Lab 4

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Question1:

Code:

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

class Sample
{
   int num;
   public:
   void getvalue(){
      cout << "Enter a number : ";
      cin >> num;
   }
   void operator++(){
      num = ++num;
   }
   void operator--(){
      num = --num;
   }
   void display(){
      cout << num;
   }
};

int main(){
   Sample s1;
   s1.getvalue();
   ++s1;
   cout << "Incremented number : ";
   s1.display();
   --s1;
   cout << "\nDecremented number : ";
   s1.display();
   return 0;
}
```

Input & Output:

```
PS C:\Users\DELL\OneDrive\Desktop\Labs> cd "c:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4\" ; if ($?) { g++ 1.cpp -o 1 } ; if ($?) { .\1 }
Enter a number : 5
Incremented number : 6
Decremented number : 5
PS C:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4>
```

Question2:

Code:

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

class Student
{
   int marks;
   public:
   Student(){
      marks = 0;
   }
   Student(int m){
      marks = m;
   }
   friend bool operator==(Student &s1, Student &s2);
   void display(){
      cout << marks;
   }
};

bool operator==(Student &s1, Student &s2){
   return(s1.marks == s2.marks);
}

int main(){
   Student s1(98);
   Student s2(98);
   cout << "Marks of Student 1 : ";
   s1.display();
   cout << "\nMarks of Student 1 : ";
   s2.display();
   if(s1 == s2){
      cout << "\nBoth students marks are equal";
   }
   else{
      cout << "\nBoth students marks are not equal";
   }
   return 0;
}
```

Input & Output:

```
PS C:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4> cd "c:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4\" ; if ($?) { g++ 2.cpp -o 2 } ; if ($?) { .\2 }
Marks of Student 1 : 98
Marks of Student 1 : 98
Both students marks are equal
PS C:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4>
```

Question3:

Code:

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

class Sample
{
   int num1, num2;
   public:
   void getvalue(){
      cout << "Enter a number : ";
      cin >> num1;
   }
   Sample operator+(Sample &c){
      Sample diff;
      diff.num2 = num1 - c.num1;
      return diff;
   }
   void display(){
      cout << "The differnece of numbers : " << num2;
   }
};

int main(){
   Sample s1, s2, s3;
   s1.getvalue();
   s2.getvalue();
   s3 = s1 + s2;
   s3.display();
   return 0;
}
```

Input & Output:

```
PS C:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4> cd "c:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4\" ; if ($?) { g++ 3.cpp -o 3 } ; if ($?) { .\3 }
Enter a number : 10
Enter a number : 2
The differnece of numbers : 8
PS C:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4>
```

Question4:

Code:

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

class Complex
{
   int real, imag;
   public:
   Complex(){
      real = 0, imag = 0;
   }
   void getvalue(){
      cout << "Real part : ";
      cin >> real;
      cout << "Imaginary part : ";
      cin >> imag;
   }
   friend Complex operator+(Complex c1, Complex c2);
   void display(){
      cout << real << " + " << imag << "i" << endl;
   }
};

Complex operator+(Complex c1, Complex c2)
{
   Complex c;
   c.real = c1.real + c2.real;
   c.imag = c1.imag + c2.imag;
   return c;
}

int main(){
   Complex c1, c2, c3;
   cout << "Enter complex number 1\n";
   c1.getvalue();
   cout << "Enter complex number 2\n";
   c2.getvalue();
   c3 = c1 + c2;
   cout << "Complex number 1 : ";
   c1.display();
   cout << "Complex number 2 : ";
   c2.display();
   cout << "The sum of complex numbers is : ";
   c3.display();
   return 0;
}
```

Input & Output:

```
PS C:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4> cd "c:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4\" ; if ($?) { g++ 4.cpp -o 4 } ; if ($?) { .\4 }
Enter complex number 1
Real part : 7
Imaginary part : 5
Enter complex number 2
Real part : 8
Imaginary part : 3
Complex number 1 : 7 + 5i
Complex number 2 : 8 + 3i
The sum of complex numbers is : 15 + 8i
PS C:\Users\DELL\OneDrive\Desktop\Labs\OOPM LAB\LAB 4>
```