

## **LOOPING**

**PROBLEM GIVEN:**

Write a program to include an Exit Option by the user. The menu should be displayed, only if the user selects option 4. Exit should the loop run. Use do-while to implement the same. Extend the previous program to implement the program.

**ALGORITHM:**

Step 1: Start

Step 2: Read vname, vcolor, nov, bookp, cname, bookid, defenc, dcost, genr and engine.

Step 3: Print cname, bookid, and vname.

Step 4: Read vtype (Hatchback, Sedan, SUV, MUV) and vcost with respect to the vtype.

Step 5: Print vtype and vcost.

Step 6: Print vcolor.

Step 7: Check if the customer is working in defense or an ex-defense person. If yes, apply 10% discount, else, do not apply 10% discount.

Step 8: Check if the number of vehicles is greater than 0. If yes, print the number of vehicles available, else, print "Vehicle not available".

Step 9: Check if the booking period is open. If yes, print "Booking: Open", else, print "Booking: Close".

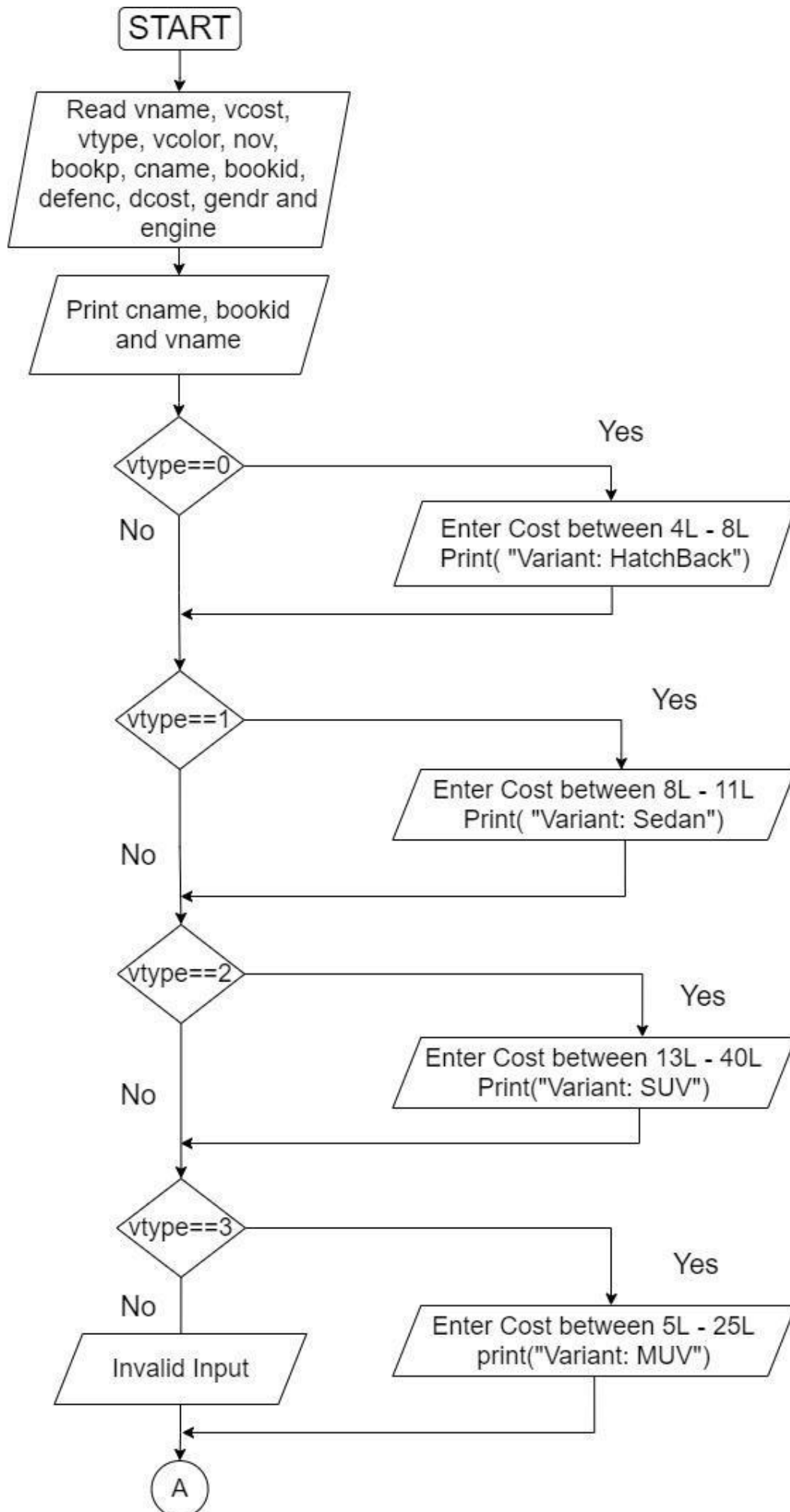
Step 10: Implement a do while loop in the following switch case statement:

