

Objectives of this Lab

At the end of this lab, students should be able to understand:

Operator overloading

- operator overloading with unary operator
- operator overloading with binary operators

Problem Statement 1

Define a class named Box with 3 member variables of type float length, breadth and height, and the following member functions:

- A **constructor** that allows the members to be set. The default values for these members is zero.
- Setter Getter Functions
- **float volume()**

This will calculate & return the volume of the box using formula:

Length*breadth*height

Now overload following operators:

1. +
 - For Addition of two objects
 - For Adding integer value to an object
2. -
 - For Subtraction of two objects
 - For Subtracting integer value from an object
3. ×
 - For Multiplication of two objects
 - For Multiplication of an integer value with object
4. >
 - Compare volume of two objects
 - Compare volume of an object with an integer

- o Compare volume of two objects
 - o Compare volume of an object with an integer
6. Similarly overload the = operator to assign one value of a complex object to the other complex object.

Problem Statement 2

Create a Class Distance having two data members, feet & inches. Class should have following member functions:

- Distance();
- Distance(int x,int y);

Overload stream insertion (>>) & stream extraction operator (<<) using the functions mentioned below.

- friend ostream &operator<<(ostream &output, Distance &D);
- friend istream &operator>>(istream &input, Distance &D);

Get & Display Object's data using these functions.