

Experiment 4 – B

Code : -

```
#include <iostream>

using namespace std;

class Complex{
    private:
        float real,img;

    public:
        Complex(){
            real = 0;
            img = 0;
        }
        Complex(float r, float i)
        {
            real = r;
            img = i;
        }
        friend Complex add(Complex C1, Complex C2);

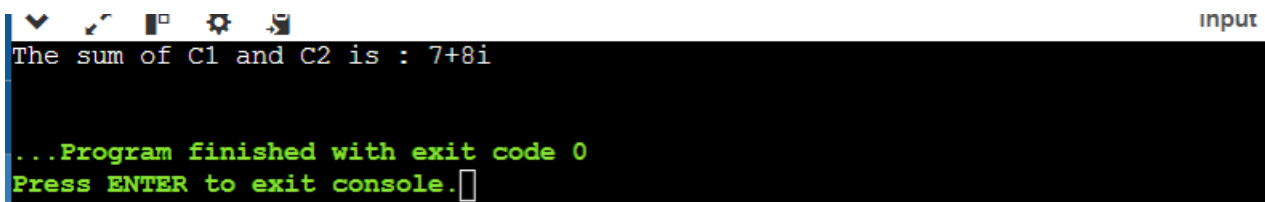
        void display()
        {
            cout<<real<<"+"<<img<<"i"<<endl;
        }
};

Complex add(Complex C1,Complex C2)
{
    Complex temp;
    temp.real=C1.real+C2.real;
    temp.img=C1.img+C2.img;
    return temp;
}

int main()
```

```
{  
    Complex C1(3,2);  
    Complex C2(4,6);  
    Complex C3;  
    C3=add(C1,C2);  
    cout<<"The sum of C1 and C2 is : ";  
    C3.display();  
    return 0;  
}
```

Output:-

A screenshot of a terminal window with a black background and white text. The window has a title bar with standard icons on the left and the word "input" on the right. The output text is as follows:

The sum of C1 and C2 is : 7+8i

...Program finished with exit code 0

Press ENTER to exit console.

The text is displayed in a monospaced font. The first line is white, and the subsequent lines are green.

Experiment 4 – A

Code:-

```
#include <iostream>

using namespace std;

class student{
    private :
    int roll_no;
    int marks;
    string name;

    public:
    friend class college;
};

class college{
    public:
    void display(student &s){
        cout<<"Enter student roll no. :";
        cin>>s.roll_no;
        cout<<"Enter student marks :";
        cin>>s.marks;
        cout<<"Enter student name :";
        cin>>s.name;
        cout<<"The student information \n Roll no :"<<s.roll_no<<endl;
        cout<<"marks obtain :"<<s.marks<<endl<<"Name :"<<s.name;
    }
};

int main(){
    student s1;
    college c1;
    c1.display(s1);
    return 0;
}
```

Output:-

```
Enter student roll no. :44
Enter student marks :80
Enter student name :Diya
The student information
  Roll no :44
marks obtain :80
Name :Diya

...Program finished with exit code 0
Press ENTER to exit console.[]
```

Experiment 5 - A

Code :-

```
#include <iostream>

using namespace std;

class employee
{
    int empid;
    string name ;
public:
    static int count;
    void getdata();
    void putdata();
};

void employee::getdata()
{
    cout<<"employee id ";
    cin>>empid;
    cout<<"employee name ";
    cin>>name;
    count ++;
}

void employee::putdata(){
    cout<<" employee id  " <<empid<<endl;
    cout<<"employee name " <<name<<endl;
}

int employee:: count=0;

int main() {
    int n,i;
    employee e[50];
    cout<<"Number of employee ";
    cin>>n;
    for ( i=0;i<n;i++)
    {
        e[i].getdata();
```

```
}  
  
for (int i=0;i<n;i++)  
{  
    e[i].putdata();  
}  
  
cout<<"No of object created "<<employee::count<<endl;  
  
return 0;  
}
```

Output:-

```
Number of employee 3  
employee id 101  
employee name  Suraj  
employee id 102  
employee name  Mahi  
employee id 103  
employee name  Nihit  
employee id   101  
employee name Suraj  
employee id   102  
employee name Mahi  
employee id   103  
employee name Nihit  
No of object created 3  
  
...Program finished with exit code 0  
Press ENTER to exit console.[]
```

