Assignment-3

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Batch - C

Use array of objects here

/*Design an educational Institution that maintains a database of all staff members where the database is
segregated into a number of classes having hierarchical relationships. Define all classes with suitable
data members and required member functions to build the database and fetch individual details .*/

Code:-

```cpp
#include <iostream>
#include <string>
using namespace std;

class Staff {
protected:
    string name, deptname;
    int staff_ID;

public:
    void accept1();
    void display1();
};

class Teacher : public Staff {
private:
    string role, section;

public:
    void accept2();
    void display2();
};

class SupportStaff : public Staff {
```

```cpp
private:
    string areaofsupport;

public:
    void accept3();
    void display3();
};

void Staff::accept1() {
    cout << "Enter staff ID: ";
    cin >> staff_ID;
    cout << "Enter name: ";
    cin.ignore();
    getline(cin, name);
    cout << "Enter department: ";
    getline(cin, deptname);
}

void Staff::display1() {
    cout << "Staff ID: " << staff_ID << endl;
    cout << "Name: " << name << endl;
    cout << "Department: " << deptname << endl;
}

void Teacher::accept2() {
    accept1();
    cout << "Enter role: ";
    getline(cin, role);
    cout << "Enter section: ";
    getline(cin, section);
}

void Teacher::display2() {
    display1();
    cout << "Role: " << role << endl;
    cout << "Section: " << section << endl;
}

void SupportStaff::accept3() {
    accept1();
    cout << "Enter area of support: ";
    getline(cin, areaofsupport);
}
```

```cpp
void SupportStaff::display3() {
    display1();
    cout << "Area of support: " << areaofsupport << endl;
}

int main() {
    int n, m;

    cout << "Enter number of teachers: ";
    cin >> n;
    Teacher teachers[n]; // Array of Teacher objects

    for (int i = 0; i < n; i++) {
        cout << "\n--- Enter Teacher " << i + 1 << " Information ---\n";
        teachers[i].accept2();
    }

    cout << "\n--- Displaying All Teachers ---\n";
    for (int i = 0; i < n; i++) {
        cout << "\nTeacher " << i + 1 << ":\n";
        teachers[i].display2();
    }

    cout << "\n-----------------------------------\n";

    cout << "Enter number of support staff: ";
    cin >> m;
    SupportStaff supportStaff[m]; // Array of SupportStaff objects

    for (int i = 0; i < m; i++) {
        cout << "\n--- Enter Support Staff " << i + 1 << " Information ---\n";
        supportStaff[i].accept3();
    }

    cout << "\n--- Displaying All Support Staff ---\n";
    for (int i = 0; i < m; i++) {
        cout << "\nSupport Staff " << i + 1 << ":\n";
        supportStaff[i].display3();
    }

    return 0;
}
```

OUTPUT:-

Enter number of teachers: 2

--- Enter Teacher 1 Information ---
Enter staff ID: 12345
Enter name: abc
Enter department: c
Enter role: science
Enter section: type-1

--- Enter Teacher 2 Information ---
Enter staff ID: 67890
Enter name: def
Enter department: q
Enter role: chemistry
Enter section: type-2

--- Displaying All Teachers ---

Teacher 1:
Staff ID: 12345
Name: abc
Department: c
Role: science
Section: type-1

Teacher 2:
Staff ID: 67890
Name: def
Department: q
Role: chemistry
Section: type-2

Enter number of support staff:
2

--- Enter Support Staff 1 Information ---
Enter staff ID: 12345
Enter name: qwe
Enter department: c
Enter area of support: help

--- Enter Support Staff 2 Information ---
Enter staff ID: 67890

Enter name: tyu
Enter department: q
Enter area of support: sos

--- Displaying All Support Staff ---

Support Staff 1:
Staff ID: 12345
Name: qwe
Department: c
Area of support: help

Support Staff 2:
Staff ID: 67890
Name: tyu
Department: q
Area of support: sos