

CS3201: OBJECT ORIENTED PROGRAMMING LABORATORY

Topic: Operator Overloading

Lab: 04

Date: 05/04/2024

OBSERVATION

1. What is the need for operator overloading? Are there any issues related with the same?
2. Trace the order of function calls in the given program, starting from the loader

```
class overload {
private:
    int count;
public:
    overload()
        : count(4)
    {
    }
    void operator++() { count = count + 1; }
    void Display() { cout << "Count: " << count; }
};
int main()
{
    overload i;
    ++i;
    i.Display();
    return 0;
}
```

3. Is $c1=c2$ a justified operation? Is $c1==c2$ justified? Justify and rectify the code.

```
class Complex {
private:
    int real, im;
public:
    Complex(int r, int i) {real = r; im = i;}
};
int main()
{
    Complex c1(10, 5), c2(2, 4);
    c1 = c2;
    if (c1 == c2)
        cout << "\"Same\"";

    return 0;
}
```

4. Given is a code snippet. What do the highlighted methods do?

```
class Complex {
private:
    int real,imag;
public:
    Complex(int r, int i) { real = r; imag = i; }
    Complex operator ++(int);
    Complex & operator ++();
};

Complex &Complex::operator ++() {
    real++; imag++;
    return *this;
}

Complex Complex::operator ++(int i) {
    Complex c1(real, imag);
    real++; imag++;
    return c1;
}

int main() {
    Complex c1(10, 15);
    return 0;
}
```

5. List one major difference between a local static member function and a global function based on member visibility.

EXECUTION QUESTIONS

1. Write a program that has a class called `time_setter`. It must have the attributes “hour”, “minute”, and “second”. Create objects for time in your main function, and ask the user to input time in the format `hh:mm:ss` (as a string). Extract the hours, minutes and seconds from this string and add it to the time object. This addition must be done within the main function itself using operator overloading. Have a function to display the time. **Hint:** you can use `stoi` to convert string to integer
2. Write a C++ program that defines a class called ‘DannyDevito’ to represent various attributes of Danny DeVito, such as height, age, and charisma. Overload the ‘>’ operator to compare two of the class’s objects based on their charisma levels. Create a program that allows the user to input the charisma levels of two objects and then compares them using the overloaded operator to determine who has more charisma.