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Assignment no.1

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

class complex{
        double real;
        double imaginary;
        public:
                complex();
                friend istream & operator>>(istream&,complex&);
                friend ostream & operator<<(ostream&,const complex&);
                complex operator+(complex);
                complex operator*(complex);
};
complex::complex(){
        real=0;
        imaginary=0;
}
istream & operator>>(istream&,complex&i){
        cin>>i.real>>i.imaginary;
        return cin;
}
```

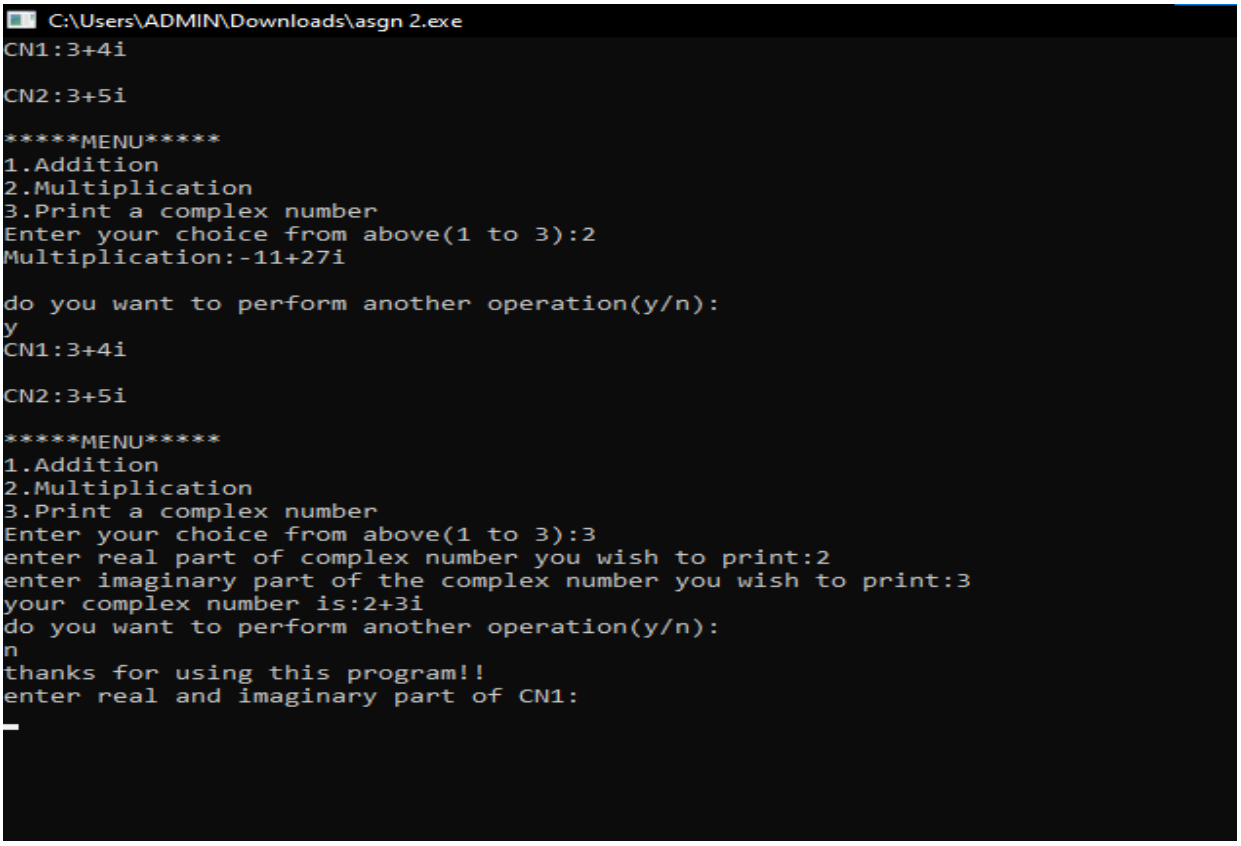
```
ostream & operator<<(ostream&,const complex&d){
        cout<<d.real<<"+"<<d.imaginary<<"i"<<endl;
        return cout;
}
complex complex::operator+(complex c1){
        complex temp;
        temp.real=real+c1.real;
        temp.imaginary=imaginary+c1.imaginary;
        return temp;
}
complex complex::operator*(complex c2){
        complex tmp;
        tmp.real=real*c2.real-imaginary*c2.imaginary;
        tmp.imaginary=real*c2.imaginary+imaginary*c2.real;
        return tmp;
}
int main(){
        complex c1,c2,c3,c4;
        int flag=1;
        char b;
        char  c;
        char e;
        int x,y;
        while(flag==1){
                cout<<"enter real and imaginary part of CN1:\n";
```

```
cin>>c1;
cout<<"enter real and imaginary part of CN2:\n";
cin>>c2;
int f=1;
while(f==1){
        cout<<"CN1:"<<c1<<endl;
        cout<<"CN2:"<<c2<<endl;
        cout<<"*****MENU*****"<<endl;
        cout<<"1.Addition"<<endl;
        cout<<"2.Multiplication"<<endl;
        cout<<"3.Print a complex number\n";
        int a;
        cout<<"Enter your choice from above(1 to 3):";
        cin>>a;
        if(a==1){
                c3=c1+c2;
                cout<<"Addition:"<<c3<<endl;
                cout<<"do you want to perform another operation(y/n):\n";
                cin>>b;
                if(b=='y'||b=='Y'){
                        f=1;
                }
                else{
                        cout<<"thanks for using this program!!\n";
                        flag=0;
```

```
                f=0;
        }
}
else if(a==2){
        c4=c1*c2;
        cout<<"Multiplication:"<<c4<<endl;
        cout<<"do you want to perform another operation(y/n):\n";
        cin>>c;
        if(c=='y'||c=='Y'){
                f=1;
        }
        else{
                cout<<"thanks for using this program!!\n";
                flag=0;
                f=0;
        }
}
else {
        cout<<"enter real part of complex number you wish to print:";
        cin>>x;
        cout<<"enter imaginary part of the complex number you wish to print:";
        cin>>y;
        cout<<"your complex number is:"<<x<<"+"<<y<<"i"<<endl;
        cout<<"do you want to perform another operation(y/n):\n";
        cin>>e;
```

```
                    if(e=='y'||e=='Y'){
                        f=1;
                    }
                    else{
                        cout<<"thanks for using this program!!\n";
                        flag==0;
                        f=0;
                    }
                }
            }
        }
        return 0;
}
```

Output:


C:\Users\ADMIN\Downloads\asgn 2.exe
CN1:3+4i
CN2:3+5i
*****MENU*****
1.Addition
2.Multiplication
3.Print a complex number
Enter your choice from above(1 to 3):2
Multiplication:-11+27i
do you want to perform another operation(y/n):
y
CN1:3+4i
CN2:3+5i
*****MENU*****
1.Addition
2.Multiplication
3.Print a complex number
Enter your choice from above(1 to 3):3
enter real part of complex number you wish to print:2
enter imaginary part of the complex number you wish to print:3
your complex number is:2+3i
do you want to perform another operation(y/n):
n
thanks for using this program!!
enter real and imaginary part of CN1: