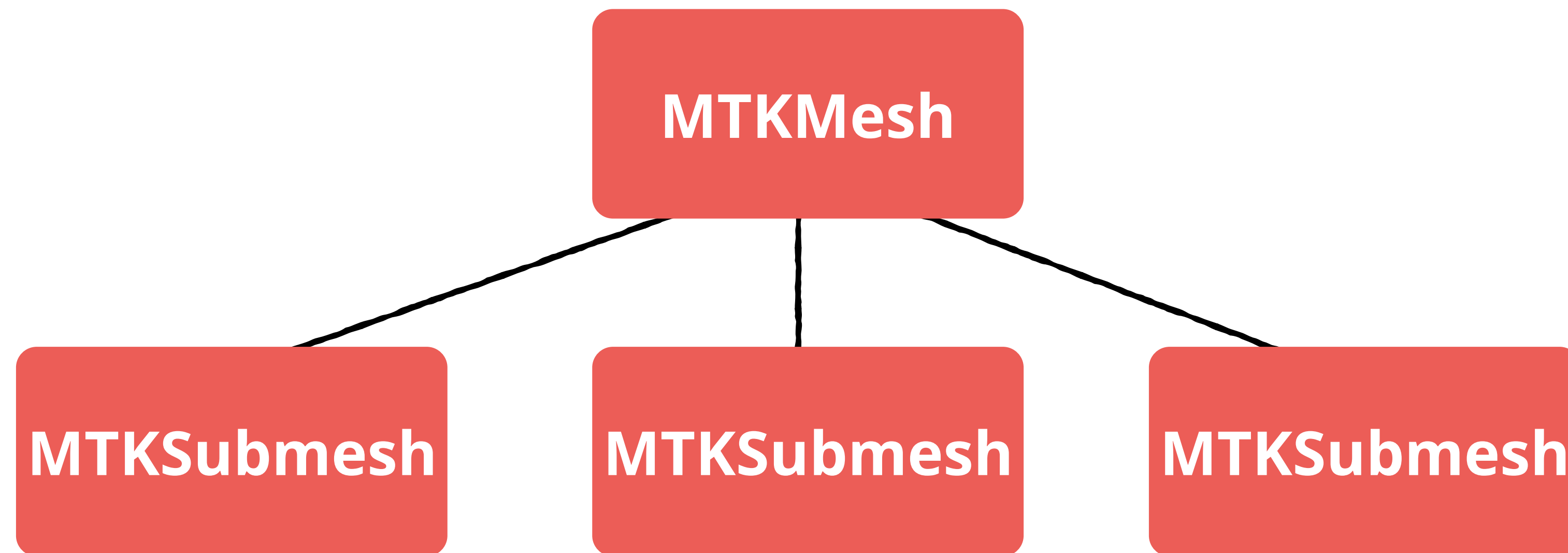
MODEL IMPORT WITH MODEL I/O



MODEL IMPORT WITH MODEL I/O

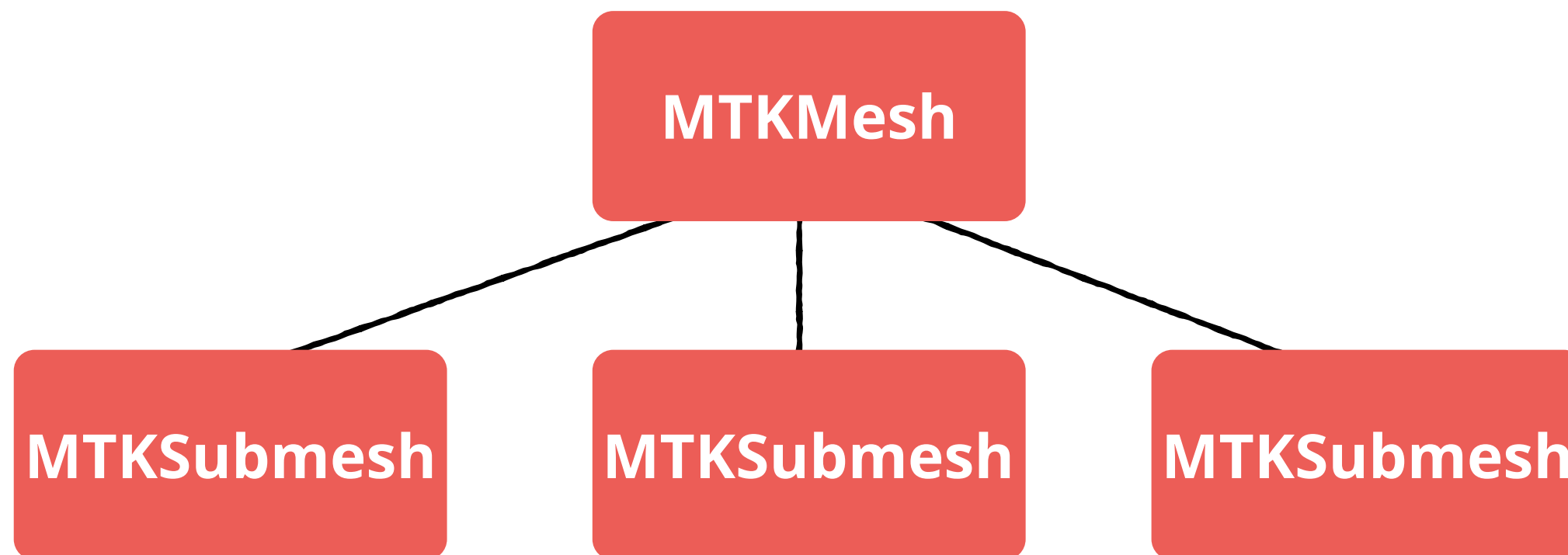


