# Modeling Stage Lighting in Realistic Conditions

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Abstract: The purpose of this project is to create a realistic simulation of stage lighting using OpenGL. The user can control the intensity, color, attenuation, direction and model of the stage light through a python Tkinter GUI that essentially wraps the C code. The user can save multiple configurations, and there is an option to run this program at the same time in order to view different effects.
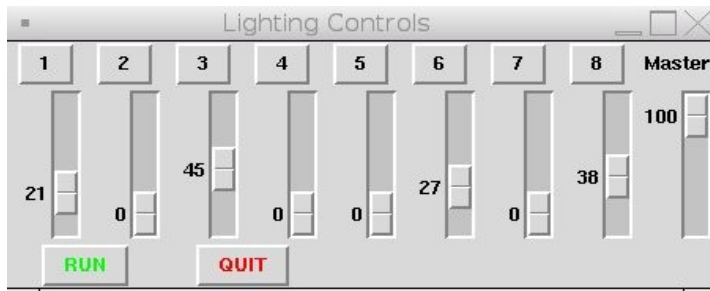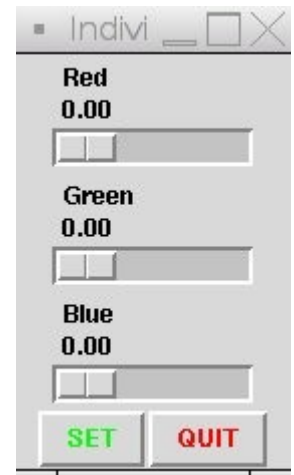
Background: This subject has been researched by many people already, most notably a team out of UPenn that created an application almost exactly like this one. The most important aspect that they discovered, was the shading required, which this project writes in GLSL.

Procedures and Methods: The user gives input to the Lighting Controls window, which then sends that information in a text file to the lights.c file, which it then displays. The user can move around this environment and view the effects of their configuration using different control keys that they set.

Results and Conclusion: This project is a useful application for modeling stage lighting for light technicians everywhere. It covers an average-sized stage that can be viewed from any direction, and can cover a total of eight areas. The user has complete control over all aspects of the lights, and the program is even up to date with the latest models on the market today that are being used in professional productions.