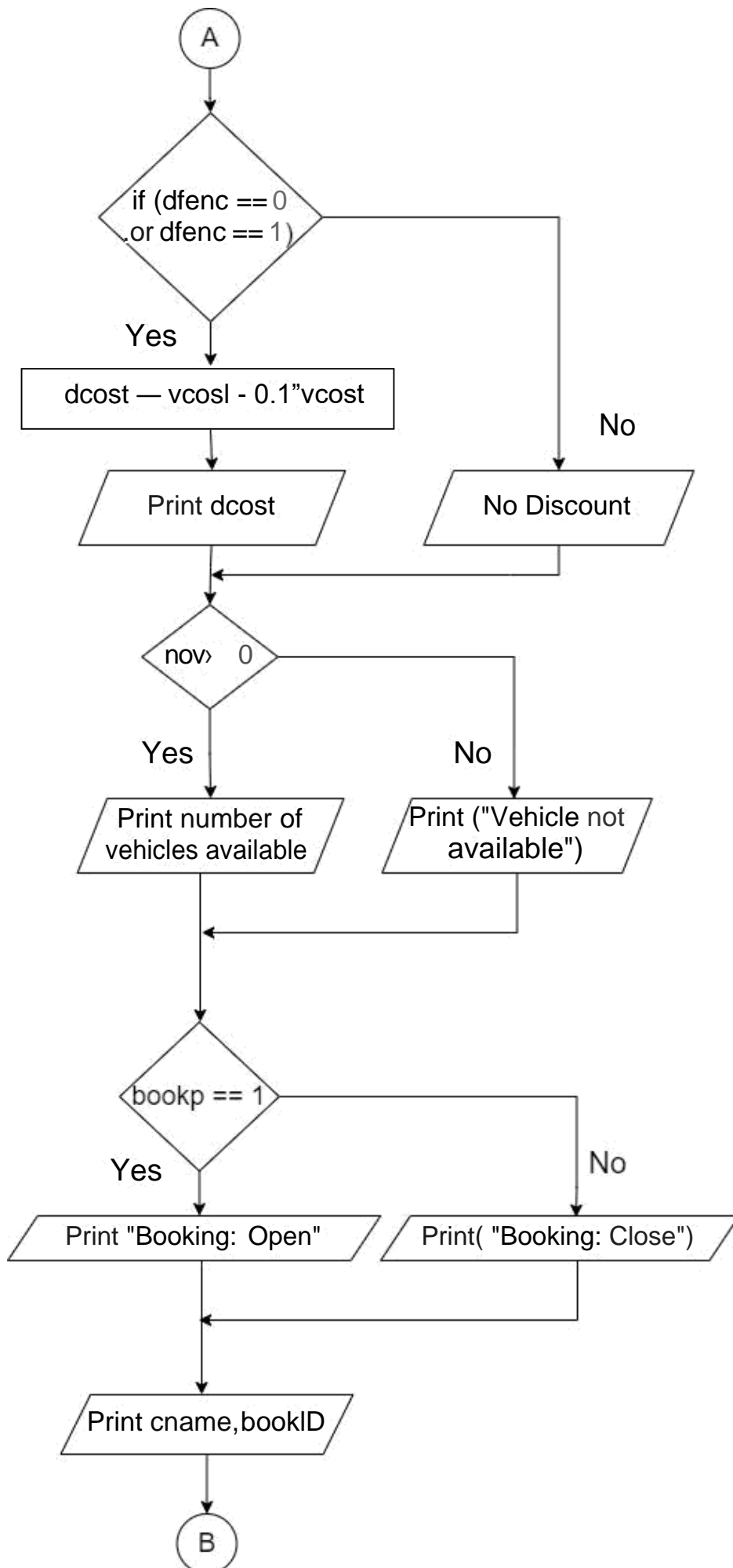
- Case 1: Print Customer Profile
- Case 2: Print Discount Calculation
- Case 3: Print E-Quote
- Case 4: Exit

