Name: Kaustubh S Kabra

Class: SE Comp-1

Roll no: 20

**Code:-**

# include<iostream>

# include<conio.h>

using namespace std;

class complex // class created

{

public:

float a,b;

public:

complex() // constructor

{

a=0.0;

b=0.0;

}

complex operator+(complex obj) // '+' operator overloaded

{

complex temp;

temp.a=a+obj.a;

temp.b=b+obj.b;

return temp;

};

complex operator-(complex obj) // '-' operator overloaded

{

complex temp;

temp.a=a-obj.a;

temp.b=b-obj.b;

return temp;

};

complex operator\*(complex obj) // '\*' operator overloaded

{

complex temp;

temp.a=(a\*obj.a)-(b\*obj.b);

temp.b=(a\*obj.a)+(b\*obj.b);

return temp;

};

complex operator/(complex obj) // '/' operator overloaded

{

complex temp;

temp.a=(a\*obj.a)-(b\*(-obj.b));

temp.b=(a\*(-obj.a))+(b\*obj.b);

temp.a=temp.a/((obj.a\*obj.a)+(obj.b\*obj.b));

temp.b=temp.b/((obj.a\*obj.a)+(obj.b\*obj.b));

return temp;

};

// Friend classes declared

friend ostream &operator<<(ostream &out,complex &c);

friend istream &operator>>(istream &in,complex &c);

};

// '<<' operator overloaded

ostream &operator<<(ostream &out,complex &c)

{

out<<c.a<<" + i("<<c.b<<")";

return out;

}

// '>>' operator overloaded

istream &operator>>(istream &in,complex &c)

{

cin>>c.a>>c.b;

return in;

}

// Driver function

int main()

{

char out,cont;

out='N',cont='N';

int op;

complex c1,c2,c3; // Objects initialized

do

{

// Accept real and imaginary part of two complex numbers

cout<<"Enter real and imaginary parts of first complex number: \n";

cin>>c1;

cout<<"Enter real and imaginary parts of second complex number: \n";

cin>>c2;

do

{

// Menu

cout<<"\nSelect operation:\n";

cout<<"1.Addition\n2.Subtraction\n3.Multiplication\n4.Division\n";

cout<<"Enter choice: ";

cin>>op;

switch(op)

{

case 1:

{

// Add two complex numbers

c3=c1+c2;

cout<<c3<<endl; //Display result

break;

}

case 2:

{

// Subtract two complex numbers

c3=c1-c2;

cout<<c3<<endl; //Display result

break;

}

case 3:

{

// Multiply two complex numbers

c3=c1\*c2;

cout<<c3<<endl; //Display result

break;

}

case 4:

{

// Divide two complex numbers

c3=c1/c2;

cout<<c3<<endl; //Display result

break;

}

cout<<"Select another operation?(Y/N)\n";

cin>>cont;

}

}while(cont=='Y' || cont=='y');

cout<<"Input different complex numbers?(Y/N)\n";

cin>>out;

}while(true);

}

**Output:-**

Enter real and imaginary parts of first complex number:

29

37

Enter real and imaginary parts of first complex number:

37

29

Select operation:

1.Addition

2.Subtraction

3.Multiplication

4.Division

Enter choice: 1

66 + i(66)

Input different complex numbers?(Y/N)

Y

Enter real and imaginary parts of first complex number:

78

87

Enter real and imaginary parts of first complex number:

54

45

Select operation:

1.Addition

2.Subtraction

3.Multiplication

4.Division

Enter choice: 2

24 + i(42)