

<b>GD2P04</b> <b>Advanced Graphics for Games</b>	<b>Summative Assignment</b>  <b>Summative 2: Framebuffer, Geometry Shader, Heightmap, Tessellation Shader.</b> <b>(25%)</b>	<b>Date: 6th April, 2018</b>  <b>Submission Dates:</b> <b>4th May, 2018</b> <b>Time : 5:30 p.m.</b>
<p style="text-align: center;">Submission filename:  <b><u>YYYY-MM-DD</u> - GD2P04 - Summative 2 - <u>Student Name</u>.zip</b></p>		
<p><b>Technical Demo:</b></p> <p>Create an environment in which the following are demonstrated.</p> <ol style="list-style-type: none"> <li>1) Using a heightmap create a terrain</li> <li>2) Add a game object. The game object should follow the terrain.</li> <li>3) Using Geometry Shader from 1 point create a star.</li> <li>4) Create a LOD with Tessellation Shader.</li> <li>5) Create a frame buffer, create a framebufferTexture2D, render current scene to it and add post processing effect.</li> </ol>		
<p><b>Runtime Quality:</b></p> <p>The application must not have the following issues:</p> <ul style="list-style-type: none"> <li>• Memory leaks, Bugs, Crashes.</li> </ul>		
<p><b>Release Build Zip:</b></p> <p>A release build executable must be zipped and included with the submission. This is equivalent to the final build of the game which is about to be mastered for release. Ensure that project settings are set to Release when creating this build.</p>		
<p><b>Submission Checklist:</b></p> <p><u>Source code folder:</u></p> <ul style="list-style-type: none"> <li>▪ Solution file (.sln), Project file (.vcproj), Source files (.cpp, .h).</li> <li>▪ Library files, if any (.lib), External files such as .ini, .mp3</li> <li>▪ <b>Intermediate files have been removed.</b></li> </ul> <p><u>Release build zip:</u></p> <ul style="list-style-type: none"> <li>▪ Stand alone executable (.exe) file.</li> <li>▪ Readme file (.txt).</li> <li>▪ DLLs and assets (shades/ textures/ sounds/ etc.) to run the exe.</li> </ul> <p><u>Document</u></p> <p>The file structure and file names of the submission must follow the file hierarchy listed below.</p> <ul style="list-style-type: none"> <li>📁 <b><u>YYYY-MM-DD</u> - GD2P04 - Summative3 - <u>Student Name</u>.zip</b> <ul style="list-style-type: none"> <li>📁 <b><u>Source</u> - <u>Student Name</u></b> <ul style="list-style-type: none"> <li>📄 <b><u>Game Name.sln</u></b></li> <li>📄 <b>...Project and source code, etc.</b></li> </ul> </li> </ul> </li> </ul>		

**ASSESSMENT CRITERIA:****Grade D:**

- No work submitted **OR**
- Work submitted but the executable does not work **OR**
- The executable works but it does not demonstrate the tasks enlisted
- Only one technique is implemented.

**Grade C:**

The development of an application that has the following features:

- Using a height map generate a terrain
- Create a framebuffer, create framebufferTexture2D, render current scene to it and add an edge detection post processing effect.

**Grade B, as per grade C and:**

- Using Geometry Shader from 1 point create a star.
- Create a tessellated quad.
- Add a game object to the scene. This object should be able to follow the terrain.

**Grade A, as per grade B and:**

- Using geometry shader for each point of the terrain create quads and add grass texture
- Create a vegetation map to specify where to generate the grass
- Create tessellated quad LOD depending upon camera distance.

**Grade A+, as per grade A and:**

- Create another terrain using tessellation.
- Get height of vertices from the heightmap as texture.
- Specify the level of tessellation.
- Apply a terrain texture to the terrain.
- The application exhibits evidence of additional work beyond the limits set in the assignment brief, in an attempt to make the application more interesting / appealing for the user.

