Assessment Evaluation

For Environment Model Building Tool (EMBT)

Version 1.0

Submitted in partial fulfillment of the requirements of the degree of MSE

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1. **Introduction**

This document presents the results of the functional testing. The Test Case’s are in reference to the Test Case’s defined in the Test Plan 1.0 from Phase 2.

Reference:
- Test Plan 1.0

2. **Test Case Results Summary**

<table>
<thead>
<tr>
<th>Test Case #</th>
<th>Test Unit</th>
<th>SR(‘s) Tested</th>
<th>Result/Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Object Building Tool</td>
<td>SR12, SR13</td>
<td>Passed</td>
</tr>
<tr>
<td>2</td>
<td>Object Building Tool</td>
<td>SR17</td>
<td>Passed</td>
</tr>
<tr>
<td>3</td>
<td>Object Building Tool</td>
<td>SR15, SR16</td>
<td>Passed</td>
</tr>
<tr>
<td>4</td>
<td>Object Building Tool</td>
<td>SR18</td>
<td>Passed</td>
</tr>
<tr>
<td>5</td>
<td>Object Building Tool</td>
<td>SR19</td>
<td>Passed</td>
</tr>
<tr>
<td>6</td>
<td>Object Building Tool</td>
<td>SR20, SR23</td>
<td>Passed</td>
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<tr>
<td>7</td>
<td>Object Building Tool</td>
<td>SR14</td>
<td>Passed</td>
</tr>
<tr>
<td>8</td>
<td>Object Building Tool</td>
<td>SR13.1</td>
<td>Passed</td>
</tr>
<tr>
<td>9</td>
<td>Terrain Building Tool</td>
<td>SR6, SR7</td>
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</tr>
<tr>
<td>10</td>
<td>Terrain Building Tool</td>
<td>SR9, SR10</td>
<td>Untested – Feature not implemented and it will be a Future Requirement</td>
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<tr>
<td>11</td>
<td>Terrain Building Tool</td>
<td>SR11</td>
<td>Passed</td>
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<td>12</td>
<td>Terrain Building Tool</td>
<td>SR21, SR23</td>
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<td>13</td>
<td>Terrain Building Tool</td>
<td>SR8</td>
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<td>14</td>
<td>Environment Model Building Tool</td>
<td>SR1, SR2, SR5.1, SR5.2, SR5.3, SR5.4</td>
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<td>15</td>
<td>Environment Model Building Tool</td>
<td>SR2</td>
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<td>16</td>
<td>Environment Model Building Tool</td>
<td>SR3</td>
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<td>17</td>
<td>Environment Model Building Tool</td>
<td>SR4</td>
<td>Untested – Feature not implemented and it will be a Future Requirement</td>
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<tr>
<td>18</td>
<td>Environment Model Building Tool</td>
<td>SR22, SR23</td>
<td>Passed</td>
</tr>
<tr>
<td>19</td>
<td>Environment Model Building Tool</td>
<td>SR24, SR25, SR26</td>
<td>Passed</td>
</tr>
</tbody>
</table>
3. Test Case Result Detail

3.1. Test Case 1 – Loading Shapes
This test case was successfully passed. All the primitive shapes could be loaded onto the building surface and were visible.

3.2. Test Case 2 – Resizing Shapes
This test case passed. All the primitives were resized by first clicking in the shape to bring up its properties window, and then using the controls on the properties window the shape could be resized.

3.3. Test Case 3 – Changing the Weight and Color
This test case passed. All the primitives could have their weight and color changed from the properties window.

3.4. Test Case 4 – Moving Shapes
This test case passed. All the primitives could be moved with the x, y, and z controls on the properties window. The three different viewing perspectives made it easy to line up and stack the shapes on top of each other.

3.5. Test Case 5 – Zooming In and Out
This test case passed. From the 3-D viewing tab the scene could be zoomed in and out by holding down Alt then left clicking the mouse and then moving the mouse up and down.

3.6. Test Case 6 – Viewing in 3-D
This test case passed. From the 3-D viewing tab the scene could viewed from all angles.

3.7. Test Case 7 – Saving to Library
This test case passed. Selecting “Save to Library” from the File menu provide a pop-up window to name the object. After providing a name and clicking the “OK” button the object is saved to the library and is added to the tree that displays a list of the library of objects.

3.8. Test Case 8 – Reusing Saved Objects
This test case passed. The previous saved object was available to add. Four of the objects were added and moved into position. One improvement would be to have the option to move the added object as a group. At the time of testing the object could only be moved by moving its primitive shapes.

3.9. Test Case 9 – Modifying Elevation
This test case passed. The tool provided a grid of point to modify. The elevation was adjusted by a slider bar. The values were form 1-100. After selecting an elevation a point on the grid could be clicked and its elevation would change to value of the slider bar. The zero elevation points were black while the higher elevation points were color shades of green; lighter shades of green represented higher elevations.

3.10. Test Case 10 – Setting a Texture
This test case was untested. At the time of testing there was no way to set a texture for a region. This feature will be future requirement.

3.11. Test Case 11 – Zooming In and Out
This test case passed. From the 3-D viewing tab the scene can be zoomed in and out by using the mouse.
3.12. **Test Case 12 – Viewing In 3-D**
This test case passed. From the 3-D viewing tab the scene could be viewed from any angle.

3.13. **Test Case 13 – Saving to Library**
This test case passed. Selecting “Save to Library” from the **File** menu provide a pop-up window to name the terrain. After providing a name and clicking the “OK” button the terrain is saved to the library and is added to the tree that displays a list of the library of terrains.

3.14. **Test Case 14 – Adding Objects and Terrains**
This test case passed. The terrain and objects were successfully added. One improvement could be to have an added object sit flush on the surface. At the current time of test the added object was placed at (0, 0, 0), but the elevation of the terrain was much higher at that point, so the object was underneath the surface of the terrain.

3.15. **Test Case 15 – Moving the Objects**
This test case passed. The objects were able to be moved by clicking on them, from the building surface, and using the controls of the provided properties window to move the objects position.

3.16. **Test Case 16 – Setting the Camera**
This test case was untested. This feature will be a future requirement.

3.17. **Test Case 17 – Setting the lights**
This test case was untested. This feature will be a future requirement.

3.18. **Test Case 18 – Viewing in 3-D**
This test case passed. From the 3-D viewing tab the scene could be viewed from any angle.

3.19. **Test Case 19 – Saving an Opening**
This test case passed. The environment was successfully saved and re-opened.