Institute of Computer Technology

B. Tech. Computer Science and Engineering

Sub: ESFP – II

Course Code: 2CSE203

Practical – 6

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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 –

```
Information about the available cars:
Model   Brand   Year    Color   Price
Swift   Suzuki  2020    red     450000

Baleno  Suzuki  2023    Black   789000

M5      BMW     2020    White   6790000

AMG     Mercedes        2019    gray    5800900

Punch   Tata    2022    Black   9000000


-------------Options-----------
Press <1> to Display car list
Press <2> to Display most expensive car
Press <3> to Display most cheaper car
Press <4> to Display car list according to price (Ascending)
Press <5> to Display car list according to price (descending)
Press <0> to exit

Enter your Choice: 2

most expensive car is:
Model   Brand   Year    Color   Price
Punch   Tata    2022    Black   9000000
```

```
Enter your Choice: 5

cars sorted by price (descending) :
Model   Brand   Year    Color   Price
Punch   Tata    2022    Black   9000000

M5      BMW     2020    White   6790000

AMG     Mercedes        2019    gray    5800900

Baleno  Suzuki  2023    Black   789000

Swift   Suzuki  2020    red     450000


-------------Options-----------
Press <1> to Display car list
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Press <5> to Display car list according to price (descending)
Press <0> to exit

Enter your Choice:
```