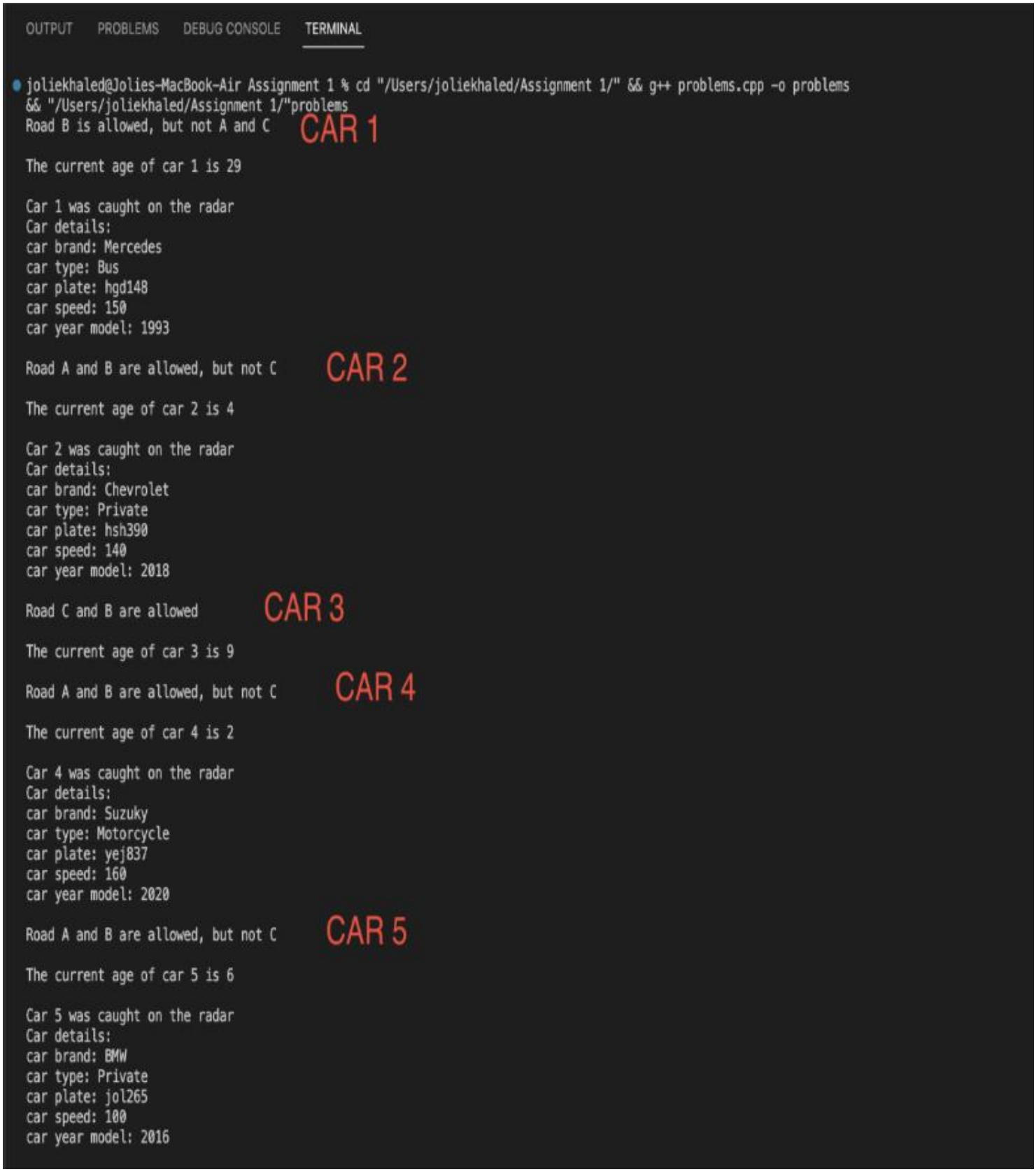
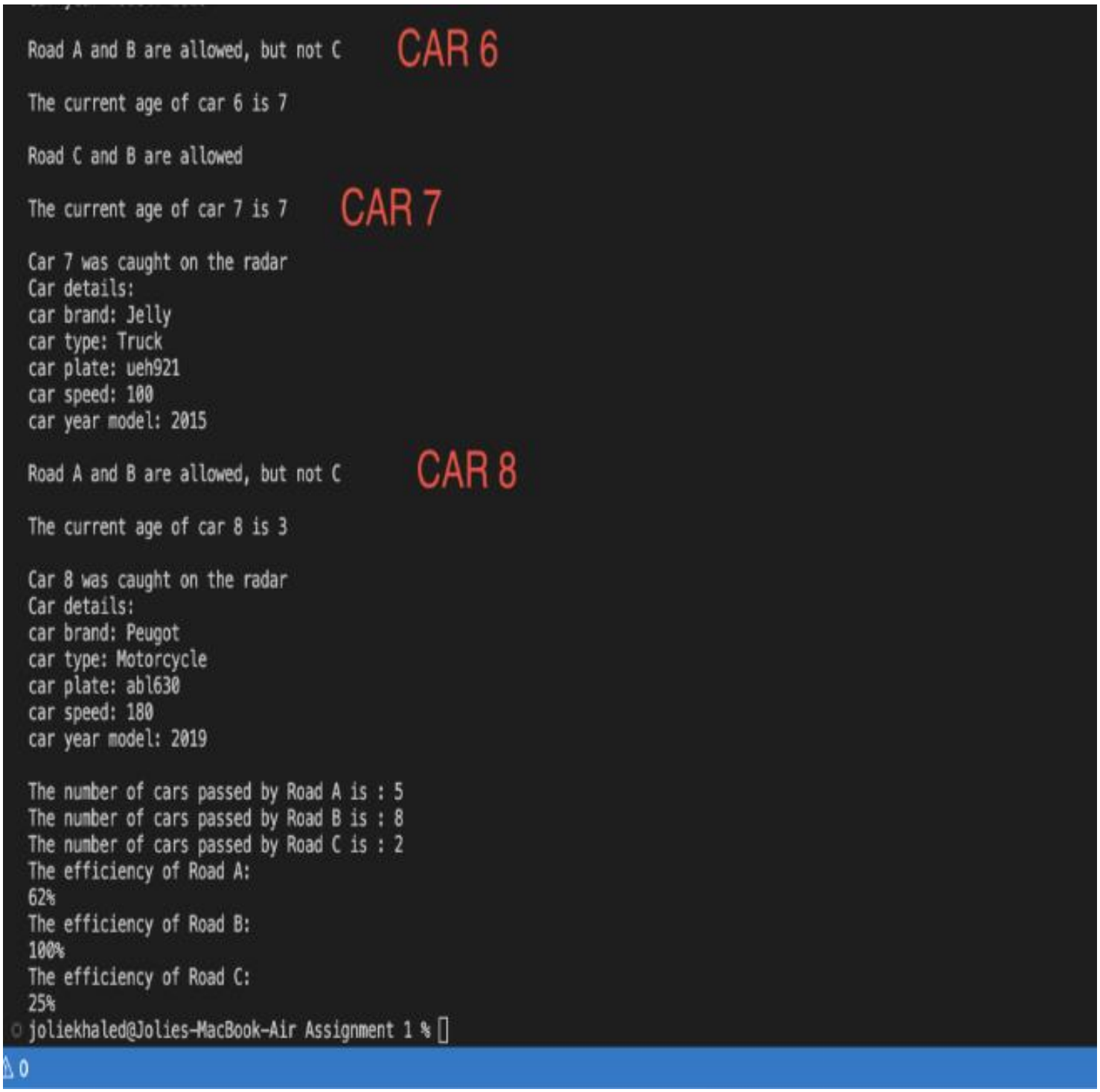
Jolie Khaled 900211816 –
Assignment 1




