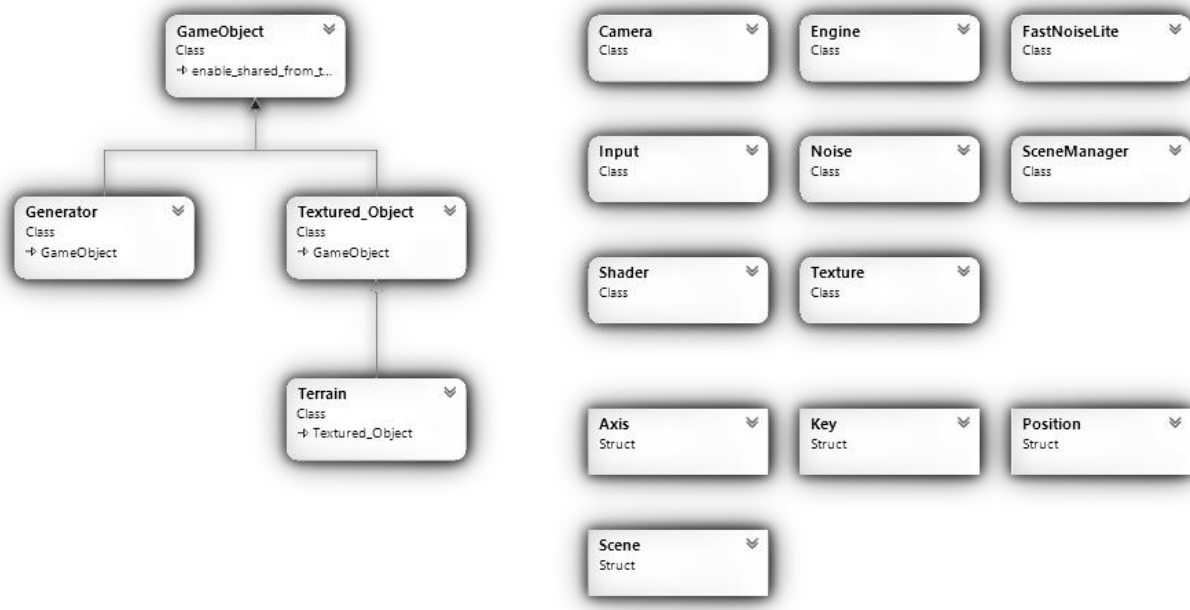# Technical Design Document

Introduction

This document will detail the class diagrams for each of the iterations of the project, showing how the various classes relationship grew and were refined over the course of the project.