RENDERING THE MODEL



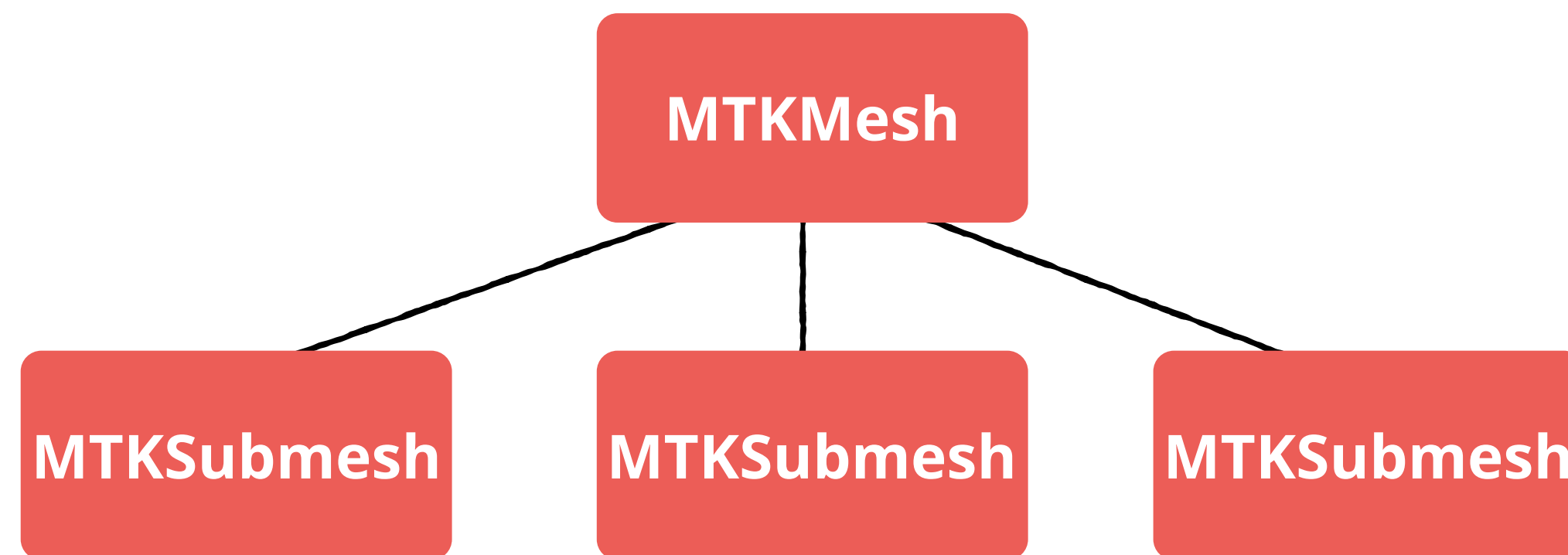
RENDERING THE MODEL

```
for mesh in meshes {
```



