Alpha framework

Aim: To allow fast development of game prototypes or projects.

# Main Classes

## Application

A direct handle to create an opengl window and using GLFW/GLEW keyboard and mouse controls.

Consists of:

* 1 keyboard handler
* 1 mouse handler
* 1 GLFWwindow handler
* 1 Game State Manager

## Game States

Used as building blocks for a game/ game scene.

Functionality:

* Updating itself
* Pausing and resuming of itself when necessary
* Handle events
* Draw itself

# Handlers

## Input Handler

A handle to take in all the inputs from keyboard, mouse or/and controller. Input Manager for each game state will manage the inputs separately.

Examples:

* Keyboard
* Mouse
* Controller

## Resource Handler

A handle to the resource pool that consists of all the resources used in the game/scene.

Consists of:

* 1 Mesh Container
* 1 Texture Container
* 1 Shader Container
* 1 Sound Container
* 1 Game Objects (2D & 3D) container

# Managers

## Game State Manager

Manage flow of the game and the transitions between game states (if any).

Consists of:

* Vector of Game State
* 1 Resource Handler
* 1 Input Handler\*

## Scene Manager (Abstract)

Manage everything of a scene, from inputs to output.

Consists of:

* 1 Input Manager
* 1 Resource Manager
* Rendering functions
* Update functions

### Scene Manager Selection

Inherits from Scene Manager, specialize to take in input and choices from the user. Should only consists of buttons (2D/3D).

Classes that should derive from this class

* Menu Scene
* Level selection Scene
* Option Scene
* Pause Scene

### Scene Manager Info

Inherits from Scene Manager, specialize to display information and message to the user. Consist of a few buttons for the player to interact and changing of scene.

Classes that should derive from this class

* Instruction Scene
* High Score Scene

### Scene Manager Gameplay

Inherits from Scene Manager, everything related to the game/a level of the game should be contain within this class. Consists of a wide variety of game objects that are required by the game/scene. Primary child class should be Game Scene.

## Input Manager

Manage the inputs that are defined for that particular scene.

## Resource Manager

Manage the resource required for that particular scene.

Loaders: Loading of OBJ, textures and shader into the program.

Consists of:

* LoadOBJ
* LoadTGA
* shader

# GameObjects

## Parent GameObject

### GameObject

### GameObject2D

### GameObject3D

### GameObjectSprite2D

### Mobile GameObject

### Static GameObject

## Child GameObject

### Button2D

### Button3D

Resource Handler

Collision Detection

Scene Graph

Scene

Display Handler / Renderer

Input Handler

Scene Manager

Scene2D Manager

Scene3D Manager

Resource Manager

Display Manager

Input Manager

Game States

GameScene Manager

Game State Manager

Application