*0.3 high level overview

Created by Conor McDonagh Rollo

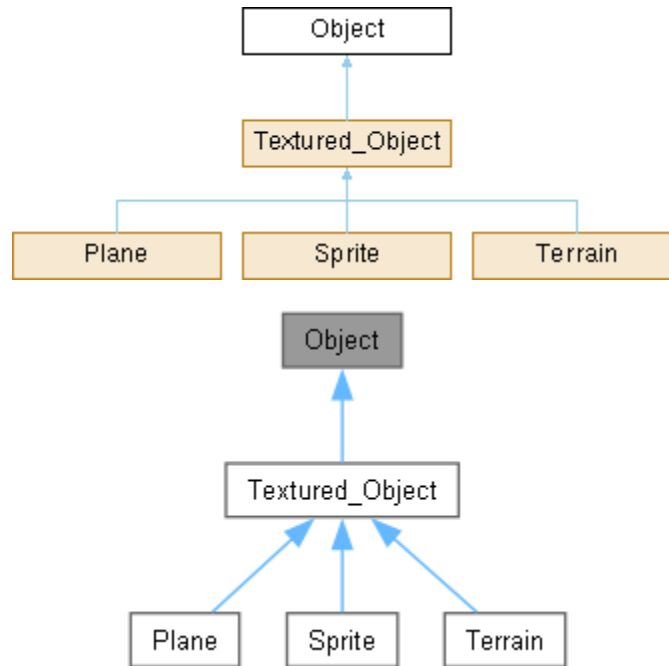Computer Games Development (C00260445)
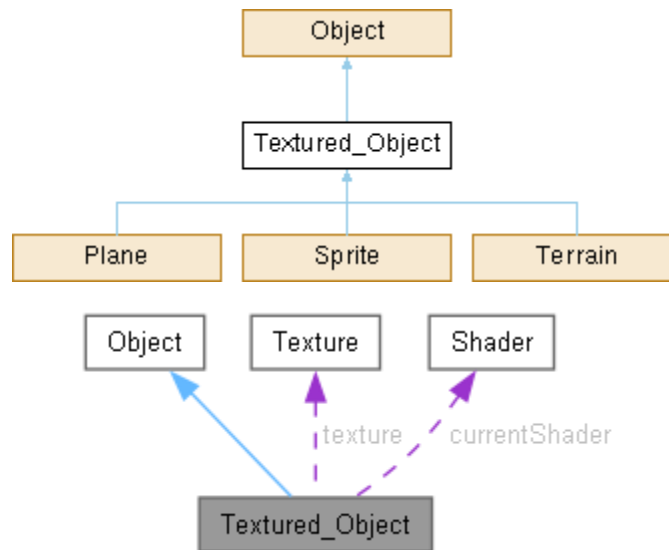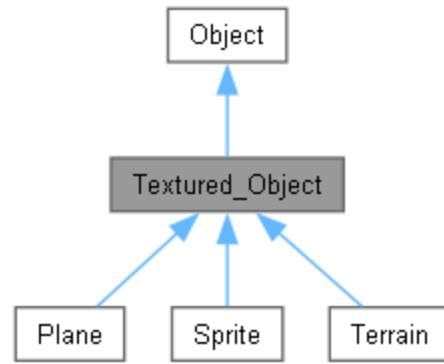
Table of Contents

Legend Terrain 0.1

Each graph will be split into inheritance and collaborative graphs, as long as the class uses inheritance.

