Report

First, I made 3 files, the first is the header file (Header.h) for both classes, in which I declared each of the class members and functions; in class Road I made “Count A, B, C” and “allowed” members public so that I can access them in my main function later. In my second file (assign1.cpp) I defined each function of the classes and validated the input of the members in the constructors and setters. In the allow function I used the “allowed” bool to make it true if the car is allowed in that road and false if it’s not allowed, I also incremented the counters of each road if the car was allowed. In the radar function I compared between the car speed and the speed of the road (which is a constant that I chose for each road) and if the car speed was more than the speed limit of the road it returned true otherwise it returned false. In my main function I constructed three objects of the class road, and I initialized 12 objects for the car class I then put the objects in a queue using the dot push function, did a while loop where I checked if the queue was empty or not and if it wasn’t empty I would then pass the object onto the functions by first using the dot front function, and I checked if the car was allowed or not and if it was allowed on the road I would then pass it onto the radar function and if the radar function turned out to be true I would print the information of the car and the vehicle will be find. I’ve passed each care on every one of the three roads and then I popped the object at the end of the while loop after the queue was empty, I then printed the number of cars that passed on each road and then I compared between the three counts and the highest count was stored in the variable highest which was a double then I calculate the efficiency of each road and printed it.

Screenshot of the output: