

## Assignment # 03 & 04



### **SUBMITTED BY:**

Awais Saddiqui

### **REG NO:**

21PWCSE1993

### **SECTION:**

"A"

### **SUMITTED TO:**

Nasru Minallah Sir

**UNIVERSITY OF ENGINEERING AND TECHNOLOGY PESHAWAR**  
**COMPUTER SYSTEM ENGINEERING**

## **Assignment # 03:**

### **Source Code:**

```
#include <iostream>

using namespace std;

const int MAX = 20;

class IntegerSet {
    private:
        int st[MAX];
    public:
        IntegerSet() {
            for (int i = 0; i < MAX; i++)
                st[i] = 0;
        }
        void insertElement(int value) {
            st[value] = 1;
        }
        void deleteValue(int value) {
            st[value] = 0;
        }
        IntegerSet operator+(const IntegerSet& other) {
            IntegerSet result;
            for (int i = 0; i < MAX; i++)
                if (st[i] == 1 || other.st[i] == 1)
                    result.insertElement(i);
            return result;
        }
        IntegerSet operator*(const IntegerSet& other) {
            IntegerSet result;
            for (int i = 0; i < MAX; i++)
                if (st[i] == 1 && other.st[i] == 1)
```

```

        result.insertElement(i);
    return result;
}

IntegerSet operator~() {
    IntegerSet result;
    for (int i = 0; i < MAX; i++)
        if (st[i] == 0)
            result.insertElement(i);
    return result;
}

void display() {
    cout << "{ ";
    for (int i = 0; i < MAX; i++)
        if (st[i] == 1)
            cout << i << ", ";
    cout << "\b\b } \n";
}

};

main(){
    IntegerSet s, t;
    s.insertElement(2);
    s.insertElement(5);
    s.insertElement(7);
    s.insertElement(3);
    s.insertElement(18);
    s.insertElement(16);
    cout<< "Set s: ";s.display();
    s.deleteValue(2);
    s.deleteValue(8);
    cout<< "After Deleting 2 and 8, s: ";s.display();
    t.insertElement(3);

```

```

t.insertElement(5);

t.insertElement(7);

t.insertElement(13);

cout<< "\nSet t: ";t.display();

t.deleteValue(3);

cout<< "After Deleting 3, t: ";t.display();

IntegerSet u = s + t;

cout<< "\nUnion of s and t: ";u.display();

IntegerSet i = s * t;

cout<< "\nIntersection of s and t: ";i.display();

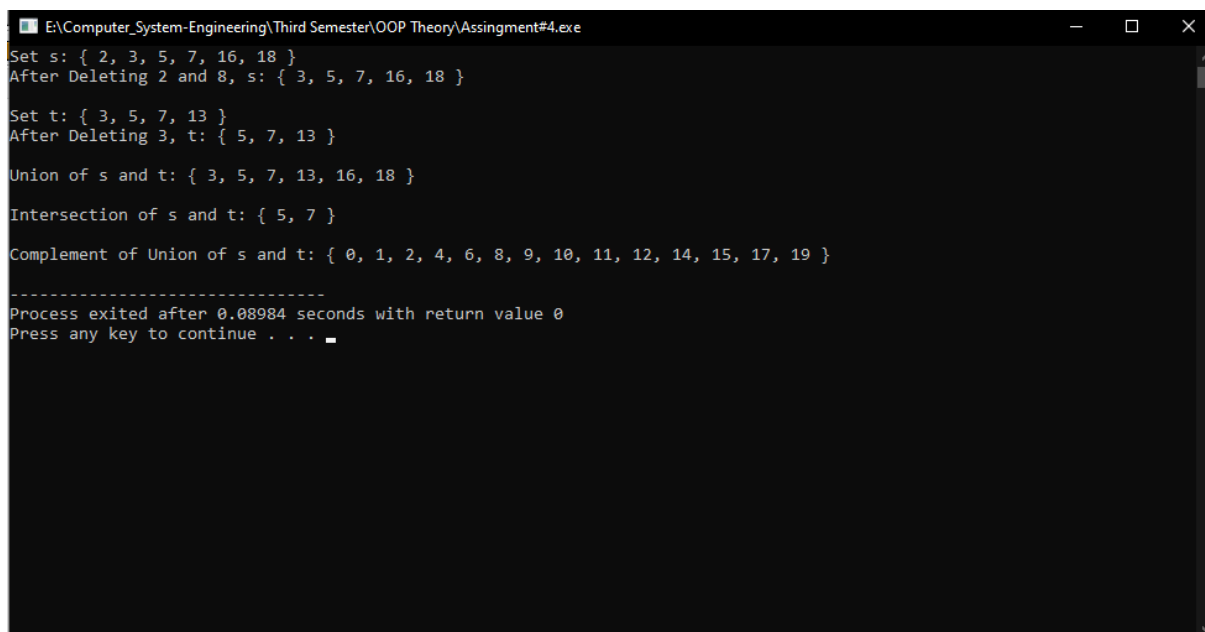
IntegerSet inv = ~u;

cout<< "\nComplement of Union of s and t: ";inv.display();

}

```

### Output# 03:



```

E:\Computer_System-Engineering\Third Semester\OOP Theory\Assingment#4.exe
Set s: { 2, 3, 5, 7, 16, 18 }
After Deleting 2 and 8, s: { 3, 5, 7, 16, 18 }

Set t: { 3, 5, 7, 13 }
After Deleting 3, t: { 5, 7, 13 }

Union of s and t: { 3, 5, 7, 13, 16, 18 }

Intersection of s and t: { 5, 7 }

Complement of Union of s and t: { 0, 1, 2, 4, 6, 8, 9, 10, 11, 12, 14, 15, 17, 19 }

-----
Process exited after 0.08984 seconds with return value 0
Press any key to continue . . .

