Ganpat University

Faculty of Engineering & Technology

Computer Science & Engineering

(2CSE204) Basics of Operating System and Shell Scripting

Name:- Dwij Vatsal Desai

Sem:- 2

Sub: - ESFP-II

Enrollment No.:- 23162121027

Prac:- 7

Date:- 1/4/2024

Practical 7

Definition:

Complete the code for the object assigned to you to satisfy following specifications.
1. Minimum 2 constructor should be in a program like (Default constructor, two Parameterized constructor and copy constructor).
2. You must use access specifiers like (public/private/protected) for data member and member function declaration in program as per the requirements.
3. You are supposed to define normal function as per the requirement for displaying the information.
4. You must declare a variable as string type. If required, you can use the string function also.
5. You need to add a minimum one function with an object as a parameter for the practical. As per your practical functionality requirement, if necessary, you can add more functions.
6. Add one separate module in your given topic, where you must implement the concept of operator overloading.
7. Take minimum 5 data from the user and display according to the choice of user category wise. (Minimum three different options should be there for displaying information, and if you want more as per program requirement you can add more choices). Use string comparison to check and display a specific record based on string inputs from user.
8. After all functionality execution, you need to call the destructor function.
[Note: You must implement object-oriented concept for the practical]

Code:-

```
#include <iostream>
#include <fstream>
#include <string>
#include <limits>

using namespace std;

class elearning //only for b.tech
{
private:
    int expression;
    string selectedCourse;
    string courseLevel;
    string preferredWayOfLearning;
    string durationForEachDay;

public:
    // Default constructor
    elearning()
    {
        // General initialization
        expression = 0; // Default value
    }

    // Parameterized constructor
    elearning(int exp)
    {
        // Initialization based on user input
        expression = exp;
        switch (expression)
        {
        case 1:
            cout << endl << "You chose Business" << endl << endl;
            selectedCourse = "Business";
            selectComputerCourse();
            break;
        case 2:
            cout << endl << "You chose Computer course" << endl << endl;
            selectedCourse = "Computer course";
            selectComputerCourse();
            break;
        case 3:
            cout << endl << "You chose Data science" << endl << endl;
            selectedCourse = "Data science";
            selectComputerCourse();
            break;
```

```
        case 4:
            cout << endl << "You chose ICT" << endl << endl;
            selectedCourse = "ICT";
            selectComputerCourse();
            break;
        default:
            break;
        }
    }

    void selectCourse()
    {
        cout << ">>>Course Selection<<<" << endl;
        cout << "<1> Business" << endl;
        cout << "<2> Computer course" << endl;
        cout << "<3> Data science" << endl;
        cout << "<4> ICT" << endl;
    }

    void selectComputerCourse()
    {
        int totalDuration = 0; // Initialize total duration
        int innerExpression = 0;
        while (true)
        {
            cout << endl << ">>>Enter choice for Computer course:<<<" << endl;
            cout << "<1> Course Level" << endl;
            cout << "<2> Preferred Way of Learning" << endl;
            cout << "<3> Duration for Each Day" << endl;
            cout << "<4> Exit" << endl;
            cin >> innerExpression;

            switch (innerExpression)
            {
            case 1: // Course Level
            {
                int level = 0;
                cout << "Course Level:" << endl;
                cout << "<1> 1-2 weeks (basic)" << endl;
                cout << "<2> 2-5 weeks (intermediate)" << endl;
                cout << "<3> 6-7 weeks (advance)" << endl;
                cin >> level;
                switch (level)
                {
                case 1:
                    cout << "1-2 weeks (basic)" << endl;
                    courseLevel = "1-2 weeks (basic)";
                    totalDuration += 2; // Add 2 weeks to total duration
```

```
                break;
            case 2:
                cout << "2-5 weeks (intermediate)" << endl;
                courseLevel = "2-5 weeks (intermediate)";
                totalDuration += 5; // Add 5 weeks to total duration
                break;
            case 3:
                cout << "6-7 weeks (advance)" << endl;
                courseLevel = "6-7 weeks (advance)";
                totalDuration += 7; // Add 7 weeks to total duration
                break;
            default:
                cout << "Invalid choice" << endl;
                break;
            }
            break;
        }
        case 2: // Preferred Way of Learning
        {
            int preferredWay = 0;
            cout << "Preferred Way of Learning:" << endl;
            cout << "<1> Guided project" << endl;
            cout << "<2> Personal practical" << endl;
            cout << "<3> Notes and concept learning" << endl;
            cin >> preferredWay;
            switch (preferredWay)
            {
            case 1:
                cout << "Guided project" << endl;
                preferredWayOfLearning = "Guided project";
                break;
            case 2:
                cout << "Personal practical" << endl;
                preferredWayOfLearning = "Personal practical";
                break;
            case 3:
                cout << "Notes and concept learning" << endl;
                preferredWayOfLearning = "Notes and concept learning";
                break;
            default:
                cout << "Invalid choice" << endl;
                break;
            }
            break;
        }
        case 3: // Duration for Each Day
        {
            int duration = 0;
```

```
                cout << "Duration for Each Day:" << endl;
                cout << "<1> 2 hours" << endl;
                cout << "<2> 4 hours" << endl;
                cout << "<3> 6 hours" << endl;
                cin >> duration;
                switch (duration)
                {
                case 1:
                    cout << "2 hours" << endl;
                    durationForEachDay = "2 hours";
                    break;
                case 2:
                    cout << "4 hours" << endl;
                    durationForEachDay = "4 hours";
                    break;
                case 3:
                    cout << "6 hours" << endl;
                    durationForEachDay = "6 hours";
                    break;
                default:
                    cout << "Invalid choice" << endl;
                    break;
                }
                break;
            }
            case 4: // Exit
                cout << "Exiting..." << endl;
                cout << "Total duration to complete the course: " <<
totalDuration << " weeks" << endl;
                storeDataToFile(); // Store data to file
                return; // Exit the function and terminate the loop
            default:
                cout << "Invalid choice" << endl;
                break;
            }
        }
    }

    void storeDataToFile()
    {
        ofstream file("elearning_data.txt", ios_base::app);
        file.is_open();
        if (file.is_open())
        {
            file << "Selected Course: " << selectedCourse << endl;
            file << "Course Level: " << courseLevel << endl;
            file << "Preferred Way of Learning: " << preferredWayOfLearning <<
endl;
```

```
            file << "Duration for Each Day: " << durationForEachDay << endl;
            file << "---------------------------------------" << endl;
            file.close();
            cout << "Data saved to elearning_data.txt" << endl;
        }
        else
        {
            cout << "Unable to open file" << endl;
        }
    }
};

int main()
{
    elearning obj1; // Calls default constructor
    obj1.selectCourse();
    int userChoice;
    cout << "Enter your choice: ";
    cin >> userChoice;
    cin.ignore(); // remove buffer

    elearning obj2(userChoice); // sends data to 'exp'

    return 0;
}
```

