

Student Name:	David Strikaitis	Student Number:	C00283152
Working Title:	Project Crescent Rise		
Description:	<p>A roguelike planet exploring game. Planets will be procedurally generated with realistic terrain displacements / shapes (mountains, hills, rivers etc). Upon these planets will be basic enemies to fight, the player is to explore the planet and find a portal to leave the planet and move to the next one, where the next will be then generated again. The gameplay loop will need to be refined depending on how the terrain generation works, the game will need a custom physics engine, custom terrain generation, terrain optimisation and lots of other 3d software optimisation.</p> <p>The player will be in a first person view where they can explore different things that spawn on the map and find their way through terrain to the end goal, where they will receive custom modifiers which will help them survive and fight, while enemies get more powerful.</p>		
Reasons for selecting project:	<p>I have an interest in procedural terrain generation / optimisation. This along side making it in OpenGL (where there is no physics engine) should be a good amount of work in itself. With then adding NPCs which you can attack, and have to also navigate the 3d terrain, different methods of attacking (different weapons. Being 2/3 different guns to begin with) and a small survival element (getting ammo / health items) should also make the game at least intriguing.</p> <p>The game will be high poly which will mean that there will need to be a lot of optimisation done to the terrain to try and keep a sense of bigness wherever the character is in the game, and avoid terrain culling, and distant object culling (to keep mountains in view etc.) This will also require good water physics / appearances</p> <p>This project will also leave a lot to continue working on, for instance after making the basic planets, I can later add roads / paths, different foliage, different environment types (desserts, ice caps etc)</p>		
External links (if applicable):	<p>A custom implementation of this (for terrain generation, and using different methods for the generation): https://youtu.be/CeJz8tsgCPw?si=uFLdPU6EiMK_1ALR More map generation, but my plan is to make realistic geometry (using averages between tiling etc) https://youtu.be/7xL0udlhniI?si=TERbDJ4xJwGSV5b5 one method for mesh optimisation (change to be used for normal meshes): https://youtu.be/qnGoGq7DWMc?si=E2lcj69oHrILaG0Z </p>		
Hardware requirements:	PC (PC game)		
Software requirements	C++, OpenGL		

(Technology Stack):	
Other requirements:	

Signed:

Date:

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Approved/Not Approved:	_____	
Reasons for not approving project:		
Conditions attached to approving project:		
Approved/Not Approved:	_____	
Name of Supervisor:		
Signed: _____	Date: _____	