Object Oriented Programming Laboratory

Assignment – 7

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CSE-34

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Question 1:

```cpp
// Write a program to convert basic to class type.

#include <iostream>
using namespace std;

class basic{
    int a;
    public:
        basic(int x){
            a = x;
        }
        void show(){
            cout << "Basic to class converted" << endl;
            cout << "a = " << a << endl;
        }
};

int main(){
    int n;
    cout << "Enter a number: ";
    cin >> n;
    basic b = n;
    b.show();
    return 0;
}
```

Output:

```
PS C:\Users\KIIT01\Desktop\programming> cd "c:\Users\KIIT01\Desktop\progra
Enter a number: 10
Basic to class converted
a = 10
PS C:\Users\KIIT01\Desktop\programming\OOP-Class\3 november>
```

Question 2:

```cpp
// Write a program to convert class to basic type.

#include <iostream>
using namespace std;

class Test{
    int a;
    public:
        Test(int x){
            a = x;
        }
        void show(){
            cout << "Class to basic converted" << endl;
            cout << "a = " << a << endl;
        }
        operator int(){
            return a;
        }
};

int main(){
    Test t(10);
    t.show();
    int n = t;
    cout << "n = " << n << endl;
    return 0;
}
```

Output:

```
PS C:\Users\KIIT01\Desktop\programming> cd "c:\Users\KIIT01\Desktop
Class to basic converted
a = 10
n = 10
PS C:\Users\KIIT01\Desktop\programming\OOP-Class\3 november>
```

Question 3:

```cpp
// Write a program to convert Class to Class type.

#include <iostream>
using namespace std;

class Class1{
    public:
        int a;
        Class1(){
            cout << "Object of Class1 created" << endl;
        }
        Class1(int x){
            a = x;
        }
        void show(){
            cout << "a = " << a << endl;
        }
};

class Class2{
    int b;
    public:
        void operator =(Class1 c){
            b = c.a;
        }
        void show(){
            cout << "b = " << b << endl;
        }
};

int main(){
    Class1 c1(25);
    Class2 c2;
    c2 = c1;
    c1.show();
    c2.show();
    return 0;
}
```

Output:

```
PS C:\Users\KIIT01\Desktop\programming> cd "c:\Users\KIIT01\De
a = 25
b = 25
PS C:\Users\KIIT01\Desktop\programming\OOP-Class\3 november>
```

Question 4:

```cpp
/* WAP in switch case to perform
   - Unary operator overloading
   - Binary operator overloading  */

#include <iostream>
using namespace std;

class Test{
    int a, b, c;
    public:
        void read_data(){
            cout << "Enter three numbers: ";
            cin >> a >> b >> c;
        }
        void show(){
            cout << "a = " << a << endl;
            cout << "b = " << b << endl;
            cout << "c = " << c << endl;
        }
        void operator ++(){
            a++;
            b++;
            c++;
        }
        Test operator +(Test t){
            Test temp;
            temp.a = a + t.a;
            temp.b = b + t.b;
            temp.c = c + t.c;
            return temp;
        }
};

int main(){
    Test t1,t2,t3;
    int ch;
    do{
        cout << "1. Unary operator overloading" << endl;
        cout << "2. Binary operator overloading" << endl;
        cout << "3. Exit" << endl;
        cout << "Enter your choice: ";
        cin >> ch;
        switch(ch){
```

```
            case 1:
                t1.read_data();
                ++t1;
                t1.show();
                break;
            case 2:
                t1.read_data();
                t2.read_data();
                t3 = t1 + t2;
                t3.show();
                break;
            case 3:
                break;
            default:
                cout << "Invalid choice" << endl;
        }
    }while(ch != 3);
    return 0;
}
```

Output:

```
PS C:\Users\KIIT01\Desktop\programming> cd "c:\Users\KIIT01\Desktop\programming
\q4_switchcase }
1. Unary operator overloading
2. Binary operator overloading
3. Exit
Enter your choice: 1
Enter three numbers: 44 66 88
a = 45
b = 67
c = 89
1. Unary operator overloading
2. Binary operator overloading
3. Exit
Enter your choice: 2
Enter three numbers: 12 34 56
Enter three numbers: 67 78 89
a = 79
b = 112
c = 145
1. Unary operator overloading
2. Binary operator overloading
3. Exit
Enter your choice: 3
PS C:\Users\KIIT01\Desktop\programming\OOP-Class\3 november>
```

Question 5:

```cpp
// Write a program using exception handling to test division by zero.

#include <iostream>
using namespace std;

int main(){
    float a, b;
    float c;
    cout << "Enter two numbers: ";
    cin >> a >> b;
    try{
        if(b == 0){
            throw b;
        }
        else{
            c = a / b;
            cout << "a / b = " << c << endl;
        }
    }
    catch(float x){
        cout << "Error: Division by zero" << endl;
    }
    return 0;
}
```

Output:

```
PS C:\Users\KIIT01\Desktop\programming> cd "c:\Users\KIIT01\Desktop
5_exception }
Enter two numbers: 7 0
Error: Division by zero
PS C:\Users\KIIT01\Desktop\programming\OOP-Class\3 november>
```