

Computer Science 411/611
Virtual Reality Systems
Spring 2009
Homework 1 – Fun with Colors in X

Due: Tuesday, 1/27/2009

Overview

For this project, you will modify a program in C to learn more about graphics using the X Windowing system.

Description

Given the `zurburt` program we discussed in class (and available on the class web page), modify the program so that each of the first four menu choices is labeled with and offers a different color name, and the selection of that menu option causes a solid fill of the background of the display window with that color (note: do not simply display a large rectangle). Also, omit the text of the color name that appears in the drawing window. The fifth menu choice (labeled “`zurburt`”) should produce either:

- (computer science) a continuously updated display of randomly colored rectangles in random locations within the display window. The rectangles should also be randomly sized, but not larger than 100 pixels in either direction. The update should continue until another menu choice is selected or ‘`q`’ is pressed in the display window (see `XEventsQueued`), at which point the display should stop (but not exit).
- (DPA) an artistic design or pattern consisting of rectangles. You may use your own design, or that of another artist (e.g., Piet Mondrian). Select colors carefully and be creative.

The menu options should refresh on expose events. The display window should also refresh on expose events when the current display is a static image.

Pressing key ‘`q`’ while the cursor is in the menu window should always cause an exit. Multiple ‘`q`’s should not be necessary. A ‘`q`’ entered in the display window should *not* cause an exit.

Implementing the above correctly will earn a grade of 85. To achieve a higher grade, an additional component, left up to the student, must be submitted. This component could take the form of a game (e.g., Tetris), a maze, a digital image display produced by blocks of varying sizes, etc. DPA students may want to consider creating a randomized Mondrian design. Each component added should have its own menu button.

Submission Requirements

You should submit the following:

- a hardcopy of your program (with your name, date, and compile line in a comment section at the beginning of your code)
- a sheet describing any special features of your project
- an electronic copy of your program (preferably tar'ed and gzip'ed) sent to me at tadavis@cs.clemson.edu