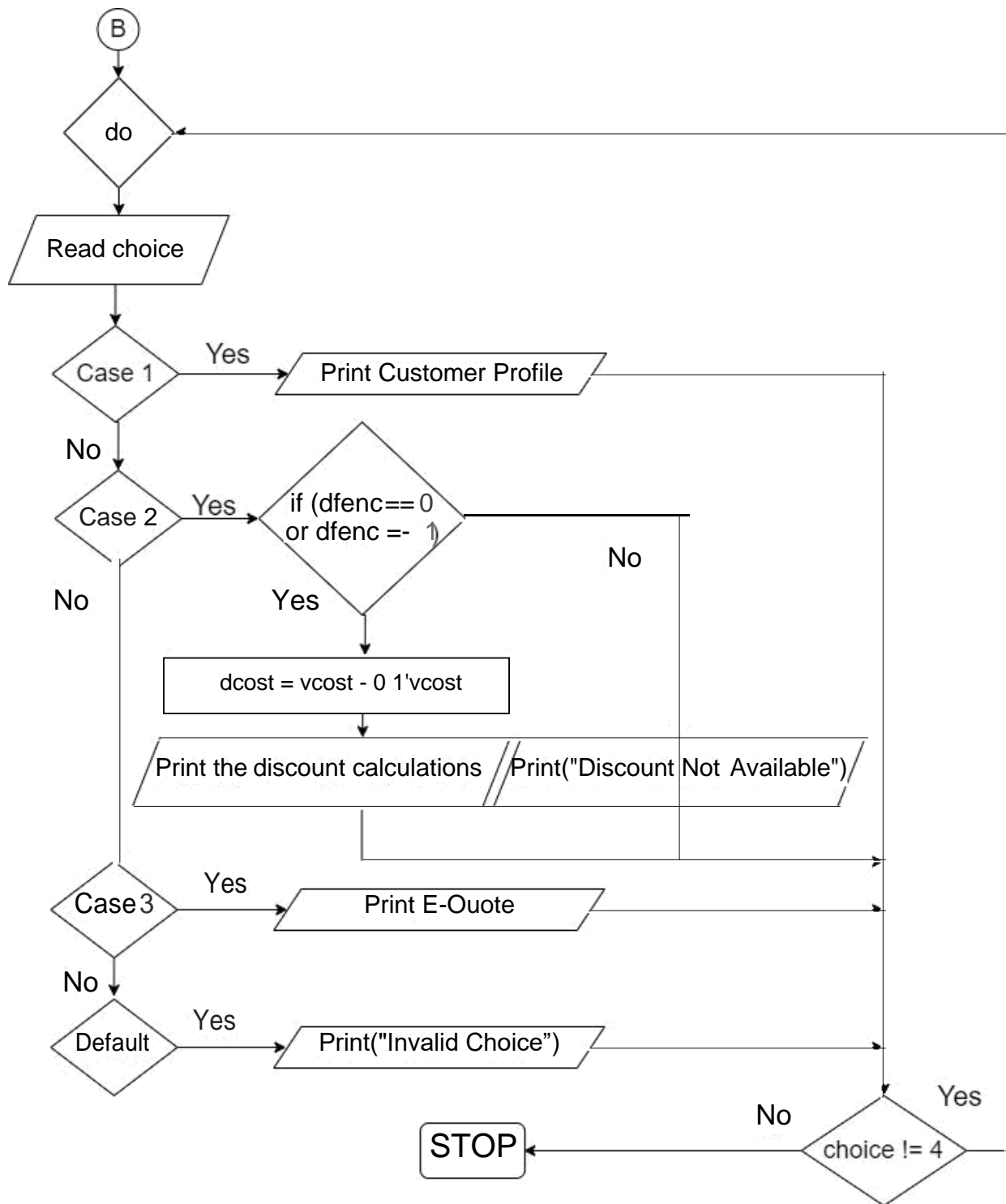
Step 11: Read choice and perform its respective case. The loop continues until the choice is not equal to 4.

