Project Proposal

ECE 4122/6122

Spring 2018

Georgia Institute of Technology

**Team Members**

Tyler Brown

Karl Nicolaus

Sterling Smith

Animesh Patel

**Project Idea**

Create a 2D game that allows the user to control an avatar and interact with the environment. Use dedicated threads to refresh on-screen graphics and perform calculations.

**Specific Possibilities**

“Flappy Bird” clone: 2D side scrolling where user has 1 input (jump) with increasing scroll speed. User jumps around to dodge obstacles.

“Pokemon GO” style game: 3D option. User inputs a “cast/throw” to catch a Pokemon. Could also create a fishing style game.

Tank Battle: Users control tanks in a 2D world. The goal is to eliminate opposing tanks by firing shells. User dials in velocity and launch angle before each shot. Physics engine to govern the trajectory of said shots. Option to create maps that can be played by the users.

Mario/Contra/Castlevania: 2D adventure game. Create levels that the user can run/jump through. User’s avatar has basic attack moves and must overcome enemies and puzzles to complete it.

**External Libraries**

OpenGL: Framework for displaying 3D graphics

GLFW: OpenGL window manager

GLEW/GLAD: Function loading for OpenGL

Box2D/SFML/Irrlicht: Game/Physics/Audio engine

MathFu: Game-Focused math library. Perform physics calculations.

Bullet: Collision detection; physics library alternative

GLSL: Shader composer and editor

**Roles**

Tyler Brown: Threading and game optimization

Karl Nicolaus: Aesthetics; Shaders, display, and openGL tie-in

Sterling Smith: Build system and overall project management

Animesh Patel: Mathematical calculations and movement dynamics in-game­­