CS174A Term Project Proposal

Team Members: Bryan Ho (204-840-587)
Leon Zhang (804-483-463)
Nathan (304-575-323)

Project Motivation

As children, we loved playing whack-a-mole. We bonded through the game and wanted to take our coding skills to the next level by implementing a virtual whack-a-mole game. We wanted to create a way for people who don't have easy access to an arcade to play this game online.

Project Description

We will design virtual whack-a-mole where objects appear from an *m x n* grid of holes. The user will click on one of the objects that pop out from the holes to make it disappear. One interesting thing about our project is that we are going to add a feature that currently does not exist in the current whack-a-mole game. We want to bring certain objects that should be clicked, but also have objects that shouldn't be pressed (like a bomb). We could have a scoreboard and a timer somewhere on the screen while the game is being played.

Project Goals

- Correctly implement mouse picking to determine the location of selection at the time of mouse click.
- Develop efficient vertex and texture shaders to render our environment in a clean and elegant manner.
- Design modular and reusable geometry sets to keep complexity low and readability high.

Advanced Topics

1. ***Picking***
   User will use the mouse and click on different areas on the screen to make the object disappear.

2. ***Lighting and Shadows***
   As objects appear, there will be a shadow projected onto the "game board" from a point light source.

Features

- Certain objects are meant to be whacked.
- Certain objects are not meant to be whacked.
- Timer showing remaining time.
- Scoreboard is always shown on screen.
    - Positive points for hitting objects meant to be whacked
    - Negative points for hitting objects not meant to be whacked
- All objects will periodically and randomly pop up from beneath the ground and remain popped up for a brief amount of time.
- Game board will appear to be going into the screen in the z-axis.