Output:-

```
PROBLEMS 1  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  C:\Users\dwijd\OneDrive\Documents\collage practicals\ESFP-II\Practical_7\Practical_7.exe

>>>Course Selection<<<
<1> Business
<2> Computer course
<3> Data science
<4> ICT
Enter your choice: 2

You chose Computer course


>>>Enter choice for Computer course:<<<
<1> Course Level
<2> Preferred Way of Learning
<3> Duration for Each Day
<4> Exit
1
Course Level:
<1> 1-2 weeks (basic)
<2> 2-5 weeks (intermediate)
<3> 6-7 weeks (advance)
2
2-5 weeks (intermediate)

>>>Enter choice for Computer course:<<<
<1> Course Level
<2> Preferred Way of Learning
<3> Duration for Each Day
<4> Exit
2
Preferred Way of Learning:
<1> Guided project
<2> Personal practical
<3> Notes and concept learning
3
Notes and concept learning

>>>Enter choice for Computer course:<<<
<1> Course Level
<2> Preferred Way of Learning
<3> Duration for Each Day
<4> Exit
3
Duration for Each Day:
<1> 2 hours
<2> 4 hours
<3> 6 hours
1
2 hours

>>>Enter choice for Computer course:<<<
<1> Course Level
<2> Preferred Way of Learning
<3> Duration for Each Day
<4> Exit
4
Exiting...
Total duration to complete the course: 5 weeks
Data saved to elearning_data.txt
PS C:\Users\dwijd\OneDrive\Documents\collage practicals\ESFP-II>
```

Recorded data in text file:-

Practical_7 > elearning_data.txt

```
Selected Course: Computer course
Course Level: 1-2 weeks (basic)
Preferred Way of Learning: Notes and concept learning
Duration for Each Day:
-------------------------------------
Selected Course: Data science
Course Level: 2-5 weeks (intermediate)
Preferred Way of Learning: Notes and concept learning
Duration for Each Day: 4 hours
-------------------------------------
Selected Course: Computer course
Course Level: 2-5 weeks (intermediate)
Preferred Way of Learning: Notes and concept learning
Duration for Each Day: 2 hours
-------------------------------------

```

Photo:-