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CS 480

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PA10: Pinball

Project Control:

Down Arrow: Launch Ball

Left Arrow: Left Paddle

Right Arrow: Right Paddle

N: New Game

B: Change Ambient Light Value

I: Zoom In

K: Zoom Out

J: Orbit Counterclockwise

L: Orbit Clockwise

U: Move Camera Up

O: Move Camera Down

A: Select an object so that individual object lighting parameters can be adjusted

S: Cycles the currently selected objects specular brightness.

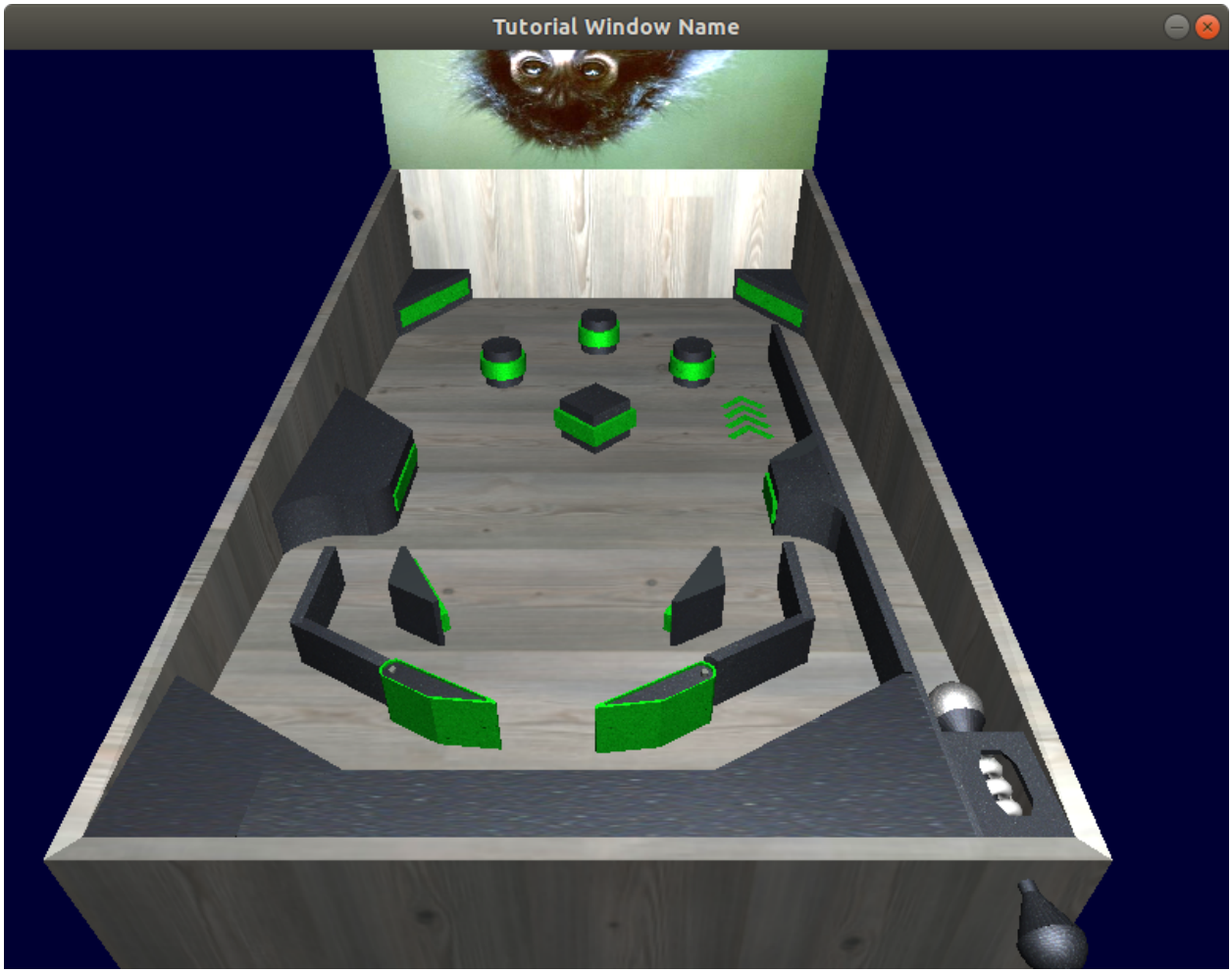
D: Cycles the currently selected object's diffuse brightness.

F: Cycles the currently selected object's shininess value.

