

- This program will display the age of each vehicle, the allowed roads for it, all the vehicle's data, and if the car speed exceeds the limits, the radar will display a fining message. Also, the program will calculate the efficiency of each road based on the number of cars passed through it. Fortunately, I don't have any errors and below are my outputs.

- Output:

```
Veichle 1:-
AGE:    50 years
ALLOW:  This truck is allowed on road B + road C
RADAR:  Brand: Huyndai  Type: truck      Year Model: 1972      Plate: KOD123  Speed: 80
-----
Veichle 2:-
AGE:    58 years
ALLOW:  This truck is allowed on road B + road C
RADAR:  Brand: BMW      Type: truck      Year Model: 1964      Plate: RBZ182  Speed: 120
$$$$ This Veichle is gonna be fined for exceeding the maximum speed (100) $$$$
-----
Veichle 3:-
AGE:    70 years
ALLOW:  This motorcycle is allowed on road B + road A
RADAR:  Brand: Huyndai  Type: motorcycle    Year Model: 1952      Plate: AJ0346  Speed: 120
$$$$ This Veichle is gonna be fined for exceeding the maximum speed (100) $$$$
-----
Veichle 4:-
AGE:    53 years
ALLOW:  This motorcycle is allowed on road B + road A
RADAR:  Brand: Hunda    Type: motorcycle    Year Model: 1969      Plate: RFR065  Speed: 80
-----
Veichle 5:-
AGE:    56 years
ALLOW:  This truck is allowed on road B + road C
RADAR:  Brand: Toyota   Type: truck         Year Model: 1966      Plate: XNQ777  Speed: 140
$$$$ This Veichle is gonna be fined for exceeding the maximum speed (100) $$$$
-----
```

```

Veichle 6:-
AGE:    30 years
ALLOW:  This truck is allowed on road B + road C
RADAR:  Brand: Chevroleit    Type: truck    Year Model: 1992    Plate: JMF986    Speed: 140
$$$$ This Veichle is gonna be fined for exceeding the maximum speed (100) $$$$
-----
Veichle 7:-
AGE:    25 years
ALLOW:  This private is allowed on road B + road A
RADAR:  Brand: Hunda    Type: private    Year Model: 1997    Plate: NXX486    Speed: 70
-----

Efficiency:-
Road A = 42%
Road B = 100%
Road C = 57%

C:\Users\ahmed\OneDrive\Desktop\UNI\CS2\WORK\CS practicing\x64\Debug\CS practicing.exe (process 79552) exited with code 0.
To automatically close the console when debugging stops, enable Tools->Options->Debugging->Automatically close the console wh
Press any key to close this window . . .

```

- I created an additional function called “generator” to assign random date for each car, and that enable me to control the number of cars I want to display very easily. Below is the function and some of the different outputs I can get using it.

```

void generator(Car* cars)
{
    srand(_Seed:time(_Time:NULL));
    string types[] = { "bus", "private", "truck", "motorcycle" };
    string brands[] = { "BMW", "Huyndai", "Hunda", "Chevroleit", "Toyota" };
    for (int i = 0; i < 20; i++)
    {
        cars[i].set_speed(speed:(rand() % 10) * 10 + 50);
        cars[i].set_type(types[rand() % 4]);
        cars[i].set_model(model:rand() % 72 + 1950);
        cars[i].set_brand(brands[rand() % 5]);

        string x = "";    // randomizing a plate
        for (int i = 0; i < 6; i++)
        {
            if (i < 3)
                x += char(rand() % 26 + 65);
            else
                x += char(rand() % 10 + 48);
        }
        cars[i].set_plate(PLATE:x);
    }
}

```

Veichle 1:-

AGE: 2 years

ALLOW: This motorcycle is allowed on road B + road A

RADAR: Brand: Huyndai Type: motorcycle Year Model: 2020 Plate: K00603 Speed: 130

\$\$\$ This Veichle is gonna be fined for exceeding the maximum speed (100) \$\$\$

Veichle 2:-

AGE: 50 years

ALLOW: This motorcycle is allowed on road B + road A

RADAR: Brand: BMW Type: motorcycle Year Model: 1972 Plate: RJB587 Speed: 110

\$\$\$ This Veichle is gonna be fined for exceeding the maximum speed (100) \$\$\$

Veichle 3:-

AGE: 29 years

ALLOW: This private is allowed on road B + road A

RADAR: Brand: Huyndai Type: private Year Model: 1993 Plate: HPS248 Speed: 110

\$\$\$ This Veichle is gonna be fined for exceeding the maximum speed (100) \$\$\$

Veichle 4:-

AGE: 47 years

ALLOW: This truck is allowed on road B + road C

RADAR: Brand: Hunda Type: truck Year Model: 1975 Plate: ATC518 Speed: 70

Efficiency:-

Road A = 75%

Road B = 100%

Road C = 25%

AGE: 52 years

ALLOW: This private is allowed on road B + road A

RADAR: Brand: BMW Type: private Year Model: 1970 Plate: UHB179 Speed: 130

\$\$\$ This Veichle is gonna be fined for exceeding the maximum speed (100) \$\$\$

Veichle 2:-

AGE: 23 years

ALLOW: This truck is allowed on road B + road C

RADAR: Brand: Chevroleit Type: truck Year Model: 1999 Plate: URR493 Speed: 100

Veichle 3:-

AGE: 8 years

ALLOW: This motorcycle is allowed on road B + road A

RADAR: Brand: Toyota Type: motorcycle Year Model: 2014 Plate: CIZ045 Speed: 70

Veichle 4:-

AGE: 28 years

ALLOW: This bus is allowed on road B

RADAR: Brand: BMW Type: bus Year Model: 1994 Plate: UYN128 Speed: 80

Efficiency:-

Road A = 50%
Road B = 100%
Road C = 25%