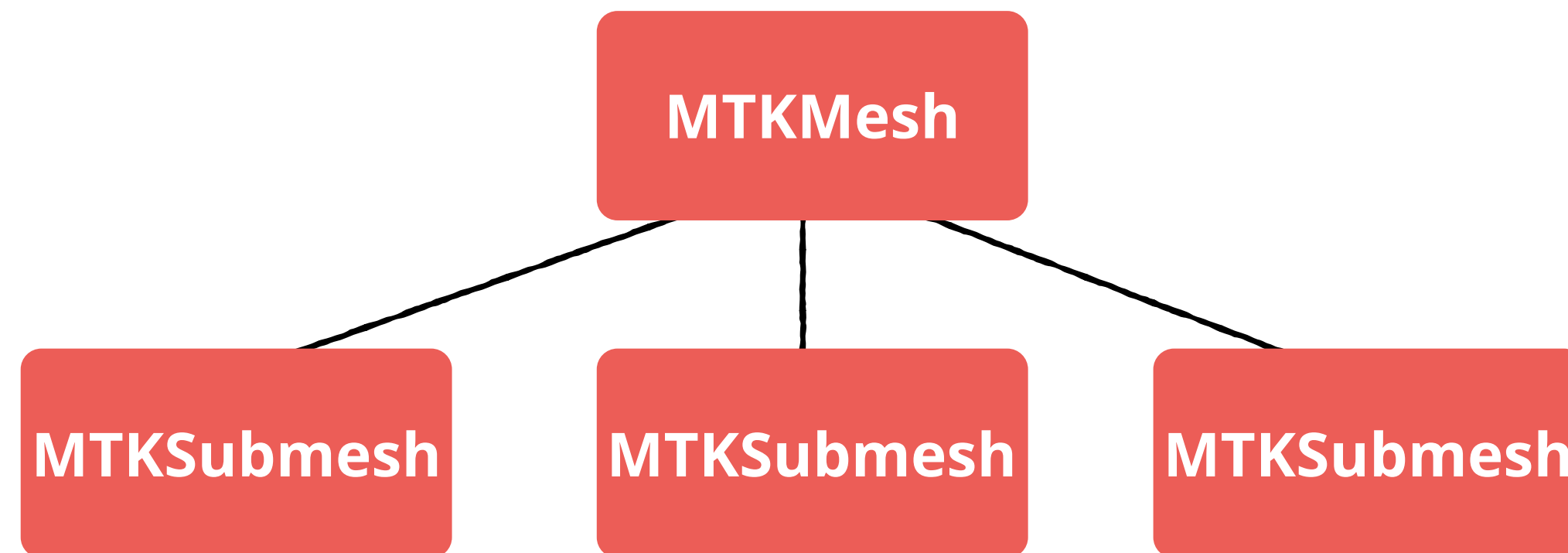
RENDERING THE MODEL

```
for mesh in meshes {  
    let vertexBuffer = mesh.vertexBuffers[0]
```



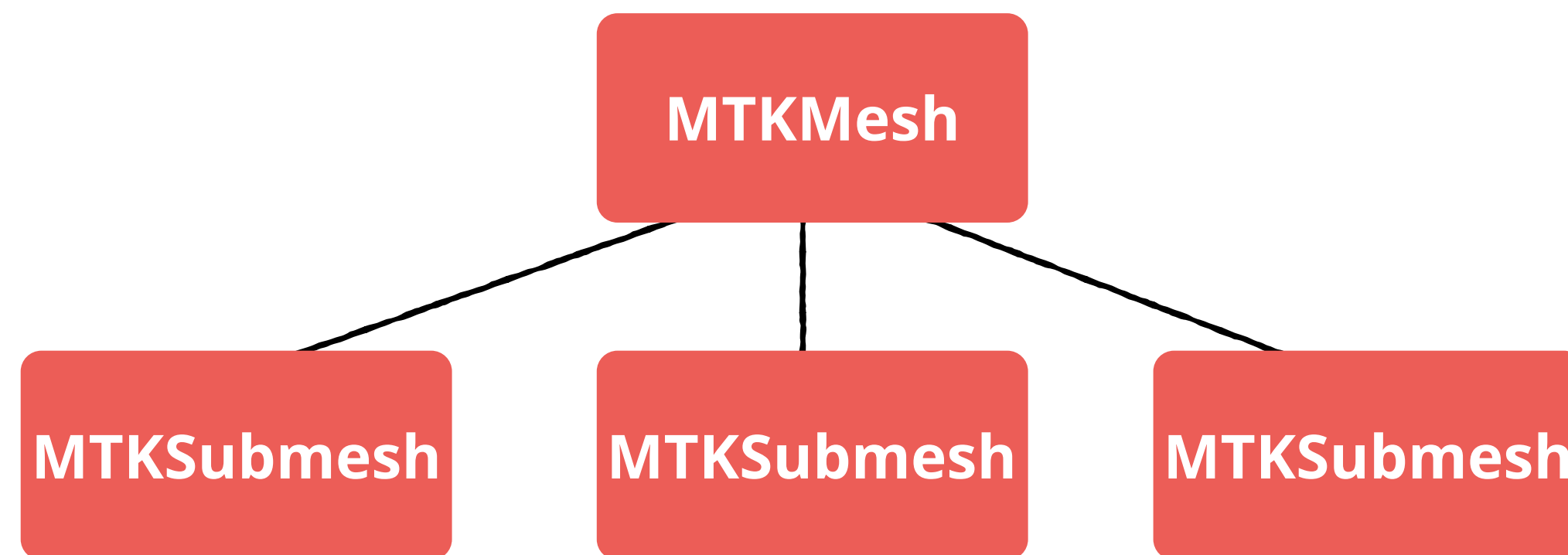
RENDERING THE MODEL

```
for mesh in meshes {  
  let vertexBuffer = mesh.vertexBuffers[0]  
  commandEncoder.setVertexBuffer(vertexBuffer.buffer, offset: vertexBuffer.offset, at: 0)
```