Object

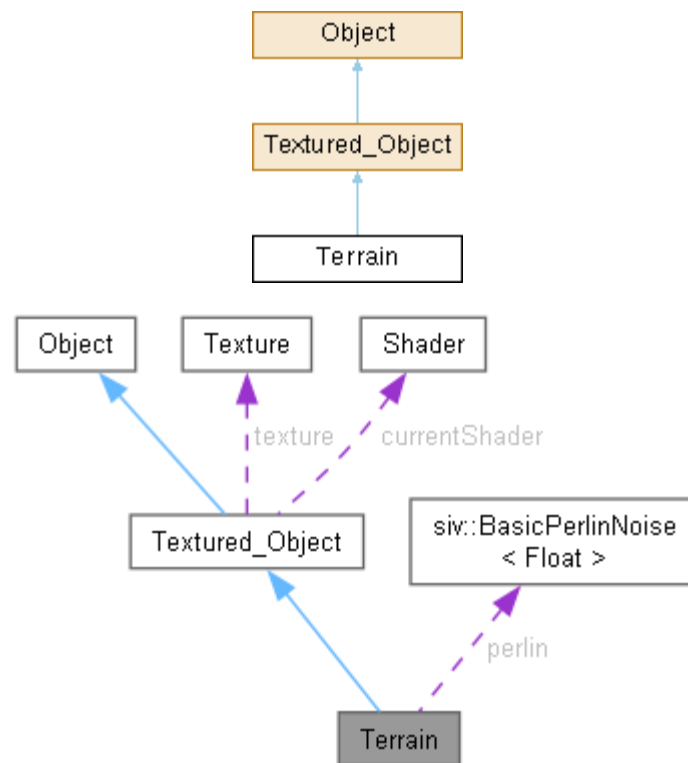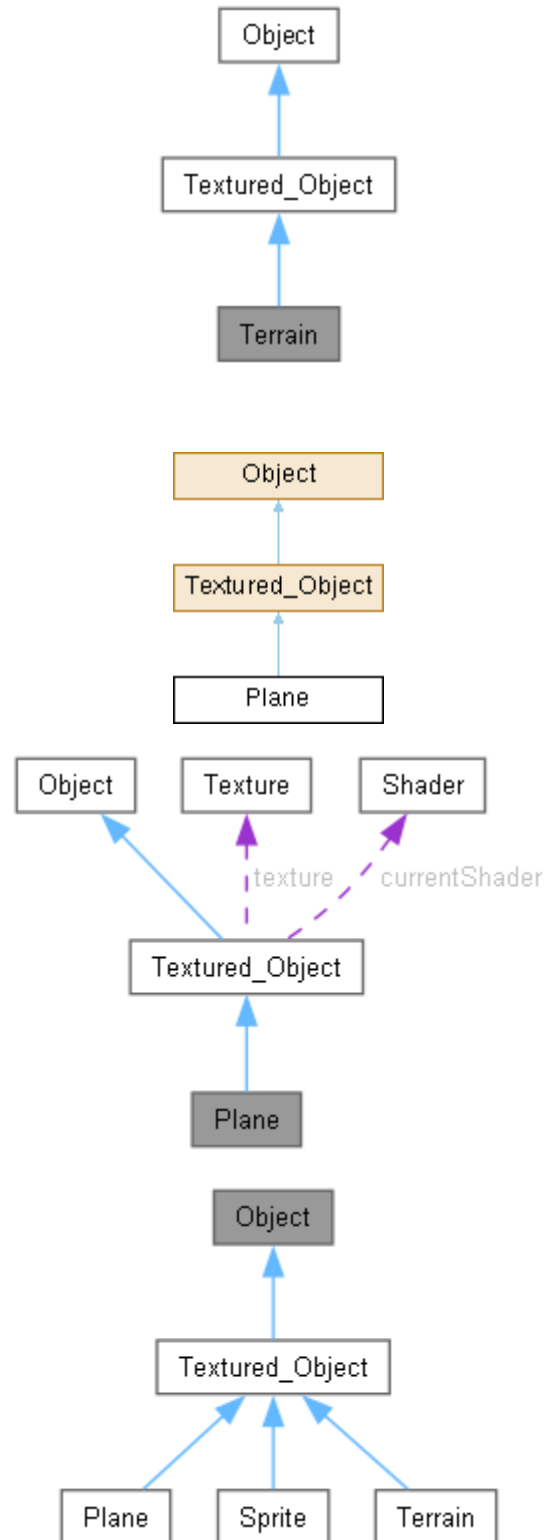## Textured Object

Terrain
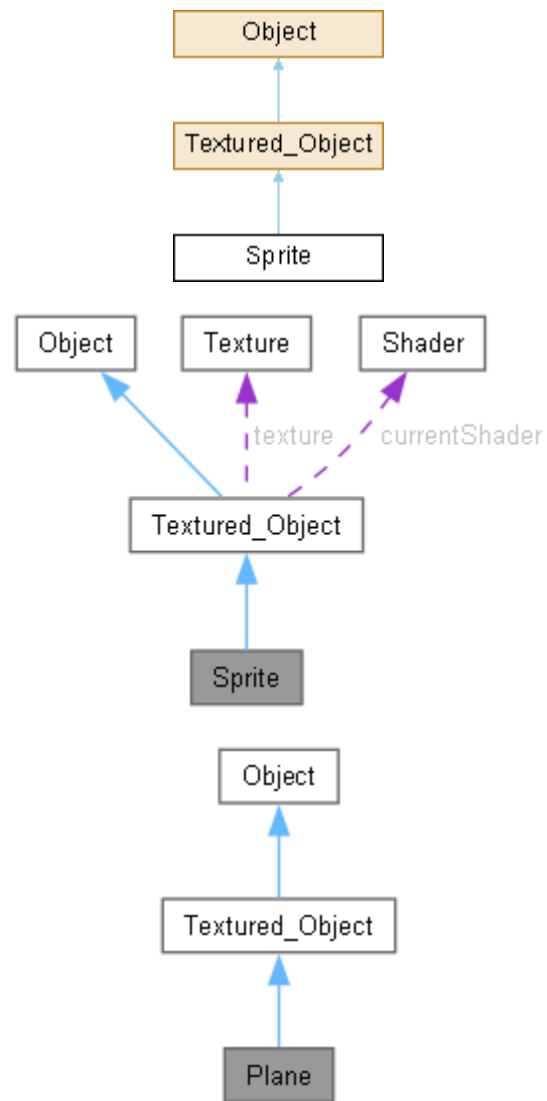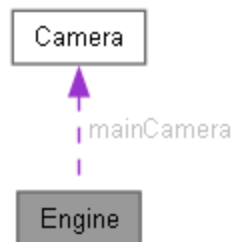
Plane

