Nicholas Chirico
Operating System Concepts
Files:

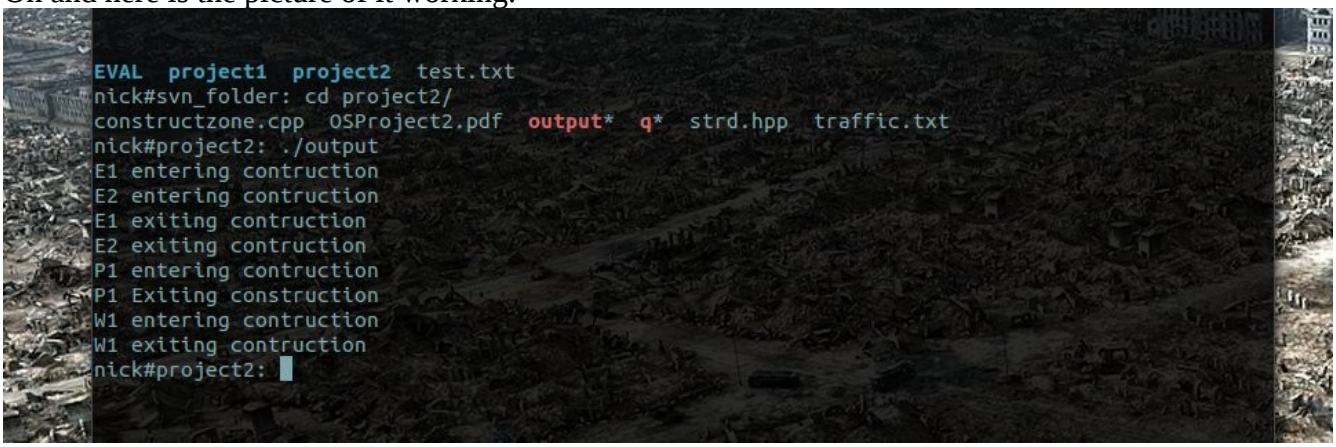
- constructzone.cpp
- OSProject1.pdf
- traffic.txt
- proof.jpg (same as the picture at the end of this file)
- q (a very short script to compile the files)
- output (working binary. Compiled on x64 linux machine. Juts in case)

My implementation of course uses a mutex and 3 conditional variables (one for each thread type). I also used a series of variables to keep track of how many other things each type has had to wait on.

I did run into a few problems. At first my pedestrians would never go. They'd just sit there staring at the road wondering what to do. After a while I noticed that I was not properly updating my variable ped_wait, which keeps track of the number of cars the pedestrians have waited on. I also had a fun bug that I never found the cause of. When I was loading the traffic vector (with other, smaller vectors) I would get a segfault when just printing out all of the members the vector. (which I did to test that I had properly read the file) Turns out the last number (at the time it was the speed of W1) was added as the first element of another temp_vect, which was then put at the end of my vector of vectors. So when I read though them, and tried to read the final 2 elements of the final vector it segfaulted.

I'm still not certain what caused that problem. But simply ignoring any vector that wasn't longer than 2 elements seemed to do the trick. And for lessons learned, well I realized that just because it works once doesn't mean it always will. Thorough testing is a must with threads.

Oh and here is the picture of it working.



That was using the included traffic.txt