Institute of Computer Technology

B. Tech. Computer Science and Engineering

Sub: ESFP – II

Course Code: 2CSE203

Practical – 13

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Sem - 2

Branch: CS

Class: B

Batch: 25

**Objective:**

To learn and implement object-oriented file handling concept, for create file,open file, write text into file, read text from file, close file by using some pre-defined classes like (ofstream, ifstream) with some pre-defined mode like (out mode, in mode, app mode, etc) and their function like good function, is_open (), and etc.

**Problem Definition-1:** Complete the code for the object assigned to you to satisfy the following specifications.

**Code:**

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

using namespace std;

class Employee {
private:
    string name;
    int id;
    double salary;
    string designation;
```

```
public:
    void input() {
        cout << "Enter name: ";
        cin >> name;
        cout << "Enter ID: ";
        cin >> id;
        cout << "Enter salary: ";
        cin >> salary;
        cout << "Enter designation: ";
        cin >> designation;
    }

    void display() {
        cout << "Name: " << name << endl;
        cout << "ID: " << id << endl;
        cout << "Salary: " << salary << endl;
        cout << "Designation: " << designation << endl;
    }

    string getName() {
        return name;
    }

    int getID() {
        return id;
    }

    double getSalary() {
        return salary;
    }

    string getDesignation() {
        return designation;
    }
};

void addData() {
    Employee emp;
    emp.input();

    ofstream file("data.txt", ios::app);
    if (file.is_open()) {
        file << emp.getName() << " " << emp.getID() << " " << emp.getSalary()
<< " " << emp.getDesignation() << endl;
        file.close();
        cout << "Data added successfully!" << endl;
    } else {
        cout << "Unable to open file." << endl;
```

```
    }
}

void viewData() {
    ifstream file("data.txt");
    if (file.is_open()) {
        string name;
        int id;
        double salary;
        string designation;
        while (file >> name >> id >> salary >> designation) {
            cout << "Name: " << name << ", ID: " << id << ", Salary: " <<
salary << ", Designation: " << designation << endl;
        }
        file.close();
    } else {
        cout << "Unable to open file." << endl;
    }
}

void deleteData() {
    string name;
    cout << "Enter name to delete: ";
    cin >> name;

    ifstream file("data.txt");
    if (file.is_open()) {
        ofstream temp("temp.txt");
        string n;
        int id;
        double salary;
        string designation;
        while (file >> n >> id >> salary >> designation) {
            if (n != name) {
                temp << n << " " << id << " " << salary << " " << designation
<< endl;
            }
        }
        file.close();
        temp.close();
        remove("data.txt");
        rename("temp.txt", "data.txt");
        cout << "Data deleted successfully!" << endl;
    } else {
        cout << "Unable to open file." << endl;
    }
}
```

```
void updateData() {
    string name;
    cout << "Enter name to update: ";
    cin >> name;

    ifstream file("data.txt");
    if (file.is_open()) {
        ofstream temp("temp.txt");
        string n;
        int id;
        double salary;
        string designation;
        while (file >> n >> id >> salary >> designation) {
            if (n != name) {
                temp << n << " " << id << " " << salary << " " << designation
<< endl;
            } else {
                Employee emp;
                emp.input();
                temp << emp.getName() << " " << emp.getID() << " " <<
emp.getSalary() << " " << emp.getDesignation() << endl;
            }
        }
        file.close();
        temp.close();
        remove("data.txt");
        rename("temp.txt", "data.txt");
        cout << "Data updated successfully!" << endl;
    } else {
        cout << "Unable to open file." << endl;
    }
}

void searchData() {
    string name;
    cout << "Enter name to search: ";
    cin >> name;

    ifstream file("data.txt");
    if (file.is_open()) {
        string n;
        int id;
        double salary;
        string designation;
        bool found = false;
        while (file >> n >> id >> salary >> designation) {
            if (n == name) {
```

```
                cout << "Name: " << n << ", ID: " << id << ", Salary: " <<
salary << ", Designation: " << designation << endl;
                found = true;
                break;
            }
        }
        file.close();
        if (!found) {
            cout << "Data not found." << endl;
        }
    } else {
        cout << "Unable to open file." << endl;
    }
}

int main() {
    int choice;
    do {
        cout << "1. Add data" << endl;
        cout << "2. View data" << endl;
        cout << "3. Delete data" << endl;
        cout << "4. Update data" << endl;
        cout << "5. Search data" << endl;
        cout << "0. Exit" << endl;
        cout << "Enter your choice: ";
        cin >> choice;

        switch (choice) {
            case 1:
                addData();
                break;
            case 2:
                viewData();
                break;
            case 3:
                deleteData();
                break;
            case 4:
                updateData();
                break;
            case 5:
                searchData();
                break;
            case 0:
                cout << "Exiting..." << endl;
                break;
            default:
                cout << "Invalid choice. Please try again." << endl;
```

```
        }
    } while (choice != 0);

    return 0;
}
```

**Output –**

```
PS C:\ICT\SEM-2\ESFP-II> cd 'c:\ICT\SEM-2\ESFP-II\Practical-13\output'
PS C:\ICT\SEM-2\ESFP-II\Practical-13\output> & .\'main.exe'
 1. Add data
 2. View data
 3. Delete data
 4. Update data
 5. Search data
 0. Exit
 Enter your choice: 1
 Enter name: jaimin
 Enter ID: 1001
 Enter salary: 20000
 Enter designation: CS
 Data added successfully!
 1. Add data
 2. View data
 3. Delete data
 4. Update data
 5. Search data
 0. Exit
 Enter your choice: 1
 Enter name: Test
 Enter ID: 3030
 Enter salary: 9000
 Enter designation: BDA
 Data added successfully!
 1. Add data
 2. View data
 3. Delete data
```

```
Enter designation: BDA
Data added successfully!
1. Add data
2. View data
3. Delete data
4. Update data
5. Search data
0. Exit
Enter your choice: 2
Name: jaimin, ID: 1002, Salary: 20000, Designation: CS
Name: jaimin, ID: 1001, Salary: 20000, Designation: CS
Name: Test, ID: 3030, Salary: 9000, Designation: BDA
1. Add data
2. View data
3. Delete data
4. Update data
5. Search data
0. Exit
Enter your choice: 4
Enter name to update: jaimin
Enter name: root
Enter ID: 4949
Enter salary: 56565
Enter designation: CBA
Enter name: 2
Enter ID: 44
Enter salary: 4444
Enter designation: gg
Data updated successfully!
```

```
Enter your choice: 2
Name: root, ID: 4949, Salary: 56565, Designation: CBA
Name: 2, ID: 44, Salary: 4444, Designation: gg
Name: Test, ID: 3030, Salary: 9000, Designation: BDA
1. Add data
2. View data
3. Delete data
4. Update data
5. Search data
0. Exit
Enter your choice: 3
Enter name to delete: root
Data deleted successfully!
1. Add data
2. View data
3. Delete data
4. Update data
5. Search data
0. Exit
Enter your choice:
```