3D Model Viewer – Test Documents

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# Testing Documentation

## Black-box Testing

### Test Case # 101 – Load and Render 3D model

**Requirements Tested**

3.1.1

**Rationale**

After Selecting a .OBJ file a 3D model of the object should be loaded onto the screen

**Steps**

1. Press the “Open File” button
2. A file browser window opens, select the desired .OBJ file
3. After selecting the file the object is rendered in the content window.

**Expected Output**

Pressing the “Open File” button will bring up the file browser, after selecting a .OBJ file the model is rendered on the screen

**Outcome** **PASS or FAIL**

**Notes**

### Test Case #102 – Rotate 3D Model

**Requirements Tested**

3.1.6

**Rationale**

Clicking and moving the mouse rotate the 3D model accordingly

**Steps**

1. Click the 3D Model and move the mouse to the left
2. Click the 3D Model and move the mouse to the Right

**Expected Output**

The 3D model should rotate right and rotate left in accordance the direction the mouse is moved.

**Outcome** **PASS or FAIL**

**Notes**

### Test Case #103 – Zoom

**Requirements Tested**

3.1.7

**Rationale**

The scroll wheel provided zoom functionality for the 3D model

**Steps**

1. Click on the 3D model and scroll the wheel forward.
2. Click on the 3D model and scroll the wheel backward.

**Expected Output**

Scrolling the wheel forward should zoom in on the 3D model. Scrolling the wheel backward should zoom out on the 3D model.

**Outcome** **PASS or FAIL**

**Notes**

### Test Case #104 – 3D Model Popup Button

**Requirements Tested**

3.1.8

**Rationale**

Sample 3D models is provided to show application functionality

**Steps**

1. Click on the “3D Model” popup button.
2. Click on one of the provided 3D models.

**Expected Output**

After clicking on a 3D model name, the model should be rendered in the content view.

**Outcome** **PASS or FAIL**

**Notes**

### Test Case #105 – Lighting

**Requirements Tested**

3.1.2

**Rationale**

Lighting should be enabled if there is lighting information

**Steps**

1. Click on the “Lighting Enable” popup button.
2. Click on “Disable GL\_LIGHT0”
3. Click on “Enable GL\_LIGHT0”

**Expected Output**

When “Disable GL\_LIGHT0” is selected the object will be rendered with rainbow colored lines because there is no lighting. When “Enable GL\_LIGHT0” is selected the object will be rendered in black lines. White lines will be used on where the lighting is set on the object.

**Outcome** **PASS or FAIL**

**Notes**

### Test Case #106 – Shading

**Requirements Tested**

3.1.3

**Rationale**

Two shading formats are provided flat and smooth.

**Steps**

1. Click on the “Shading Model” popup button.
2. Click on “Flat Shading”
3. Click on “Smooth Shading”

**Expected Output**

When “Flat Shading” is selected the object’s polygons will be shaded. When “Smooth Shading” is selected the color changes from pixel to pixel

**Outcome** **PASS or FAIL**

**Notes**

### Test Case #107 – Rendering mode

**Requirements Tested**

3.1.4

**Rationale**

Two rendering modes are provided wireframe and solid.

**Steps**

1. Click on the “Rendering Mode” popup button.
2. Click on “Wireframe Mode”
3. Click on “Solid Mode”

**Expected Output**

When “Wireframe Mode” is selected the object’s surface polygons will not be filled in allowing transparency. When “Solid Mode” is selected the object’s surface polygons will be filled in **not** allowing transparency.

**Outcome** **PASS or FAIL**

**Notes**

### Test Case #108 – Surface Normal

**Requirements Tested**

3.1.5

**Rationale**

Surface normals will be provided

**Steps**

1. Check the “Show Surface Normals” check box.
2. Un-check the “Show Surface Normals” check box.

**Expected Output**

When “Show Surface Normals” is checked the normals on the surface of the 3D model will be drawn. When “Show Surface Normals” is unchecked no normals will be displayed.

**Outcome** **PASS or FAIL**

**Notes**

## White-box Testing

### Test Case #109 Check Parser/Loader algorithm

**Requirements Tested**

3.2.1 and 3.2.2

**Rationale**

Two rendering modes are provided wireframe and solid.

**Steps**

1. Click on the “Rendering Mode” popup button.
2. Click on “Wireframe Mode”
3. Click on “Solid Mode”

**Expected Output**

When “Wireframe Mode” is selected the object’s surface polygons will not be filled in allowing transparency. When “Solid Mode” is selected the object’s surface polygons will be filled in **not** allowing transparency.

**Outcome** **PASS or FAIL**

**Notes**