```

## Assignment # 04:

### Source Code:

```
#include <iostream>
#include <cstring>
#include <string>

using namespace std;

class employee{
    private:
        char *name, *department;
        double salary, service;
    public:
        employee():name("Awais"),department("DCSE"),salary(10000),service(10){};
        employee(char n[], char dep[], double sal, double
ser):name(n),department(dep),salary(sal),service(ser){};
        employee(const employee &test){
            int nameLength = strlen(test.name);
            int depLength = strlen(test.department);
            name = new char[nameLength+1];
            department = new char[depLength+1];
            strcpy(name, test.name);
            strcpy(department, test.department);
            salary = test.salary;
            service = test.service;}
        void input(){
            int nameLength = strlen(name);
            name = new char [nameLength + 1];
            cout<<"\nEnter Your Data !!!"<<endl;
```

```

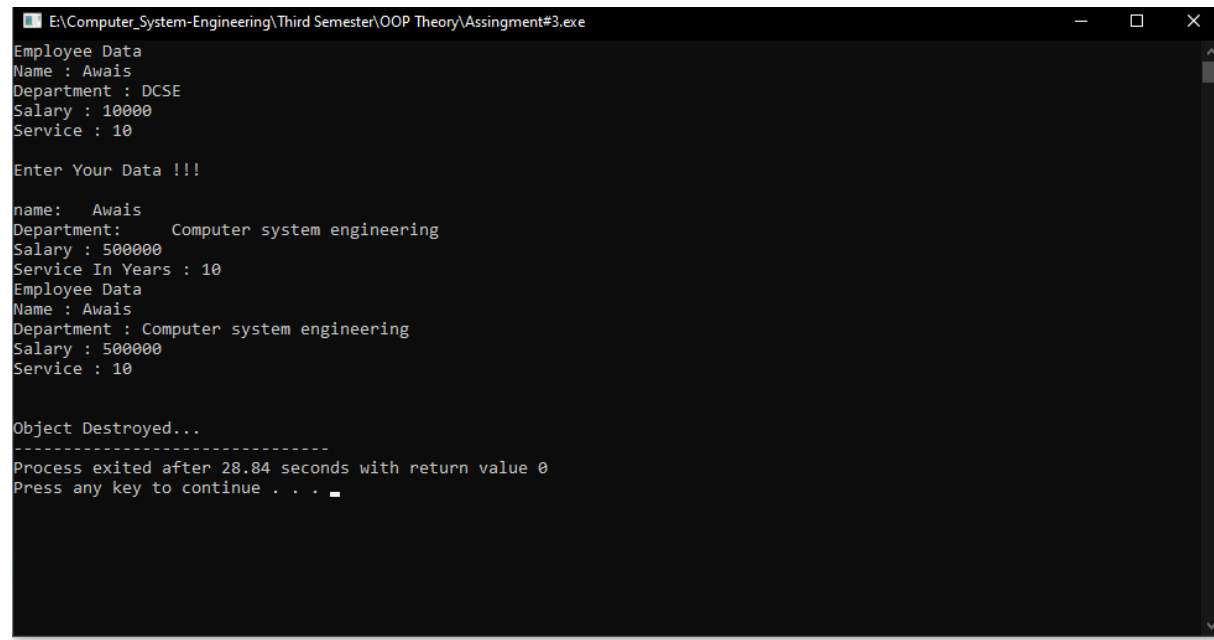
        cout<<"\nname:\t";
        gets(name);
        int deplength = strlen(department);
        department = new char [deplength + 1];
        cout<<"Department:\t";
        gets(department);

                cout<<"Salary : ";
                cin>>salary;
                cout<<"Service In Years : ";
                cin>>service;
        }
        void show(){
                cout<<"Employee Data"<<endl;
                cout<<"Name : "<<name<<endl;
                cout<<"Department : "<<department<<endl;
                cout<<"Salary : "<<salary<<endl;
                cout<<"Service : "<<service<<endl;
        }
        ~employee(){
                cout<<"\nObject Destroyed...";
                delete[] name;
                delete[] department;        }
};

main(){
        employee obj1;
        obj1.show();
        obj1.input();
        obj1.show();
        cout<<endl;
        employee obj2=obj1;
        obj2.show();}

```

## Output # 04:



```
E:\Computer_System-Engineering\Third Semester\OOP Theory\Assingment#3.exe
Employee Data
Name : Awais
Department : DCSE
Salary : 10000
Service : 10

Enter Your Data !!!

name:  Awais
Department:  Computer system engineering
Salary : 500000
Service In Years : 10
Employee Data
Name : Awais
Department : Computer system engineering
Salary : 500000
Service : 10

Object Destroyed...
-----
Process exited after 28.84 seconds with return value 0
Press any key to continue . . .
```