Sprite

```
            ┌──────────────┐
            │    Object    │
            └──────────────┘
                   ▲
            ┌──────────────┐
            │Textured_Object│
            └──────────────┘
                   ▲
            ┌──────────────┐
            │    Sprite    │
            └──────────────┘

  ┌────────┐   ┌─────────┐   ┌────────┐
  │ Object │   │ Texture │   │ Shader │
  └────────┘   └─────────┘   └────────┘
        ▲          ▲              ▲
             texture    currentShader
        ┌──────────────────────┐
        │   Textured_Object    │
        └──────────────────────┘
                   ▲
            ┌──────────────┐
            │    Sprite    │
            └──────────────┘

            ┌──────────────┐
            │    Object    │
            └──────────────┘
                   ▲
        ┌──────────────────────┐
        │   Textured_Object    │
        └──────────────────────┘
                   ▲
            ┌──────────────┐
            │    Plane     │
            └──────────────┘
```

Engine

```
            ┌──────────────┐
            │    Camera    │
            └──────────────┘
                   ▲
                mainCamera
            ┌──────────────┐
            │    Engine    │
            └──────────────┘
```
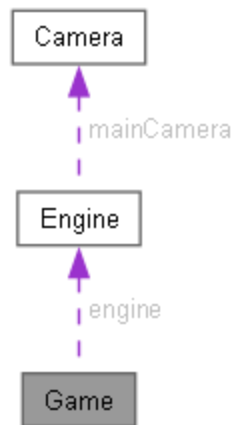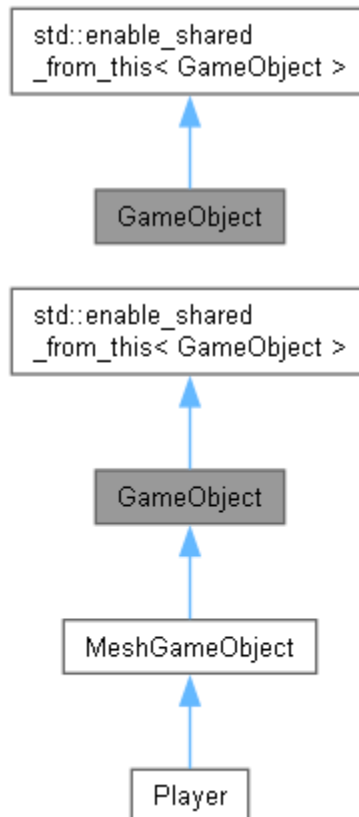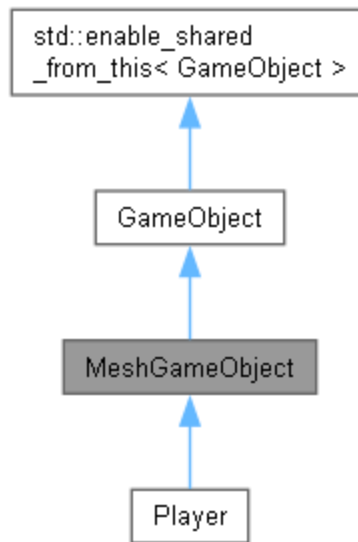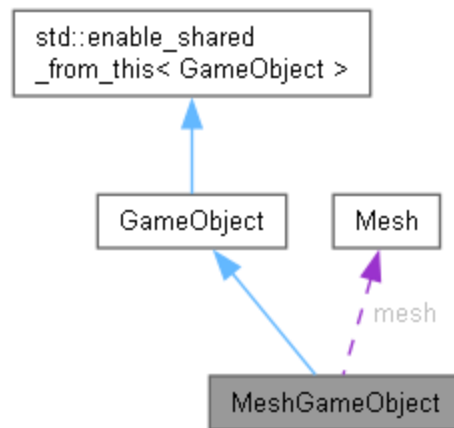
Game

Legend Terrain 0.2

The project expanded a lot in terms of class relationships since 0.1.