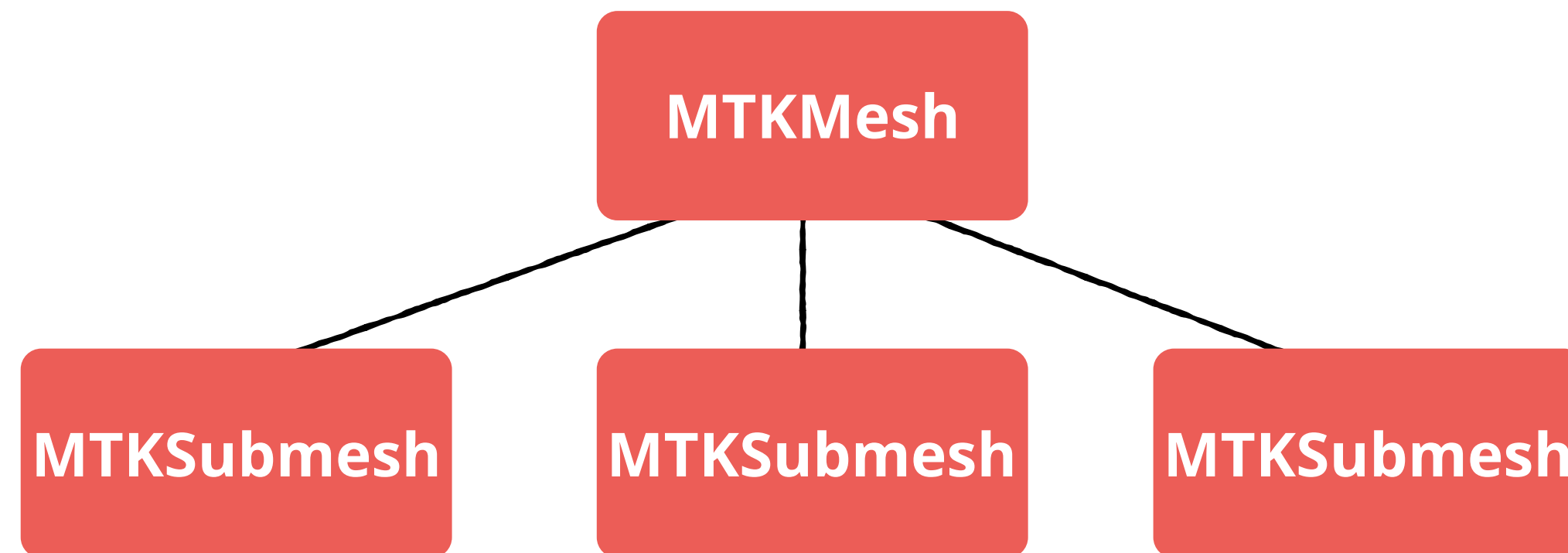
RENDERING THE MODEL

```
for mesh in meshes {  
  let vertexBuffer = mesh.vertexBuffers[0]  
  commandEncoder.setVertexBuffer(vertexBuffer.buffer, offset: vertexBuffer.offset, at: 0)  
  for submesh in mesh.submeshes {
```

