

<p style="text-align: center;"><b>HCMC UNIVERSITY OF TECHNOLOGY AND EDUCATION</b></p> <p style="text-align: center;"><b>Faculty of International Education</b></p>	<p><b>Final Project</b></p> <p><b>Course name: C Programming</b></p> <p>Course ID: CCPR224064E</p>
<p><b>Topic: PORSCHE PRICING SYSTEM</b></p>	<p><b>Members :</b></p> <ul style="list-style-type: none"> <li>- Kim Ngọc Hưng – 21145015</li> <li>- Lê Hồ Minh Khoa – 21145019</li> <li>- Bùi Anh Kiệt - 21145590</li> </ul>

### **Scenario :**

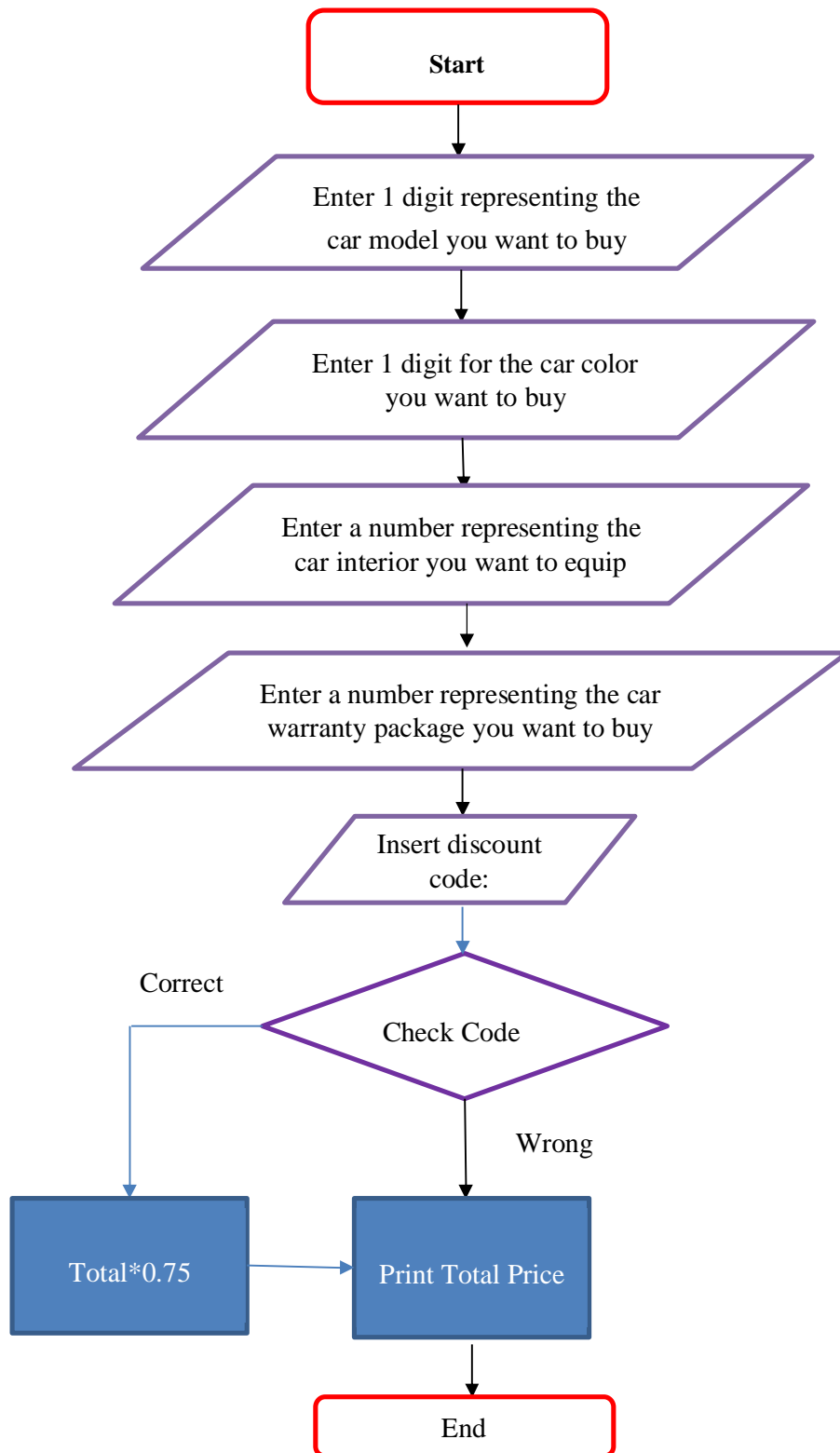
Since the demand for customers in the year-end occasions increases. Moreover, car price is extremely important to purchasers. In addition, car showroom also has some promotion programs in the end of the year with big discount events such as Friday Black... It is necessary for customers to know the price of the car they choose with options related to paint colors, car interior, insurance package is essential to support customers in making decisions to buy a car. To serve this demand, we wrote a C program to solve the problem above.

