

## Extra Credit Assignment

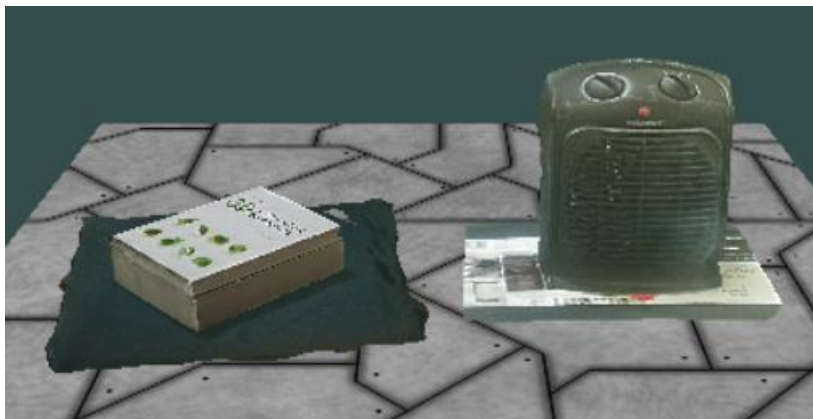
- *Scan a real-world object and load it into a project*

### **Abstract:**

- *Scanned real world 3d model (2 Objects) and loaded it into the project with the textures*

### **Real World 3d Models Scanned:**

- *My Heater*
- *Computer Graphics Book with other book in the bottom*



### **Tools Used:**

- 123dapp
- Autodesk Remake
- Blender
- Crazybump
- Gimp 2

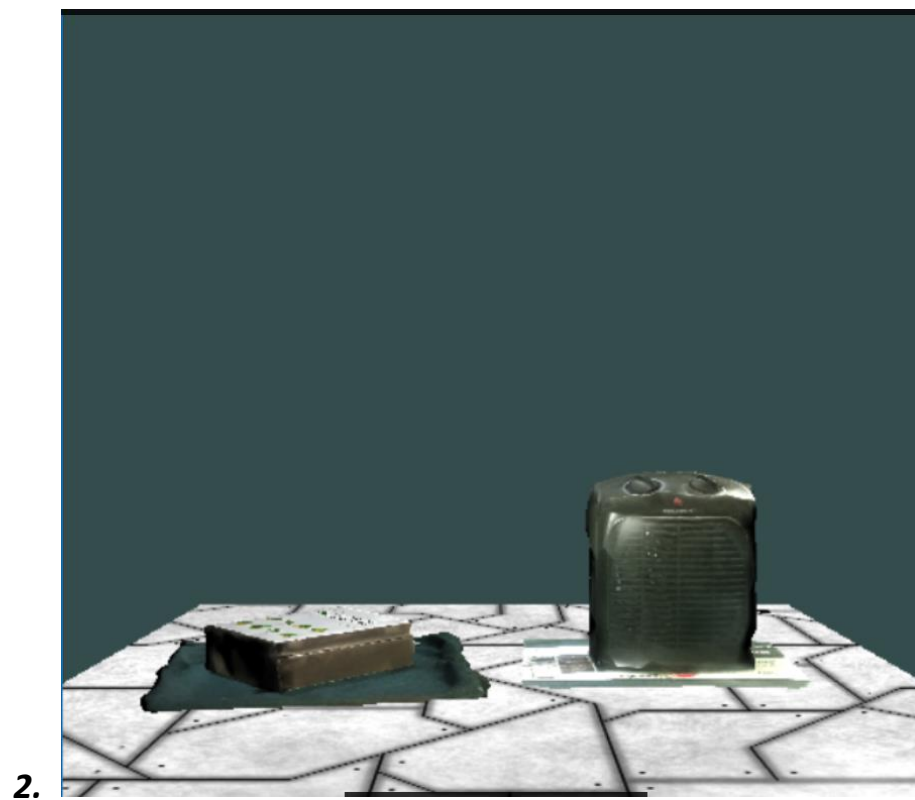
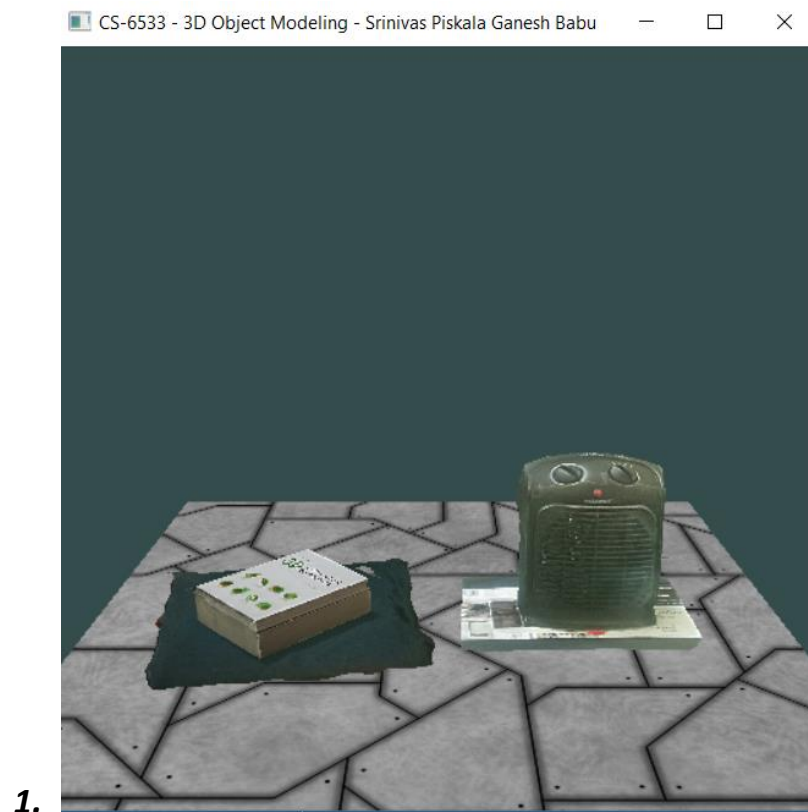
### **Code Used:**

