**ASSIGNMENT 2**

//Purpose: Program of arithmatic operations on two complex numbers accepting input numbers seperatly.

//Date: 5/9/2017

//GR No.: 1710536

//Roll No.: C 34

#include<simplecpp>

#include<stdlib.h>

main\_program //Main program starts here

{

float a, b, x, y, m, n; //Variable declaration; those can be fraction as well as real.

int s;

cout<<"Please enter real part of first number:\t"; //output taking real part of first number.

cin>>a; //declaring value of variable

cout<<"Please enter imaginary part of first number:\t"; //output saying to enter imaginary part of first number.

cin>>b; // placing value to variable

cout<<"Please enter real part of second number:\t"; //output saying to enter real part of second number.

cin>>x; // putting input value to variable

cout<<"Please enter imaginary part of second number:\t"; //output saying to enter imaginary part of second number.

cin>>y; // putting input value to variable

cout<<"Numbers entered by you are:\n"; // showing numbers provided by the user

cout<<a<<"+i"<<b<<"\n";

cout<<x<<"+i"<<y<<"\n";

cout<<"\n";

while(1) //to run program infinitely we put any true value here; while loop starts here

{

cout<<"Please select an operation:\n"; // asking to choose any of the following operations

cout<<"1: Addition\n";

cout<<"2: Subtraction\n";

cout<<"3: Multiplication\n";

cout<<"4: Division\n";

cout<<"5: Exit\n";

cin>>s;

switch(s) // accordingly switches to cases which are entered by user

{

case 1: m=a+x;

n=b+y; //calculation for addition

cout<<"Addition is: "; // does addition

cout<<m<<"+i"<<n<<"\n";

break;

case 2: m=a-x; // calculation of subtraction.

n=b-y;

cout<<"Subtraction is: "; // it does subtraction and shows output

if(n>=0)

{

cout<<m<<"+i"<<n<<"\n\n";

}

else

{

cout<<m<<"+"<<n<<"i\n\n";

}

break;

case 3: m=(a\*x)-(b\*y);

n=(b\*x)+(a\*y); // calculation for multiplication.

cout<<"Multiplication is: "; // multiplication done and showing value of multiplication

if(n>=0)

{

cout<<m<<"+i"<<n<<"\n\n";

}

else

{

cout<<m<<"+"<<n<<"i\n\n";

}

break;

case 4: m=((a\*x)+(b\*y))/((x\*x)+(y\*y)); // operating the calculation of division

n=((b\*x)-(a\*y))/((x\*x)+(y\*y));

cout<<"Division is: "; // showing the division value as output

if(n>=0)

{

cout<<m<<"+i"<<n<<"\n\n";

}

else

{

cout<<m<<"+"<<n<<"i\n\n";

}

break; // break should be given to end the running case there.

case 5: exit(1); // command to exit nthe program

break;

default: cout<<"Invalid input.\n\n"; // if input entered is invalid i.e. other than the stated cases (from 1 to 5) then gives out invalid output

} // switch ends here.

} // while loop ends here.

} // main program ends here.