Step 12: Stop

**FLOWCHART:**







## PROGRAM:

```
//Automobile Management-Ex.3
#include <stdio.h>
enum variants { Hatchback, Sedan, SUV, MUV };
enum defence { defence, exdefence };
int main() {
    //Get the details of the car and customer
    char vname[20], vcolor[10], cname[20], gendr[20], engine[20];
    enum variants vtype;
    enum defence dfenc;
    float vcost, dcost;
    int nov, bookp, bookid, choice;
    //Get the details from the user
    printf("Enter name of the vehicle: ");
    scanf("%s", &vname);
    printf("Variant of the vehicle:\n(a) Hatchback\n(b) Sedan\n(c) SUV\n(d) MUV\n");
    printf("Choose Variant (0, 1, 2, 3): ");
    scanf("%d", &vtype);
    //Check the type of vehicle for cost of the vehicle
    if (vtype == 0) {
        printf("Enter Cost of the Hatchback (4L - 8L): ");
        scanf("%f", &vcost);
    }
    else if (vtype == 1) {
        printf("Enter Cost of the Sedan (8L - 11L): ");
        scanf("%f", &vcost);
    }
    else if (vtype == 2) {
        printf("Enter Cost of the SUV (13L - 40L): ");
        scanf("%f", &vcost);
    }
    else if (vtype == 3) {
        printf("Enter Cost of the MUV (5L - 25L): ");
        scanf("%f", &vcost);
    }
    else {
        printf("Invalid Input!!\n");
    }
    printf("Enter colour of the vehicle: ");
    scanf("%s", &vcolor);
    printf("Enter number of vehicles available: ");
    scanf("%d", &nov);
    printf("Enter booking period(open-1, close-0): ");
    scanf("%d", &bookp);
    printf("Enter name of the customer: ");
    scanf("%s", &cname);
    printf("Enter gender: ");
    scanf("%s", &gendr);
    printf("Occupation:\n");
    printf("(a) Defence worker\n(b) Ex-defence worker\n(c) Neither\n");
    printf("Choose Occupation(0, 1, 2): ");
    scanf("%d", &dfenc);
    printf("Enter booking ID: ");
    scanf("%d", &bookid);
    //Print Invoice
    printf("\n\t-----INVOICE ----- \n");
    printf("\tName of the customer: %s\n", cname);
    printf("\tBooking ID: %d\n", bookid);
    printf("\tName of the vehicle: %s\n", vname);
    //Check the type of vehicle for Invoice
    if (vtype == 0) {
        printf("\tVariant: Hatchback\n");
    }
    else if (vtype == 1) {
        printf("\tVariant: Sedan\n");
    }
}
```

```

}
else if (vtype == 2) {
    printf("\tVariant: SUV\n");
}
else if (vtype == 3) {
    printf("\tVariant: MUV\n");
}
else {
    printf("\tInvalid Input!!\n");
}
printf("\tColour: %s\n", vcolor);