Experiment 5 – B

Code:-

```
#include <iostream>

using namespace std;

class employee
{
    int empid;
    string name ;
public:
    static int count;

    void getdata()
    {
        cout<<"employee id ";
        cin>>empid;
        cout<<"employee name ";
        cin>>name;
        count++;
    }

    static int getcount()
    {
        return count;
    }

    void putdata(){
        cout<<" employee id  " <<empid<<endl;
        cout<<"employee name " <<name<<endl;
    }
};

int employee:: count=0;

int main() {
    int n,i;
    employee e[50];
```

```

cout<<"Number of employee ";

cin>>n;

for ( i=0;i<n;i++)
{
    e[i].getdata();
}

for (int i=0;i<n;i++)
{
    e[i].putdata();
}

cout<<"No of object created "<<employee::getcount()<<endl;

return 0;
}

```

Output :-

```

input
Number of employee 3
employee id 100
employee name Mayuri
employee id 101
employee name Tanvi
employee id 103
employee name Diya
employee id 100
employee name Mayuri
employee id 101
employee name Tanvi
employee id 103
employee name Diya
No of object created 3

...Program finished with exit code 0
Press ENTER to exit console.

```


Experiment 6 - A

Code:-

```
#include <iostream>

using namespace std;

class Complex {
public:
    int real, imag;

    Complex() {
        real = 0;
        imag = 0;
    }

    Complex(int r, int i) {
        real = r;
        imag = i;
    }

    void print() {
        cout << real << " + " << imag << "i" << endl;
    }

    Complex operator+(Complex c) {
        Complex temp;
        temp.real = real + c.real;
        temp.imag = imag + c.imag;
        return temp;
    }

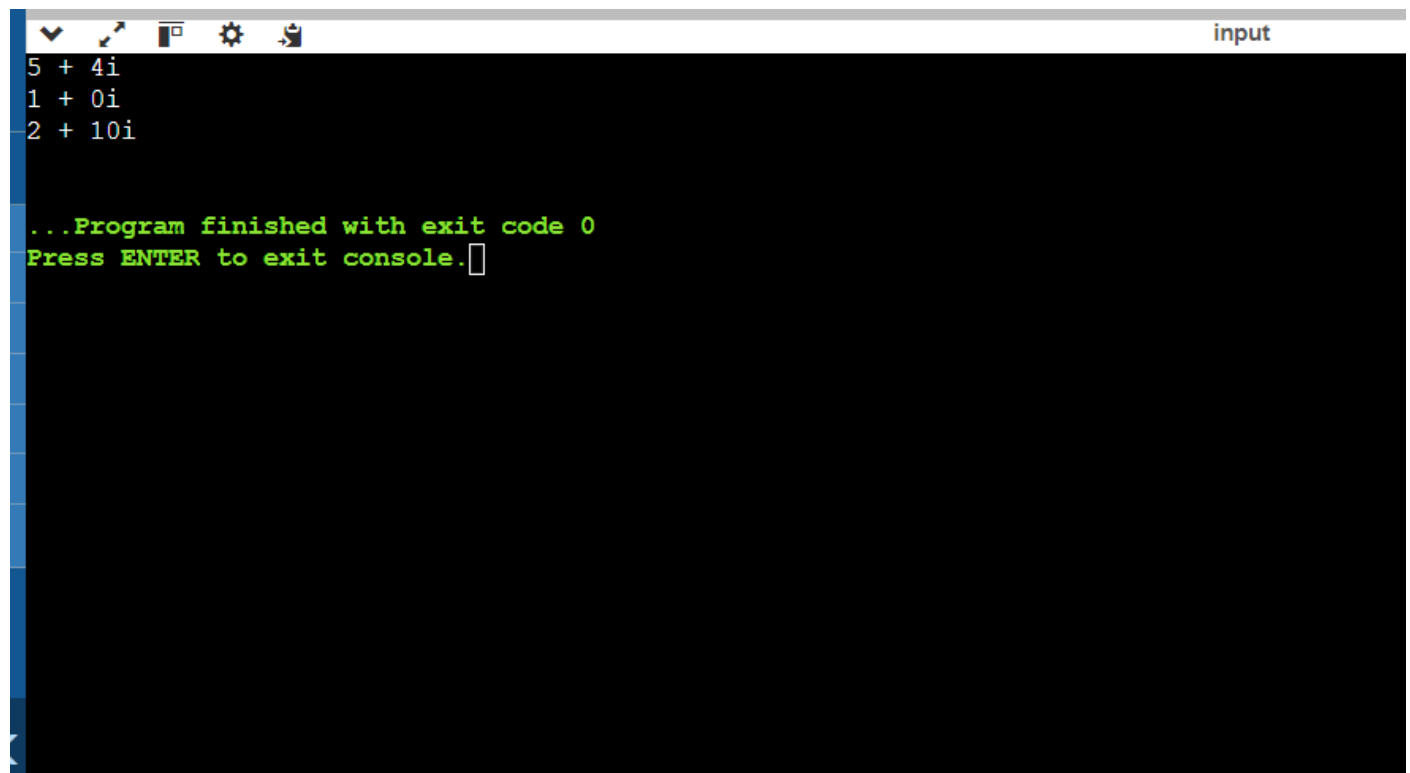
    Complex operator-(Complex c) {
        Complex temp;
        temp.real = real - c.real;
        temp.imag = imag - c.imag;
        return temp;
    }

    Complex operator*(Complex c) {
        Complex temp;
        temp.real = (real * c.real - imag * c.imag);
        temp.imag = (real * c.imag + imag * c.real);
    }
}
```

```
        return temp;
    }
};

int main() {
    Complex c1(3, 2), c2(2, 2);
    Complex c3 = c1 + c2;
    Complex c4 = c1 - c2;
    Complex c5 = c1 * c2;
    c3.print();
    c4.print();
    c5.print();
    return 0;
}
```