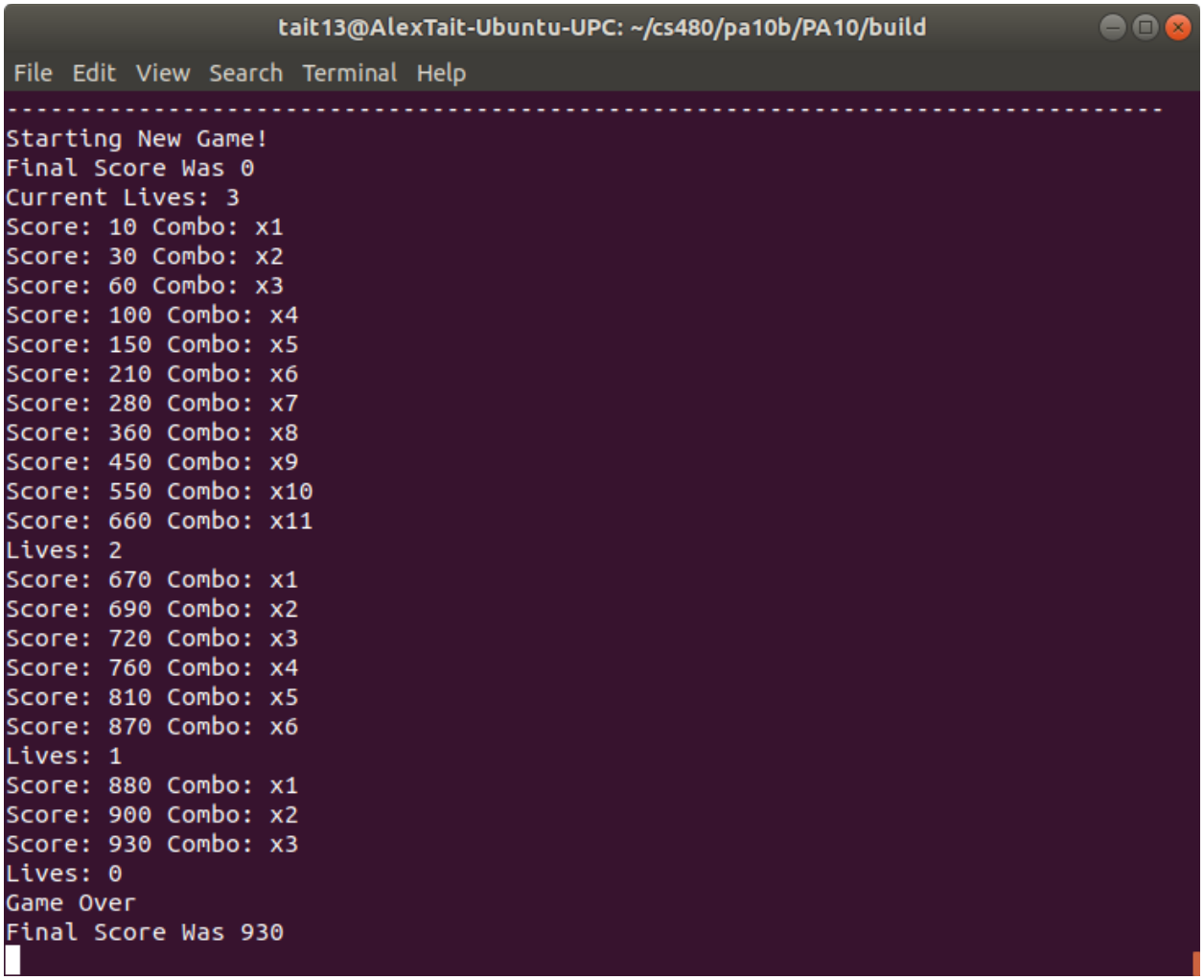
Extra Credit opportunities implemented:

-None

Pinball Game Initial Position



Score Output for Single Game Played



Dependencies, Building, and Running

This project requires Assimp and ImageMagick. Other than that, There are no additional dependencies besides the graphics related libraries.

- sudo apt-get install libglew-dev libglm-dev libsdl2-dev libassimp-dev libmagick++-dev libbullet-dev

Building and Running

CMake is used to build this project.

The user must run the project by running ./Pinball in the console.

CMake Instructions

- The building of the project is done using CMake.
- mkdir build
- cd build
- cmake ..
- make
- ./Pinball

Issues

- Spotlight does not follow the ball
- Flippers were difficult to implement properly until we used Convex Hull Shapes
- Pinball would often glitch through walls until we changed the ball to Continuous Collision Detection and increased interpolation values.

What we would change if given more time

- Improve Lighting
- Make a slide for ball to travel up

- Make a leaderboard/store highscores
- Make plunger model move

What Was Changed From Wednesday

- Paddles were changed to Convex Hull Shapes with kinematic objects instead of using hinge constraints with dynamic objects to allow for smoother movement and better collisions.
- Pinball board and layout changed.
- Interpolation changed to lower chance of ball phasing through objects.
- Ball changed to Continuous Collision Detection to lower chance of ball phasing through objects.
- Scoring method updated to include Combo multiplier.
- Game over methods updated to stop fast collisions with bottom of board from taking more than one life away.
- General physics parameter tweaking to make the game run smoother.