//Check occupation for discount
if (dfenc == 0 || dfenc == 1) {
    dcost = vcost - (vcost * 0.1f);
    printf("\tCost after discount: %f\n", dcost);
}
else {
    printf("\tCost: %f\n", vcost);
}
//Check the number of vehicles available
(nov > 0) ? printf("\tNo of vehicles available: %d\n", nov)
: printf("\tVehicle not available\n");
//Check booking period
if (bookp == 1) {
    printf("\tBooking: Open\n");
}
else {
    printf("\tBooking: Close\n");
}
//Print Menu
do
{
    printf("\n-----MENU-----\n");
    printf("1.Customer Profile\n2.Discount Calculation\n3.Print E-
Quote\n4.Exit\n");
    printf("Enter your choice: ");
    scanf("%d", &choice);
    switch (choice) {
        case 1:
            //Print Customer Details
            printf("\n1.Customer Profile\n");
            printf("\tName: %s\n", cname);
            printf("\tGender: %s\n", gendr);
            printf("\tBooking ID: %d\n", bookid);
            if (dfenc == 0) {
                printf("\tOccupation: Defence Worker\n");
            }
            else if (dfenc == 1) {
                printf("\tOccupation: Ex-Defence Worker\n");
            }
            else {
                printf("\tAbout: Buyer\n");
            }
            break;
        case 2:
            //Print Discount Details
            printf("\n2.Discount Calculation\n");
            if (dfenc == 0 || dfenc == 1) {
                printf("\tTotal Cost: %f\n", vcost);
                printf("\tDiscount Amount: %f\n", vcost * 0.1f);
                dcost = vcost - (vcost * 0.1f);
                printf("\tCost after discount: %f\n", dcost);
            }
            else {
                printf("\tDiscount not available.\n");
                printf("\tCost of the vehicle: %f\n", vcost);
            }
    }
}

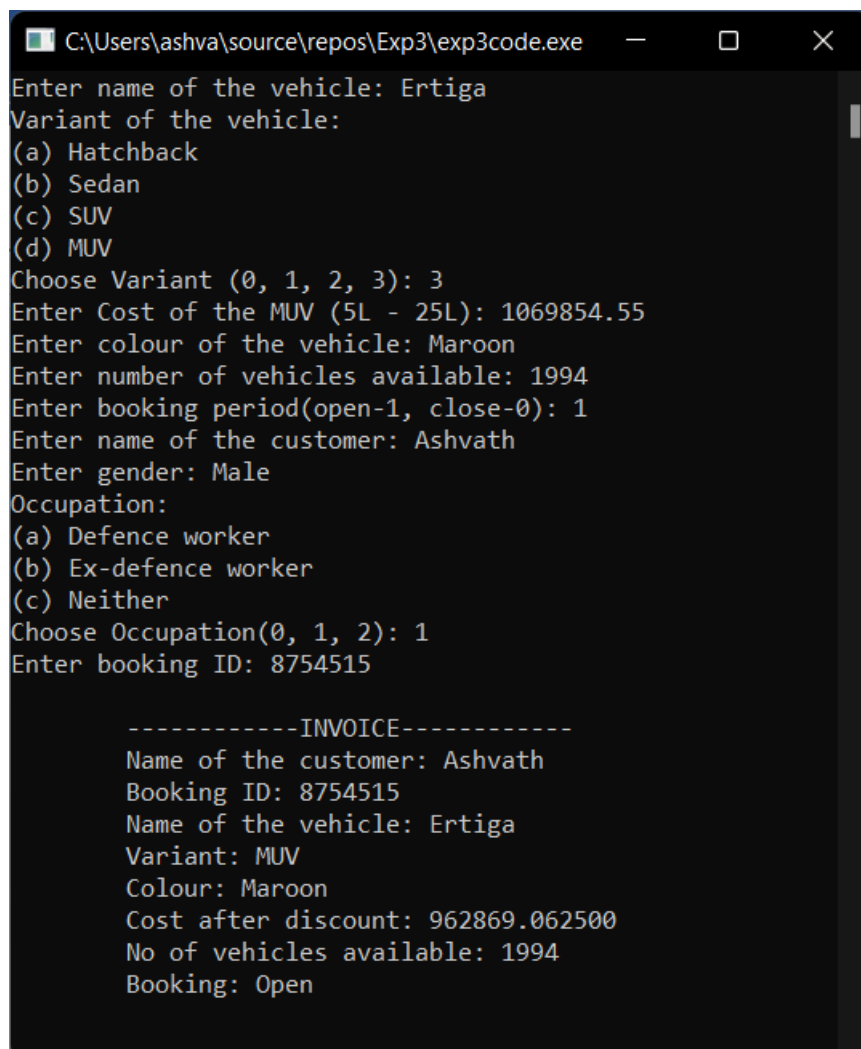
```

```

        break;
    case 3:
        //Print E-Quote
        printf("\n3.E-Quote\n");
        printf("\tManufacturer of Engine: ");
        scanf("%s", &engine);
        printf("\n\tPart Name: Engine\n\tCost: 80000\n\tManufacturer: %s\n\n",
engine);
        printf("\tPart Name: Brake system\n\tCost: 30000\n\tManufacturer: India
Brakes LTD.\n\n");
        printf("\tPart Name: Chasis\n\tCost: 120000\n\tManufacturer: Krit Chasis
Pvt.LTD\n");
        break;
    case 4:
        break;
    default:
        printf("\nInvalid choice\n");
        exit(0);
    }
} while (choice != 4);
return 0;
}