- *Same as in the Assignment 3 – Texture Mapping Topic*

### **Project Location:**

- *With only the Diffuse Texture*  
[https://github.com/Srinivas11789/CS6533---Computer-Graphics/tree/master/Assignment-Extra-2-RealWorldModel\\_DiffuseOnly](https://github.com/Srinivas11789/CS6533---Computer-Graphics/tree/master/Assignment-Extra-2-RealWorldModel_DiffuseOnly)
- *With Positional Lights, Diffuse and Specular Texture*  
<https://github.com/Srinivas11789/CS6533---Computer-Graphics/tree/master/Assignment-Extra-2-RealWorldModels-%20Spectral%20and%20Lights>

**Output:**



### Challenges:

- The Objects with the (Normal Maps) Binormal and Tangent Attributes get too much time to render (Not Sure of the cause) and ultimately fails. (Not sure if it is machine specific cause – my machine hangs a lot ) ( Windows 4GB RAM ?)
- The Diffuse Only Part and the Part till Positional Lights and Specular Maps Works

### Process:

#### → 123dapp:

- Used 123dapp from an android mobile to capture image of the real-world object
- Followed the guidelines to make a better capture by using sticky notes around to map the object at the centre
- Scanned the model by taking around 30 – 40 photographs about the object's y axis and from over the object at a higher level
- Once the 3d Models were ready from 123dapp downloaded the object files and the textures
- The 123dapp rips off the texture coordinates when exporting the object files !

#### → AutoDesk ReMake:

- Used Autodesk remake to fetch the models
- Cropped (Cut) the background scene to extract the model alone
- Checked the texture obtained in the 3d view
- Scaled and rotated the object to desired level
- Exported the object file with the texture coordinates, normal and with reduced amount of decimation mesh. As the object with higher amount of vertices causes the opengl to render slowly
- This positioned the geometry away from the origin (not sure of the cause!) hence the model exported by remake was not rendered in opengl

#### → Blender:

- Imported the 3d model exported by remake
- Had to move the geometry to origin
- Applied texture
- Exported the object again ensuring all the options correct.

#### → Crazy Bump:

- Spectral and Diffuse texture with some added enhancements and export in required format

#### → Gimp 2:

- Reduce the size of the tga files

