**Institute of Computer Technology**

**B. Tech. Computer Science and Engineering**

**Sub: ESFP – II**

**Course Code: 2CSE203**

**Practical – 6**

**Name: Jaymin Gondaliya**

**Enrollment No: 23162171007**

**Sem - 2**

**Branch: CS**

**Class: B**

**Batch: 25**

**Objective:**

To understand the concept of “using namespace std”, using std, and namespace in C++.

**Problem Definition-1:** Make sample project using class, object, cout, cin, endl, getline() function, ignore(), and looping. Preform the following instruction in sample project.

1. Insert minimum 5 newly available cars information in a showroom.

2. Display all newly cars to customer if selected to display.

3. Find most expensive car from the showroom.

4. Find most cheaper car from showroom.

5. Sort the cars by price in ascending or descending order to display as per the customers choice.

**Code:**

#include <iostream>

#include <string>

using namespace std;

class cars {

public:

    struct info {

        string model;

        string brand;

        int year;

        string color;

        int price;

    } info\_data[10], asc[10], des[10], temp;

    int numCars;

    void input() {

        cout << "Enter the number of cars: ";

        cin >> numCars;

        cin.ignore();

        cout << "Enter the Information about the available cars" << endl;

        for (int i = 0; i < numCars; i++) {

            cout << "Enter the Information about Car number " << (i + 1) << endl;

            cout << "Enter Car's Model: ";

            getline(cin, info\_data[i].model);

            cout << "Enter Car's Brand: ";

            getline(cin, info\_data[i].brand);

            cout << "Enter Car's Year: ";

            cin >> info\_data[i].year;

            cin.ignore();

            cout << "Enter Car's Colour: ";

            getline(cin, info\_data[i].color);

            cout << "Enter Car's Price: ";

            cin >> info\_data[i].price;

            cin.ignore();

            asc[i] = info\_data[i];

            des[i] = info\_data[i];

        }

    }

    void display(struct info detls[]) {

        cout << "Model" << "\t" << "Brand" << "\t" << "Year" << "\t" << "Color" << "\t" << "Price" << endl;

        for (int j = 0; j < numCars; j++) {

            cout << detls[j].model << "\t" << detls[j].brand << "\t" << detls[j].year << "\t" << detls[j].color << "\t" << detls[j].price << endl << endl;

        }

    }

    void ascending() {

        for (int i = 0; i < numCars; i++) {

            for (int j = 0; j < numCars - 1; j++) {

                if (asc[j].price > asc[j + 1].price) {

                    temp = asc[j + 1];

                    asc[j + 1] = asc[j];

                    asc[j] = temp;

                }

            }

        }

    }

    void descending() {

        for (int i = 0; i < numCars; i++) {

            for (int j = 0; j < numCars - 1; j++) {

                if (des[j].price < des[j + 1].price) {

                    temp = des[j + 1];

                    des[j + 1] = des[j];

                    des[j] = temp;

                }

            }

        }

    }

};

int main() {

    int choice, exit = 1;

    cars dealer;

    dealer.input();

    dealer.ascending();

    dealer.descending();

    cout << endl << endl;

    cout << "Information about the available cars: " << endl;

    dealer.display(dealer.info\_data);

    while (exit != 0) {

        cout << endl << "--------------Options-----------";

        cout << endl << "Press <1> to Display car list" << endl;

        cout << "Press <2> to Display most expensive car" << endl;

        cout << "Press <3> to Display most cheaper car" << endl;

        cout << "Press <4> to Display car list according to price (Ascending)" << endl;

        cout << "Press <5> to Display car list according to price (descending)" << endl;

        cout << "Press <0> to exit" << endl;

        cout << endl << "Enter your Choice: ";

        cin >> choice;

        cout << endl;

        switch (choice) {

            case 1:

                cout << "Information about the available cars: " << endl;

                dealer.display(dealer.info\_data);

                break;

            case 2:

                cout << "most expensive car is: " << endl;

                cout << "Model" << "\t" << "Brand" << "\t" << "Year" << "\t" << "Color" << "\t" << "Price" << endl;

                cout << dealer.des[0].model << "\t" << dealer.des[0].brand << "\t" << dealer.des[0].year << "\t" << dealer.des[0].color << "\t" << dealer.des[0].price << endl;

                break;

            case 3:

                cout << "cheapest car is: " << endl;

                cout << "Model" << "\t" << "Brand" << "\t" << "Year" << "\t" << "Color" << "\t" << "Price" << endl;

                cout << dealer.asc[0].model << "\t" << dealer.asc[0].brand << "\t" << dealer.asc[0].year << "\t" << dealer.asc[0].color << "\t" << dealer.asc[0].price << endl;

                break;

            case 4:

                cout << "cars sorted by price (Ascending) : " << endl;

                dealer.display(dealer.asc);

                break;

            case 5:

                cout << "cars sorted by price (descending) : " << endl;

                dealer.display(dealer.des);

                break;

            case 0:

                exit = 0;

                cout << "Exit.......";

                break;

            default:

                cout << "Invalid choice, enter a valid option.";

                break;

