**North South University - Spring 2023**

Course: CSE225L Assessment: Lab 3B

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// Task-1 Codes

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| #include <iostream>  #include <cmath>  using namespace std;  // declaration file Complex.h  class Complex{  private:  double real;  double imaginary;  public:  Complex();  Complex(double, double);  Complex operator+(Complex);  Complex operator-(Complex);  Complex operator\*(Complex);  Complex operator/(Complex);  bool isEqual(Complex);  double getModulus();  void print();  }; |
| // definition file Complex.cpp  Complex::Complex(){  real = 0;  imaginary = 0;  }  Complex::Complex(double r, double i){  real = r;  imaginary = i;  }  Complex Complex::operator+(Complex a){  Complex t;  t.real = real + a.real;  t.imaginary = imaginary + a.imaginary;  return t;  }  Complex Complex::operator-(Complex a){  Complex t;  t.real = real - a.real;  t.imaginary = imaginary - a.imaginary;  return t;  }  Complex Complex::operator\*(Complex a){  Complex t;  t.real = (real \* a.real) - (imaginary \* a.imaginary);  t.imaginary = (real \* a.imaginary) + (imaginary \* a.real);  return t;  }  Complex Complex::operator/(Complex a){  Complex t;  t.real = (real \* a.real + imaginary \* a.imaginary) / (a.real \* a.real + a.imaginary \* a.imaginary);  t.imaginary = (imaginary \* a.real - real \* a.imaginary) / (a.real \* a.real + a.imaginary \* a.imaginary);  return t;  }  bool Complex::isEqual(Complex a){  return (real == a.real && imaginary == a.imaginary);  }  double Complex::getModulus(){  return sqrt(real \* real + imaginary \* imaginary);  }  void Complex::print(){  cout << "Real: " << real << endl;  cout << "Imaginary: " << imaginary << endl;  } |
| //Driver file main  int main()  {  Complex c1(2, 3);  Complex c2(4, -5);  cout << "Modulus of c1: " << c1.getModulus() << endl;  c1.print();  cout << endl ;  cout << "Modulus of c2: " << c2.getModulus() << endl;  c2.print();  cout << endl;  Complex temp;  cout << "Addition of (c1 + c2): " << endl;  temp = c1 + c2;  temp.print();  cout << "Modulus: " << temp.getModulus() << endl << endl;  cout << "Substraction of (c1 - c2): " << endl;  temp = c1 - c2;  temp.print();  cout << "Modulus: " << temp.getModulus() << endl << endl;  cout << "Multiplication of (c1 \* c2): " << endl;  temp = c1 \* c2;  temp.print();  cout << "Modulus: " << temp.getModulus() << endl << endl;  cout << "Division of (c1 / c2): " << endl;  temp = c1 / c2;  temp.print();  cout << "Modulus: " << temp.getModulus() << endl << endl;  cout << "c1 isEqual to c2? " << endl;  if(c1.isEqual(c2) == 1){  cout << "True" << endl << endl;  }  else{  cout << "False" << endl << endl;  }  return 0;  } |
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// Task-2 Codes

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// Task-3 Codes

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// Task-4 Codes

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// Task-5 Codes

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