GameObject

MeshGameObject

```
std::enable_shared
_from_this< GameObject >
```

GameObject   Mesh

MeshGameObject

mesh

```
std::enable_shared
_from_this< GameObject >
```

GameObject
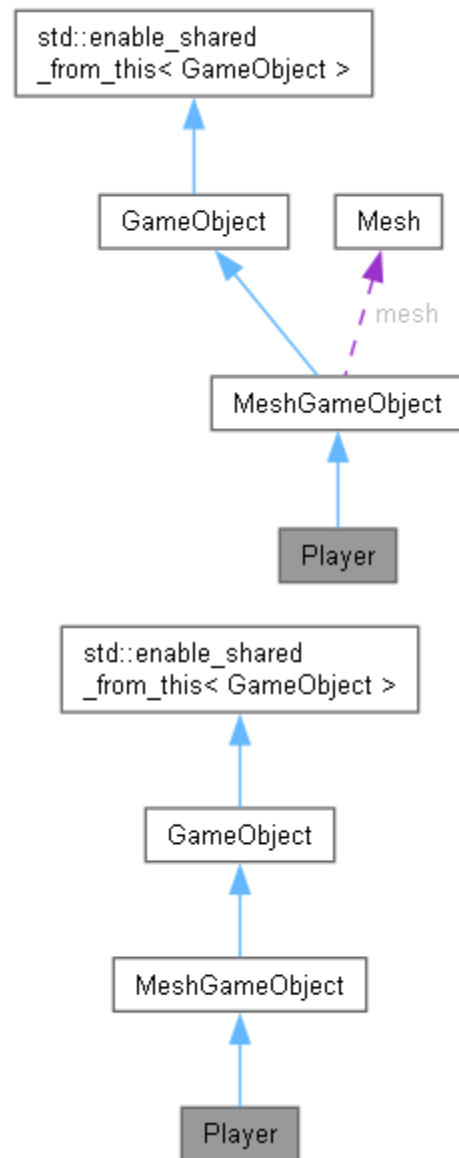
MeshGameObject
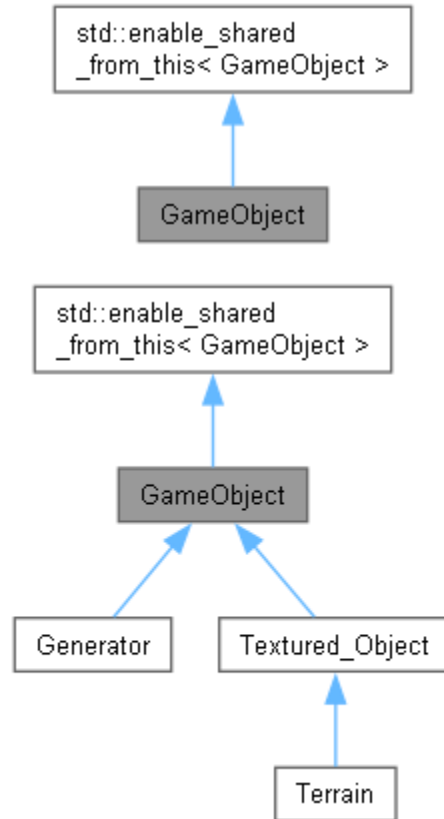
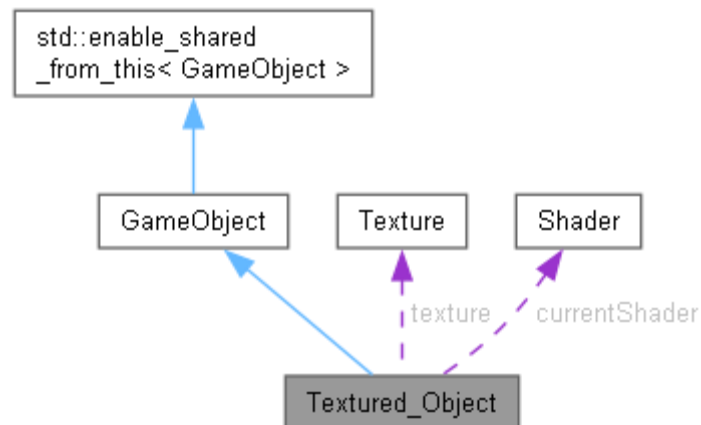Player

