

LAB Assignments:

Lab Assignment #2 Pass by Reference

Question #1

Write a C++ program using function (pass by reference) that calculates the values of x and y from the two linear equations.

$$ax + by = m$$

$$cx + dy = n$$

The solutions are given as

$$x = (md - bn)/(ad - cb)$$

$$y = (na - mc)/(ad - cb)$$

The function should take eight arguments and return nothing.

Lab Assignment #3 Classes and Object

Question #1

Do you remember a graph paper; plotting x-axis, y-axis and origin (0,0). A Point consists of two values; one is x-axis value and other one is y-axis value. Considering only a first quadrant and two such points, write a program that finds the distance between each other. Use classes and objects.

Lab Assignment #4 Classes and Object

Question #1

Define a class called “Rectangle” with following attributes: length and breadth of data type Integer.

Also include the following member functions:

void setSize(int length, int breadth); // this function should set the value of length and breadth of the Rectangle.

int getArea(); // this function should return the area of the rectangle.

int getPerimeter(); // this function should return the perimeter of the rectangle.

// formula to calculate: area = length * breadth.

// formula to calculate: perimeter = 2 * (length + breadth).

Write a driven program as well.

Lab #5 Operator Overloading

Question #1

| |
|--------------------|
| class Complex |
| private: int x; |

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|---|
| int y; |
| public: Complex(); Complex(int x, int y); |

1. Define a class called Complex.

2. Define member functions that overload the following operators:

- ☐ Minus unary operator. Returns void
- ☐ Scalar multiplication. (you may use friend function) and returns Complex
- ☐ Plus binary operator (+). => Returns Complex
- ☐ Minus binary operator. => Returns Complex
- ☐ += Shorthand operator. => Returns void
- ☐ == Equals to operator. => Returns TRUE or FALSE
- ☐ Greater than operator. => Returns TRUE or FALSE
- ☐ != Not equals to operator. => Returns TRUE or FALSE
- ☐ Pre Increment operator. => Returns Complex
- ☐ Post Increment operator. => Returns Complex
- ☐ << Stream Insertion operator. (use friend function. Why?????) => Returns ostream&

Write a main() function to implement the above overloaded operators.

Theory Assignments:

Assignment Set #2

1. What do you mean by Function Overloading? Illustrate with an example.
2. What do you mean by Inline Function? In what ways it is advantageous?

Assignment Set #3

1. Differentiate between constructors and destructors. Describe the different types of constructors with suitable examples.
2. What do you mean by operator overloading? Why is it important?
3. Illustrate the use of friend functions in overloading binary operators.

Deadline:: 13th May, 2019 Before Internal.

Note:: *Assignments and labworks beyond deadline will not be acceptable.*