First, I created a class called car in a .h file and I also included the string library in that file. I added all the variables as private data members. Then, I added the public keyword and added the two different types of constructors, default and parameterized. Then I created setters and getters for all the variables that I declared in the class. I also validated the input for multiple of the setters. After that, I created another class called road in another header file and defined current year for both header files. In the road class, I also declared all the variables as private and then created on default and one parameterized constructor in the public part. I then created setters and getters for all the variables and included validation. After that, I created three member functions: Radar, allow, and age. In the main function, I created three objects of the class road and four objects of class car and set the values for all of them. Then, I put all the car objects in a queue to pass them on the radar function, put them in different queues 3 times as there are 3 different roads and their different speed limits and allowed car types in each one of them.

After that, printed the number of cars that is possible for it to pass on each of the 3 roads. Then, I calculated the efficiency of each of the three roads.

Output:

A picture containing text

Description automatically generated![Text

Description automatically generated]()