### **Tasks :**

Write a C program to assist customers in buying cars such as cars, car colors, car furniture and warranty packages. Then design a program for customers to enter the discount code. Support for sale facilities in adjusting data related to the car price in the most convenient way.

### **Solutions :**

- **Flowchart**



## - Code and comments

```
- #include <stdio.h>
- #include <conio.h>
- #include <string.h>
-
- struct DongXe {
-     double gia_xe;
- };
-
- struct MauXe {
-     double gia_son;
- };
-
- struct NoiThatXe {
-     double gia_noi_that;
- };
-
- struct BaoHanhXe {
-     double gia_bao_hanh;
- };
-
- double car_line(double current_total, struct DongXe cars[])
- {
-     int m;
-     printf("\nList of Porsche models we currently have:\n");
-     printf("1. Porsche Cayenne (Standard price: 4.930.000.000 VND)\n");
-     printf("2. Porsche Macan (Standard price: 3.150.000.000 VND)\n");
-     printf("3. Porsche Taycan (Standard price: 4.170.000.000 VND)\n");
-     printf("4. Porsche Panamera (Standard price: 5.560.000.000 VND)\n");
-     printf("5. Porsche 718 Boxster (Standard price: 3.740.000.000
- VND)\n");
-     printf("6. Porsche 718 Cayman (Standard price: 3.620.000.000
- VND)\n");
-     printf("7. Porsche 911 Carrera (Standard price: 7.130.000.000
- VND)\n");
-     printf("8. Porsche 911 Targa (Standard price: 8.500.000.000
- VND)\n");
-     printf("9. Porsche 911 Turbo (Standard price: 13.420.000.000
- VND)\n");
-     printf("10. Porsche 911 GT2 RS (Standard price: 20.200.000.000
- VND)\n");
-     do {
-         printf("Enter a number for the car you want to buy:\n");
-         scanf("%d", &m);
-     }
-     while((m<1) || (m>10));
-
-     current_total = current_total + cars[m - 1].gia_xe;
-     return current_total;
- }
```

```

double paint(double current_total, struct MauXe paint_price[])
{
    int n;
    printf("\nList of colors we have available:\n");
    printf("1. Black (Standard price: 283.500.000 VND)\n");
    printf("2. White (Standard price: 283.500.000 VND)\n");
    printf("3. Grey (Standard price: 297.500.000 VND)\n");
    printf("4. Brown(Standard price: 297.500.000 VND)\n");
    printf("5. Cream (Standard price: 297.500.000 VND)\n");
    printf("6. Red (Standard price: 318.280.225 VND)\n");
    printf("7. Blue (Standard price: 318.280.225 VND)\n");
    printf("8. Yellow (Standard price: 318.280.225 VND)\n");

    do {
        printf("Enter 1 number for the color of the car you want to
buy:\n");
        scanf("%d", &n);
    }
    while((n<1)|| (n>8));

    current_total += paint_price[n - 1].gia_son;
    return current_total;
}

double interior(double current_total, struct NoiThatXe interior_price[])
{
    int v;
    printf("\nList of types of interior we currently have:\n");
    printf("1. Low-class (Additional amount: 0VND)\n");
    printf("2. Standard-class (Additional amount: 25.000.000 VND)\n");
    printf("3. High-class (Additional amount: 50.000.000 VND)\n");
    printf("4. Premium-class (Additional amount: 100.000.000 VND)\n");

    do {
        printf("Enter 1 number for the interior you want to buy:\n");
        scanf("%d", &v);
    }
    while((v<1)|| (v>4));

    current_total += interior_price[v - 1].gia_noi_that;
    return current_total;
}

double insurance(double current_total, struct BaoHanhXe
insurance_price[])
{
    int p;
    printf("\nList of car warranty packages we currently have:\n");
    printf("1. Paint warranty 3 year (Standard price: 36.400.000
VND)\n");