Engine

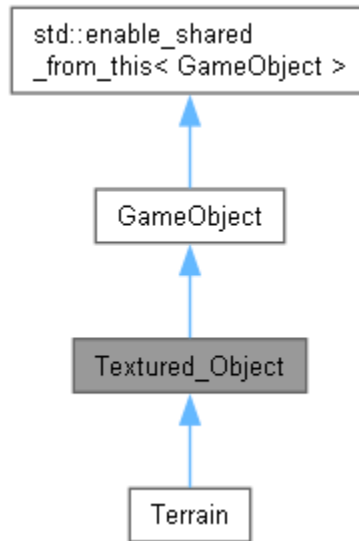SceneManager

sceneMan
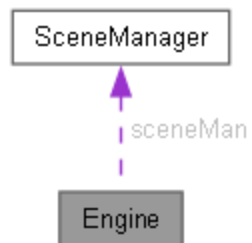
Engine

Player

Legend Terrain 0.3

This is the final merge of the 2 previous iterations.

GameObject

Textured Object

```
┌─────────────────────────┐
│  std::enable_shared     │
│  _from_this< GameObject >│
└─────────────────────────┘
            ▲
            │
    ┌───────────────┐
    │  GameObject   │
    └───────────────┘
            ▲
            │
    ┌───────────────┐
    │ Textured_Object│
    └───────────────┘
            ▲
            │
    ┌───────────────┐
    │    Terrain    │
    └───────────────┘
```
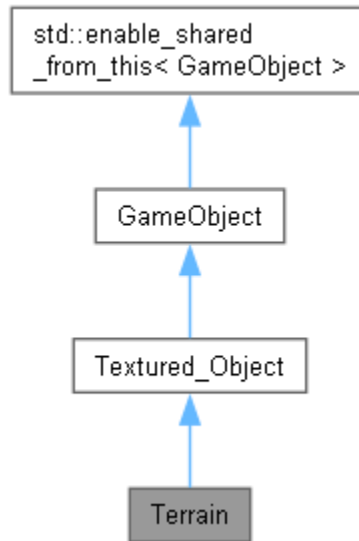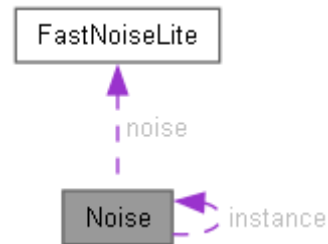
Terrain

```
        ┌─────────────────────────┐
        │  std::enable_shared     │
        │  _from_this< GameObject >│
        └─────────────────────────┘
                    ▲
                    │
        ┌───────────────┐   ┌──────────┐   ┌──────────┐
        │  GameObject   │   │ Texture  │   │  Shader  │
        └───────────────┘   └──────────┘   └──────────┘
                ▲               ▲              ▲
                 ╲              ┊ texture    ╱ currentShader
                  ╲             ┊          ╱
                ┌───────────────────┐
                │  Textured_Object  │
                └───────────────────┘
                        ▲
                        │
                ┌───────────────┐
                │    Terrain    │
                └───────────────┘
```

```
std::enable_shared
_from_this< GameObject >
```

```
GameObject
```

```
Textured_Object
```

```
Terrain
```

Noise

```
FastNoiseLite
```

noise

```
Noise
```
instance

Input

```
Camera
```

mainCamera

```
Input
```

Engine

```
SceneManager
```

sceneMan

```
Engine
```
instance

Generator