National University of Computer and Emerging Sciences



Lab Manual 07

Object Oriented Programming

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## Objectives

After performing this lab, students shall be able to:

* Friend function
* Static member variables and functions
* Inline functions

**Class for Task 1 and 2:**

Implement a class called **Box**. The **Box** class will have three data members:

* double length; // Length of a box
* double breadth; // Breadth of a box
* double height; // Height of a box

You have to implement the following:

1. Write a default constructor.
2. Write an overloaded constructor.
3. Write all setters for length, breadth, height.
4. Write all getters for length, breadth, height.
5. Write Print Function

**TASK 1: (Static member and Function)**

1. There should be a static data member

* static int objectCount; // Increases every time object is created

1. Write member functions as follow:
   * + static int getCount();
     + double Volume();
     + double Area();
2. Write a suitable main() function to test the functionality of the static members and functions.

**TASK 2: (Friend Function)**

* Friend Function print\_surface\_area (SA=2lw+2lh+2hw)
* Friend Function double\_data\_members (length, breadth, height)
* Write a suitable main() function to test all the functions of the **Box** class and to test the functionality of the Friend Function.

**TASK 3: (Inline Function)**

Implement a class called **Operation**. The Operation class will have three data members:

* int a;
* int b;

You have to implement the following:

1. Implement all getters/setters.
2. Write an overloaded and default constructor.
3. Implement following member functions such that they are inline.

void sum();

void difference();

void product(); // Write in Comments section what are the

void division(); benefits of inline function.

1. Write a suitable main() function to show desired functionality.