Abstract

Introduction and Rationale

The purpose of the project, detailed below, is to conduct research into the most efficient and highest fidelity way of creating procedurally created planets, that are also a realistic scale. The finished product should allow for the fast generation of scale detailed, randomly generated 3d planets. These planets will have features such as: multiple biomes, level of detail system, terrain manipulation, oceans and procedurally textured surfaces.

Literature Review

Aims and Objectives

* Create a 3D planet procedural generation system
  + Components
    - Float errors
    - Generating initial sphere mesh
      * UV sphere
      * Normalized cube
      * Specified cube
      * Icosahedron
    - Biomes
    - Realistic scale
      * Elite dangerous = 1:1
      * Star citizen = 1:6
    - LOD system
    - Multithreaded generation
    - ~~Terrain manipulation (stretch goal)~~
    - Atmosphere
    - Ocean support

Methodology

Project Plan

Shown below, and attached with this document, is a Gannt chart outlining the stages in which the project shall be completed, as well as all additional and associated deadlines.