**Programming Project Report**

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**Problem Statement:**

The goal of this programming assignment is to develop a graphics program that displays images of fireworks after they have exploded. We ignored the effects of wind and gravity, so each firework can be modeled as a collection of straight lines that all start at the explosion point and go outwards in random directions for roughly the same distance. There are no inputs in this program, we only run it. The output is a window showing a random number of explosions on the screen.

**Design:**

I started by building out the framework for the firework, I used two arrays to store the x and y positions for each firework starting positions. After that, I then moved on to a for loop that calculates the coordinates for each firework. I then drew each firework. After the coordinates were created, I used another for loop to draw each of the lines coming from each explosion. This was the hardest part, as I had to use sin and cos.

**Implementation:**

I started with the line\_split sample code. I removed most of the functions and kept display, init, and main. I then changed display almost completely removing what was there.

**Testing:**

No testing was required.

**Conclusions:**

The overall result of this assignment was a success. The program creates a random amount of fireworks on the screen with varying sizes. All in all, I think this assignment took me about 6 hours to complete, with most of the time coming from installing OpenGL.