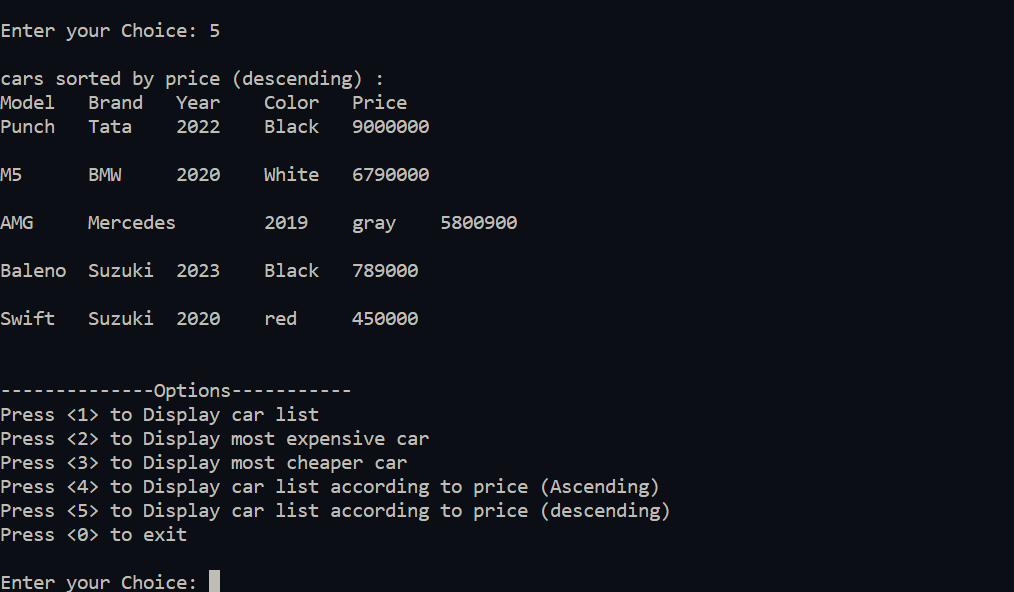
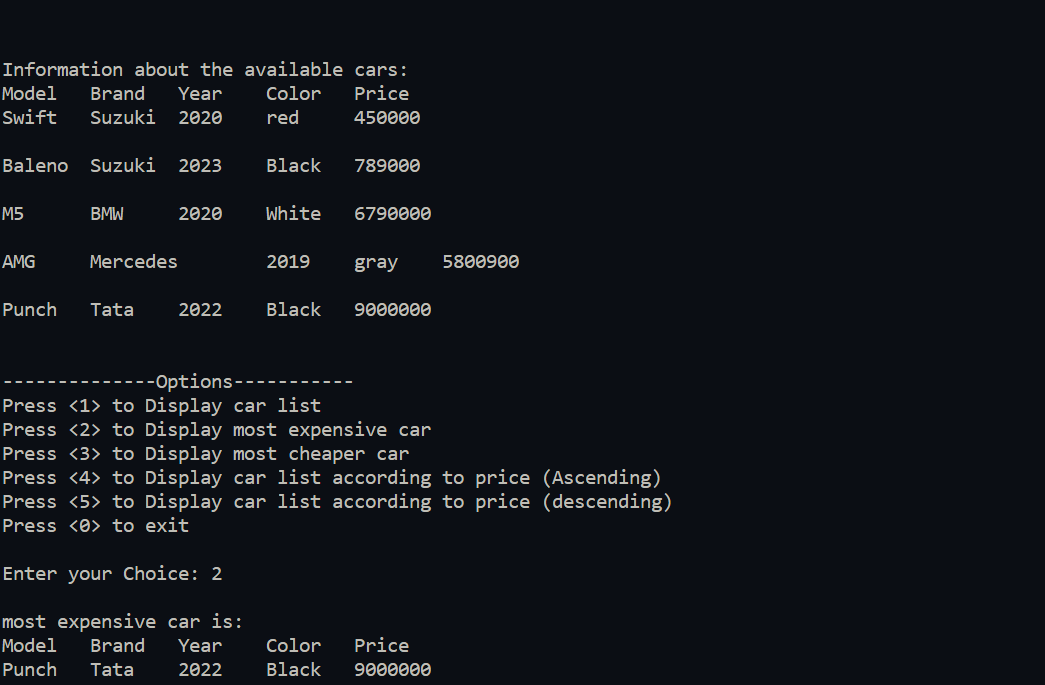
        }

    }

    return 0;

}

**Output –**

****