Road A and B are allowed, but not C
CAR 6
The current age of car 6 is 7
Road C and B are allowed
The current age of car 7 is 7
CAR 7
Car 7 was caught on the radar
Car details:
car brand: Jelly
car type: Truck
car plate: ueh921
car speed: 100
car year model: 2015
Road A and B are allowed, but not C
CAR 8
The current age of car 8 is 3
Car 8 was caught on the radar
Car details:
car brand: Peugot
car type: Motorcycle
car plate: abl630
car speed: 180
car year model: 2019
The number of cars passed by Road A is : 5
The number of cars passed by Road B is : 8
The number of cars passed by Road C is : 2
The efficiency of Road A:
62%
The efficiency of Road B:
100%
The efficiency of Road C:
25%
joliekhaled@Jolies-MacBook-Air Assignment 1 %
0

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As we can see that these 2 screenshots are the output of our code. I added some Text labels for every car in order to explain the output clearly. Of course while coding I faced some difficulties like how to queue the list of the cars and the passed to the function, also for the function allow, it is boolean but I have put the return true and false inside the if else statement, so an error appeared saying that this is a non void function but it does not return anything. So ,I put the return false without the else outside the statement and it worked. Let's now analyse the output.

Starting from Car1, car 1 is a bus so it is just allowed to pass in road B only not A and C as it is written in the first line, the function age has calculated the age of the car. Then function radar has said that this car has exceeded the speed limit so it was caught by the radar and then printing the car details of the car. For Car2, it is a private car so it is allowed only at road A and B as it is written not C, then age function has calculated that its current year of the car. Also this car has exceeded the speed limit of the road, so it was caught by the radar, consequently printing the car details. Regarding Car3, it is a truck, so it is only allowed in road B and C, not A, and as we can see that she didn't exceed the speed limit, so it was not caught by the radar and consequently the car details didn't appear. Then age function has calculated that its current year of the car. For Car4 and 5, they exceeded the speed limit, so they have a fine. Car 4 is a motorcycle, so as the output says it is allowed at road A and B not C, and for Car 5, it is a private so it is allowed at road A and B not C too. For Car6, it is a private so it is allowed at road A and B not C, and it was not caught by the radar because it hasn't exceed the speed limit of the road. Then age function has calculated that its current year of the car. Car 6 and 7 had exceeded the speed limit, so they were caught by the radar displaying then the car details of them. As the end, function allow has counted how many cars can pass by road A,B and C, then the output show that Road B may pass 8 cars as it allows all the car type so as we have 8 car so its count is 8. Then finally, the efficiency of each road was calculated based on how many cars was in the specific road over the number of cars in the highest road (road B) times 100 and we can see that the efficiency of road B is 100%.