Output :-



```
5 + 4i
1 + 0i
2 + 10i

...Program finished with exit code 0
Press ENTER to exit console.
```

Experiment 6 – B

Code:-

```
#include <iostream>

using namespace std;

class Weight {
public:
    int w;

    Weight() {
        w = 0;
    }

    Weight(int wt) {
        w = wt;
    }

    void print() {
        cout << "Weight is: " << w << endl;
    }

    void operator++() {
        ++w;
    }

    void operator++(int) {
        w++;
    }

    void operator--() {
        --w;
    }

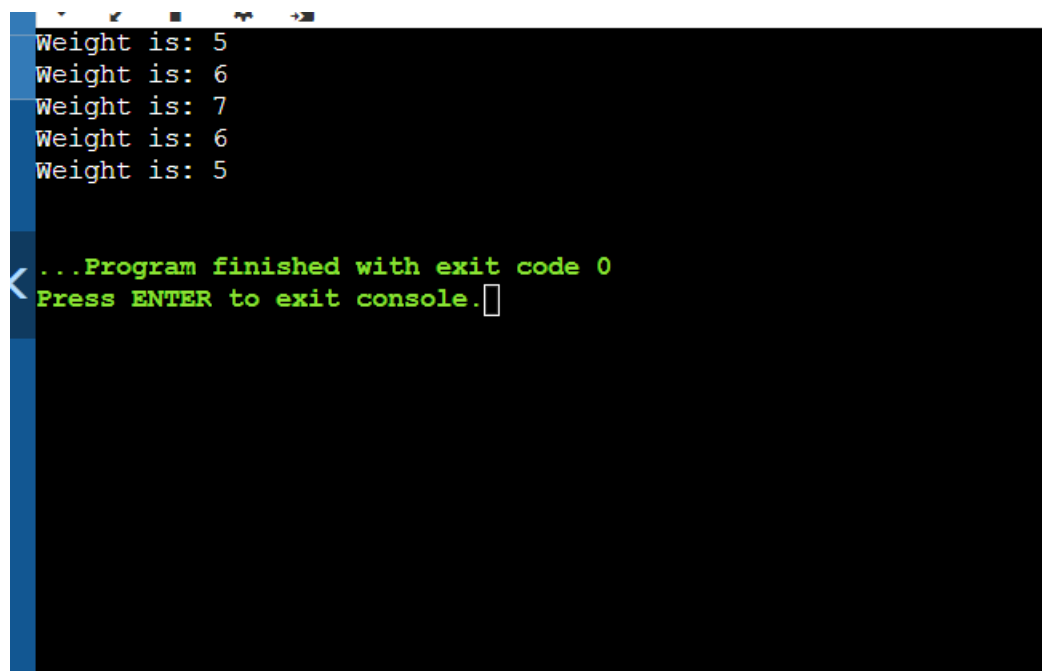
    void operator--(int) {
        w--;
    }
};

int main() {
    Weight wt(5);

    wt.print();
```

```
++wt;  
wt.print();  
wt++;  
wt.print();  
--wt;  
wt.print();  
wt--;  
wt.print();  
return 0;  
}
```