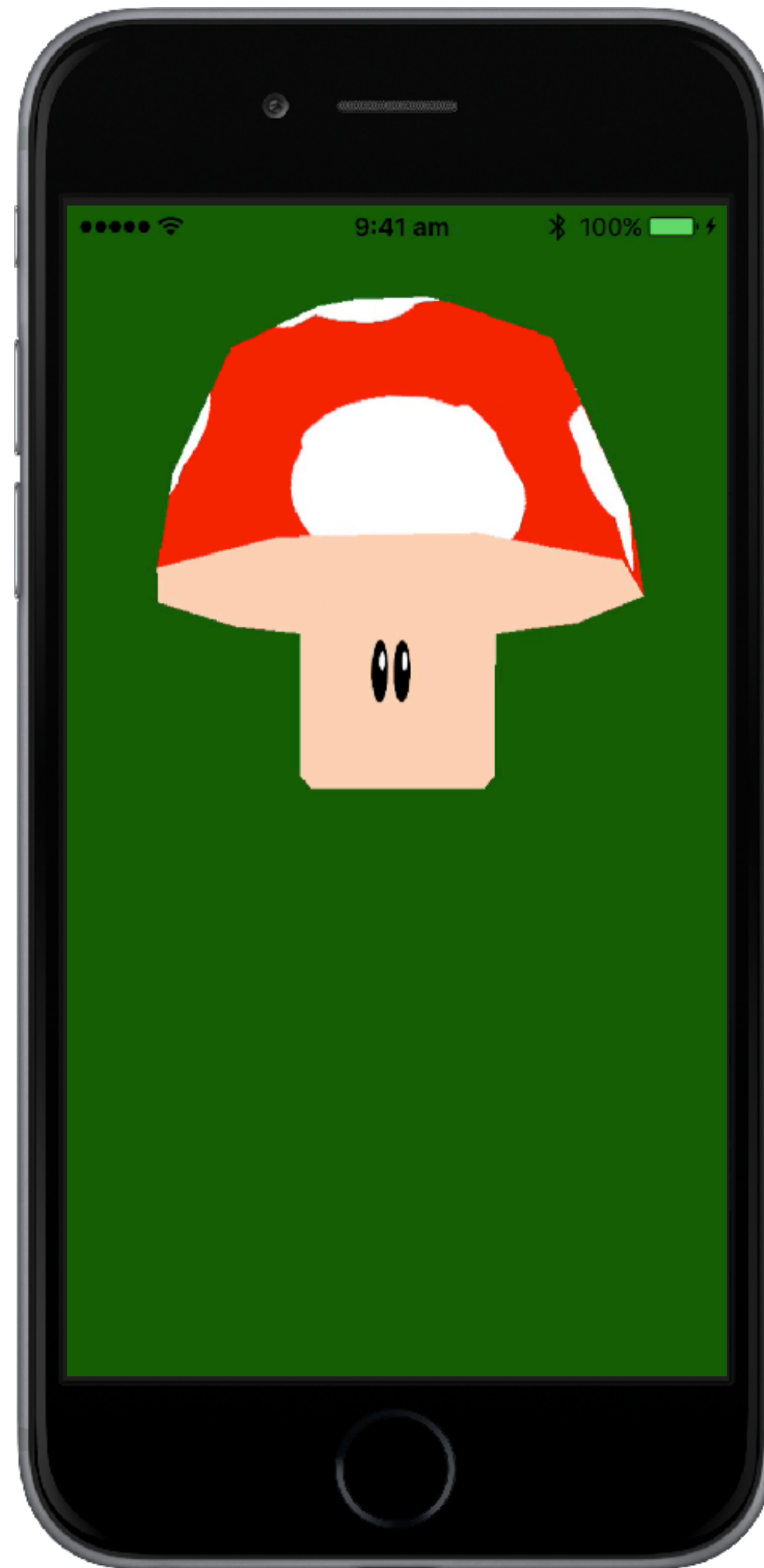


RENDERING THE MODEL

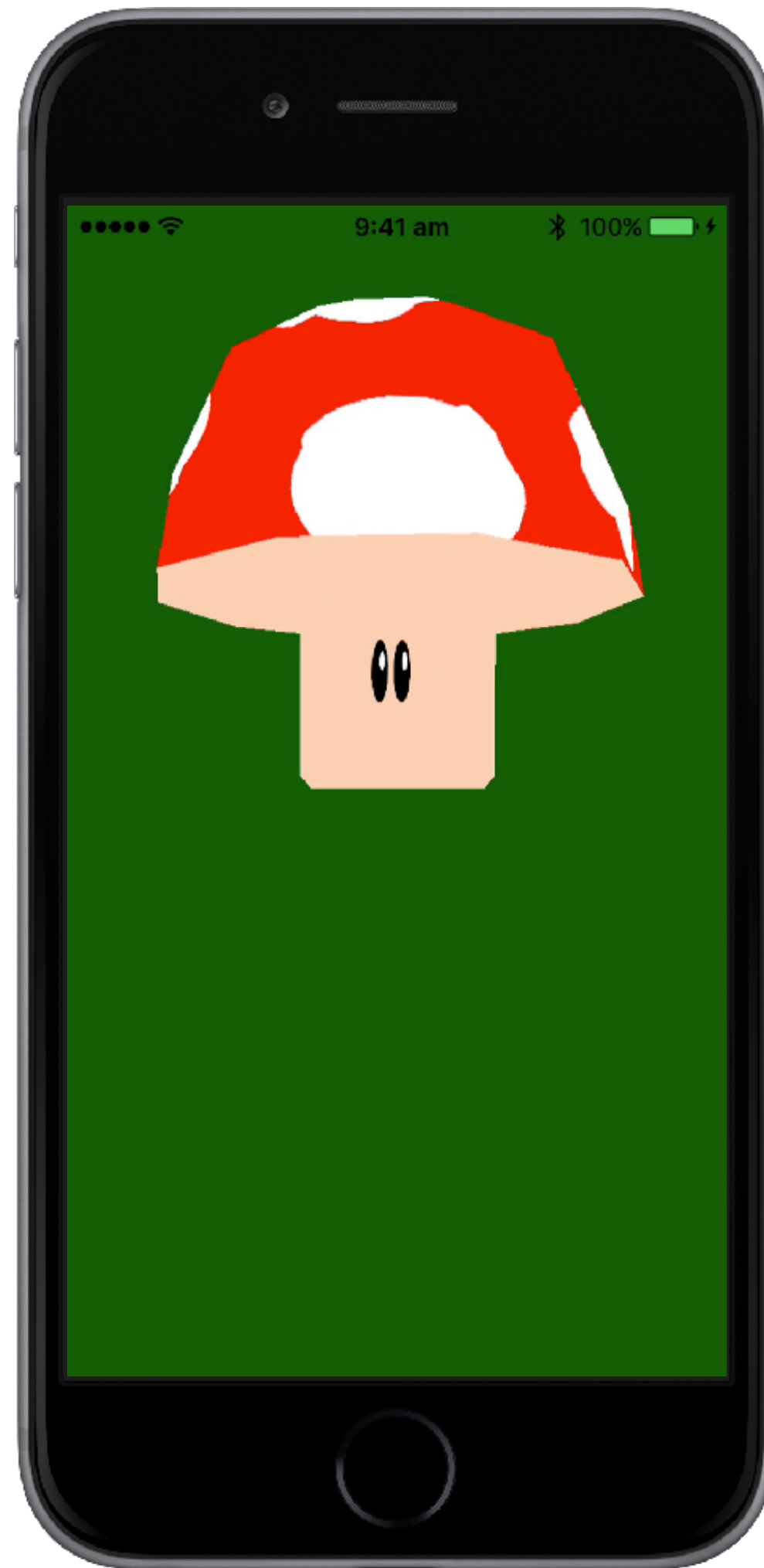
```
for mesh in meshes {  
  let vertexBuffer = mesh.vertexBuffers[0]  
  commandEncoder.setVertexBuffer(vertexBuffer.buffer, offset: vertexBuffer.offset, at: 0)  
  for submesh in mesh.submeshes {  
    commandEncoder.drawIndexedPrimitives(type: submesh.primitiveType,  
                                          indexCount: submesh.indexCount,  
                                          indexType: submesh.indexType,  
                                          indexBuffer: submesh.indexBuffer.buffer,  
                                          indexBufferOffset: submesh.indexBuffer.offset)  
  }  
}
```



DEMO



DEMO



CHALLENGE TIME!