```

## OUTPUT:



```

C:\Users\ashva\source\repos\Exp3\exp3code.exe
Enter name of the vehicle: Ertiga
Variant of the vehicle:
(a) Hatchback
(b) Sedan
(c) SUV
(d) MUV
Choose Variant (0, 1, 2, 3): 3
Enter Cost of the MUV (5L - 25L): 1069854.55
Enter colour of the vehicle: Maroon
Enter number of vehicles available: 1994
Enter booking period(open-1, close-0): 1
Enter name of the customer: Ashvath
Enter gender: Male
Occupation:
(a) Defence worker
(b) Ex-defence worker
(c) Neither
Choose Occupation(0, 1, 2): 1
Enter booking ID: 8754515

-----INVOICE-----
Name of the customer: Ashvath
Booking ID: 8754515
Name of the vehicle: Ertiga
Variant: MUV
Colour: Maroon
Cost after discount: 962869.062500
No of vehicles available: 1994
Booking: Open

```

```
C:\Users\ashva\source\repos\Exp3\exp3code.exe

-----MENU-----
1.Customer Profile
2.Discount Calculation
3.Print E-Quote
4.Exit
Enter your choice: 1

1.Customer Profile
   Name: Ashvath
   Gender: Male
   Booking ID: 8754515
   Occupation: Ex-Defence Worker

-----MENU-----
1.Customer Profile
2.Discount Calculation
3.Print E-Quote
4.Exit
Enter your choice: 2

2.Discount Calculation
   Total Cost: 1069854.500000
   Discount Amount: 106985.453125
   Cost after discount: 962869.062500

-----MENU-----
1.Customer Profile
2.Discount Calculation
3.Print E-Quote
```

```
C:\Users\ashva\source\repos\Exp3\exp3code.exe

4.Exit
Enter your choice: 3

3.E-Quote
   Manufacturer of Engine: Toyota

   Part Name: Engine
   Cost: 80000
   Manufacturer: Toyota

   Part Name: Brake system
   Cost: 30000
   Manufacturer: India Brakes LTD.

   Part Name: Chasis
   Cost: 120000
   Manufacturer: Krit Chasis Pvt.LTD

-----MENU-----
1.Customer Profile
2.Discount Calculation
3.Print E-Quote
4.Exit
Enter your choice: 4

-----
Process exited after 111.1 seconds with return value 0
Press any key to continue . . .
```