Output :-



```
Weight is: 5  
Weight is: 6  
Weight is: 7  
Weight is: 6  
Weight is: 5  
  
...Program finished with exit code 0  
Press ENTER to exit console.
```

Experiment 6 – C

Code:-

```
#include <iostream>

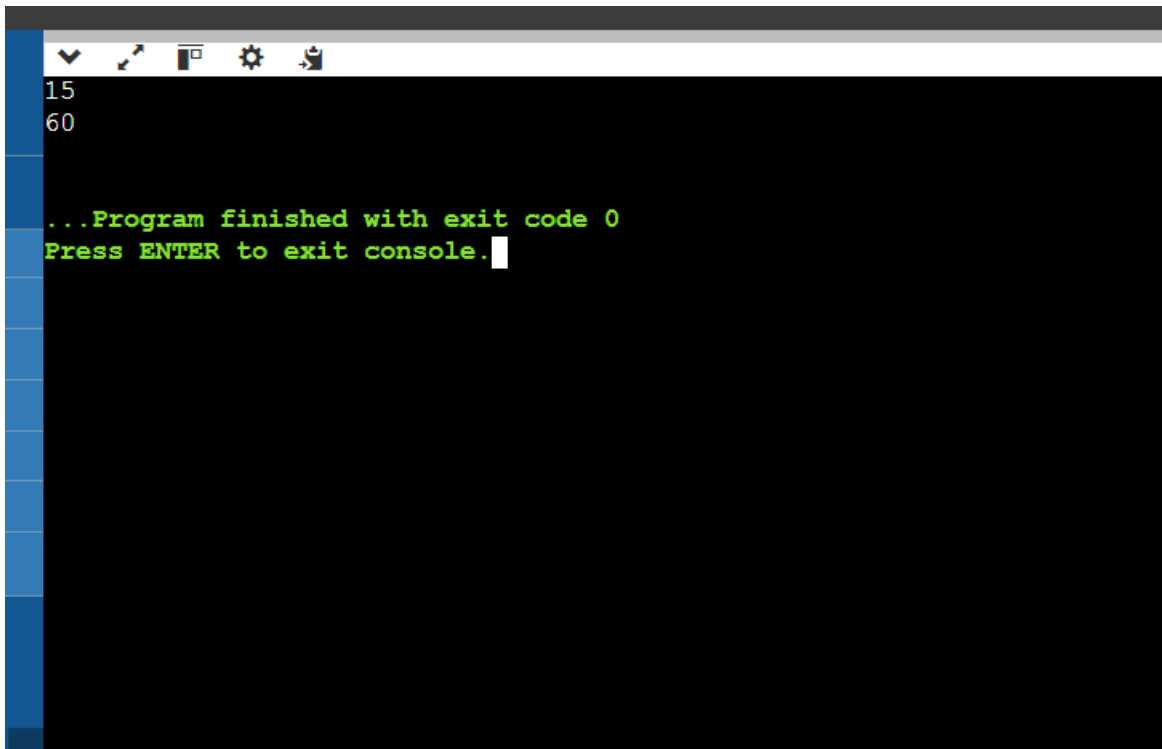
using namespace std;

class Number {
    int num;
public:
    Number() {
        num = 0;
    }
    Number(int n) {
        num = n;
    }
    void print() {
        cout << num << endl;
    }
    friend Number operator + (Number n1, Number n2) {
        Number temp;
        temp.num = n1.num + n2.num;
        return temp;
    }
    friend Number operator * (int m, Number n) {
        Number temp;
        temp.num = m * n.num;
        return temp;
    }
};

int main() {
    Number n1(10), n2(5), n3, n4;
    n3 = n1 + n2;
    n3.print();
    n4 = 6 * n1;
    n4.print();
    return 0;
}
```

```
}
```

Output :-

A screenshot of a terminal window with a dark background. The window has a title bar at the top with several icons. The output text is displayed in a light green monospaced font. It shows the numbers '15' and '60' on separate lines. Below these, a message indicates the program has finished with exit code 0 and prompts the user to press ENTER to exit the console. A white cursor is visible at the end of the prompt line.

```
15
60

...Program finished with exit code 0
Press ENTER to exit console.
```