```

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    printf("2. Spare parts warranty 3 year (Standard price: 27.300.000
VND)\n");
    printf("3. Body warranty 3 year (Standard price: 81.900.000
VND)\n");
    do {
        printf("Enter a number for the warranty pack you want to
buy: \n");
        scanf("%d", &p);
    }
    while((p<1) || (p>3));

    current_total += insurance_price[p - 1].gia_bao_hanh;
    return current_total;
}
int main()
{
    system("CLS");
    char code_giam_gia[100];
    double total=0;
    struct DongXe cars[12];
    struct MauXe paint_price[10];
    struct NoiThatXe interior_price[4];
    struct BaoHanhXe insurance_price[4];
    FILE *f;
    double buffer;
    /* Open file for both reading and writing */
    f = fopen("C:\\Khoa\\UTE_HK1_N2\\C Programming\\Cars\\car_line.txt",
"r");

    /* Read and display data */
    for (int i=0; i<10; i++)
    {
        fscanf(f, "%lf", &buffer);
        cars[i].gia_xe= buffer;
    }
    fclose(f);

    f = fopen("C:\\Khoa\\UTE_HK1_N2\\C
Programming\\Cars\\car_paint.txt", "r");
    for (int i=0; i<8; i++)
    {
        fscanf(f, "%lf", &buffer);
        paint_price[i].gia_son= buffer;
    }
    fclose(f);

    f = fopen("C:\\Khoa\\UTE_HK1_N2\\C
Programming\\Cars\\car_interior.txt", "r");
    for (int i=0; i<4; i++)
    {
        fscanf(f, "%lf", &buffer);

```

```

        interior_price[i].gia_noi_that= buffer;
    }
    fclose(f);

    f = fopen("C:\\Khoa\\UTE_HK1_N2\\C
Programmi ng\\Cars\\car_insurance.txt", "r");
    for (int i=0; i<3; i++)
    {
        fscanf(f, "%lf", &buffer);
        insurance_price[i].gia_bao_hanh= buffer;
    }
    fclose(f);

    printf("\nXi n chao quy khach!\n");
    total = car_line(total, cars);
    total = paint(total, paint_price);
    total = interior(total, interior_price);
    total = insurance(total, insurance_price);
    printf("\nEnter discount code: ");
    scanf("%s", code_giam_gia);
    if (!strcmp(code_giam_gia, "391875"))
    {
        printf("CONGRATULATIONS! YOUR DISCOUNT CODE EXACTLY!\n");
        printf("YOU GET 25 PERCENT OFF!\n");
        total=total*0.75;
    }
    else
    {
        printf("\nSorry, the discount code is not correct!\n");
    }
    printf("\nThe total damage to your wallet is: %lf\n\n", total);

    return 0;
}

```