**International Islamic University Chittagong**

**Class test - II**

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**Section**: 2EM.

**Semester**: 2nd.

**Course code**: CSE – 1221&1222

**Course Title**: Computer Programming II & Computer Programming II lab

**Ans to the question number 1:**

#include<bits/stdc++.h>

using namespace std;

class operatr

{

    int x;

    public:

    operatr(int x=0) : x{x} {}

    operatr add(const operatr& r)

    {

        operatr s;

        s.x=x+r.x;

        return s;

    }

    void print()

    {

        cout << x << endl;

    }

};

int main()

{

    int a,b;

    cin>>a>>b;

    operatr s1(a), s2(b);

    operatr s3 = s1. add(s2);

    s3.print();

    return 0;

}

**Ans to question number 2:**

#include<bits/stdc++.h>

using namespace std;

class operatr

{

    int x;

    public:

    operatr(int x = 0) : x{x} {}

    operatr add(const operatr& r)

    {

        operatr s;

        s.x=x+r.x;

        return s;

    }

    void print()

    {

        cout<<x<<endl;

    }

};

int main()

{

    int a, b, c;

    cin >> a >> b >> c;

    operatr s1(a),s2(b),s3(c);

    operatr s4=s1.add(s2.add(s3));

    s4. print();

    return 0;

}

**Ans to the question number 3:**

#include <bits/stdc++.h>

using namespace std;

class operatr

{

    int x;

    public:

    operatr(int x = 0) : x{x} {}

    operatr operator+(const operatr &op);

    void show();

};

operatr operatr :: operator+(const operatr &r)

{

    operatr s;

    s.x = x + r.x;

    return s;

}

void operatr :: show()

{

    cout << x << endl;

}

int main()

{

    int a, b, c;

    cin >> a >> b >> c;

    operatr s1(a), s2(b), s3(c);

    operatr s4 = s1 + s2 + s3;

    s4.show();

    return 0;

}

**Ans to the question number 4:**

#include <bits/stdc++.h>

using namespace std;

class operatr

{

    int x;

    public:

    operatr(int x = 0) : x{x} {}

    void show();

    friend operatr operator+(const operatr &op1, const operatr &op2);

};

operatr operator+(const operatr &op1, const operatr &op2)

{

    operatr r;

    r.x = op1.x + op2.x;

    return r;

}

void operatr::show()

{

    cout << x << endl;

}

int main()

{

    int a, b, c;

    cin >> a >> b >> c;

    operatr s1(a), s2(b), s3(c);

    operatr s4 = s1 + s2 + s3;

    s4.show();

    return 0;

}

**Ans to the question number 5:**

#include <bits/stdc++.h>

using namespace std;

class Time {

private:

    int h,m,s;

public:

    Time(int h = 0, int m = 0, int s = 0) : h(h), m(m), s(s) {}

    bool operator==(const Time &afk) const

    {

        return h == afk.h && m == afk.m && s == afk.s;

    }

    bool operator<(const Time &afk) const

    {

        if (h < afk.h)

        {

            return true;

        }

        else if (h == afk.h)

        {

            if (m < afk.m)

            {

                return true;

            }

            else if (m == afk.m)

            {

                return s < afk.s;

            }

        }

        return false;

    }

    bool operator>(const Time &afk) const

    {

        if (h > afk.h)

        {

            return true;

        }

        else if (h == afk.h)

        {

            if (m > afk.m)

            {

                return true;

            }

            else if (m == afk.m)

            {

                return s > afk.s;

            }

        }

        return false;

    }

};

int main() {

    Time time1(12, 39, 40);

    Time time2(7, 40, 39);

    if (time1 == time2)

    {

        cout << "Time 1 is equal to Time 2" << endl;

    }

    else

    {

        cout << "Time 1 is not equal to Time 2" << endl;

    }

    if (time1 < time2)

    {

        cout << "Time 1 is less than Time 2" << endl;

    }

    else

    {

        cout << "Time 1 is not less than Time 2" << endl;

    }

    if (time1 > time2)

    {

        cout << "Time 1 is greater than Time 2" << endl;

    }

    else

    {

        cout << "Time 1 is not greater than Time 2" << endl;

    }

    return 0;

}

**Ans to question number 6:**

#include <bits/stdc++.h>

using namespace std;

class Uni

{

public:

    string name;

    int id;

    string dept;

};

class Stu : public Uni

{

public:

    int semester;

    char section;

};

class Teach : public Uni

{

public:

    int total\_credit;

};

class faculty : public Uni

{

public:

    string lab;

};

int main()

{

    Stu student1;

    student1.name = "Mohammad  Ibrahim Abdullah";

    student1.id = 231183 ;

    student1.dept = "Computer Science";

    student1.semester = 2;

    student1.section = 'E';

    Teach teacher1;

    teacher1.name = "Md. Shahariar Younus Ashik";

    teacher1.id = 1279;

    teacher1.dept = "CSE";

    teacher1.total\_credit = 40;

    faculty faculty1;

    faculty1.name = "Saiful Kabir";

    faculty1.id = 1123;

    faculty1.dept = "Chemistry";

    faculty1.lab = "Chemistry Lab 101";

    cout << "\n----------- Student Info: -----------\n";

    cout << "Name: " << student1.name << "\n";

    cout << "ID: " << student1.id << "\n";

    cout << "Department: " << student1.dept << "\n";

    cout << "Semester: " << student1.semester << "\n";

    cout << "Section: " << student1.section << "\n";

    cout << "\n----------- Teacher Info: ------------\n";

    cout << "Name: " << teacher1.name << "\n";

    cout << "ID: " << teacher1.id << "\n";

    cout << "Department: " << teacher1.dept << "\n";

    cout << "Total Credit: " << teacher1.total\_credit << "\n";

    cout << "\n------------- faculty Info: ------------\n";

    cout << "Name: " <<faculty1.name << "\n";

    cout << "ID: " << faculty1.id << "\n";

    cout << "Department: " << faculty1.dept << "\n";

    cout << "Lab: " << faculty1.lab << "\n";

    return 0;

}

**Ans to the question number 7:**

#include <bits/stdc++.h>

using namespace std;

class University

{

protected:

    string uname;

    string uaddress;

    int num\_of\_depts;

    int num\_of\_faculties;

public:

    void in1()

    {

        uname = "IIUC";

        uaddress = "Kumira";

        num\_of\_depts = 7;

        num\_of\_faculties = 3;

    }

};

class Faculties : public University

{

protected:

    string fname;

    int num\_of\_depts\_in\_faculty;

public:

    void in2()

    {

        fname = "FSE";

        num\_of\_depts\_in\_faculty = 4;

    }

};

class Departments : public Faculties

{

protected:

    string dname;

    int total\_students;

    int total\_semesters;

public:

    void in3()

    {

        dname = "CSE";

        total\_students = 1500;

        total\_semesters = 8;

    }

    void out()

    {

        in1();

        in2();

        cout << "University: " << uname << endl;

        cout << "Address: " << uaddress << endl;

        cout << "Number of Departments: " << num\_of\_depts << endl;

        cout << "Number of Faculties: " << num\_of\_faculties << endl;

        cout << "Faculty: " << fname << endl;

        cout << "Number of Departments in Faculty: " << num\_of\_depts\_in\_faculty << endl;

        cout << "Department: " << dname << endl;

        cout << "Total Students: " << total\_students << endl;

        cout << "Total Semesters: " << total\_semesters << endl;

    }

};

int main()

{

    Departments department;

    department.in1();

    department.in2();

    department.in3();

    department.out();

    return 0;

}