**National University of Computer and Emerging Sciences**



**Lab Manual 08**

**Object Oriented Programming**

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## **Objectives:**

After performing this lab, students shall be able to:

* This Pointer
* Cascaded function calls
* Static member variables and functions

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

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

* int length;
* int breadth;
* int height;

You have to implement the following:

1. Implement all getters/setters.
2. There should be a static data member

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

1. Write an overloaded and default constructor.
2. Write member functions as follow:
   * + static int getCount();
     + double Volume();
     + double Area();
3. Also find the function values by passing local data members into the following functions.
   * + double Volume();
     + double Area();

**Note:** For assigning and accessing the values of local variables we must use this pointer because same data members are present there.

1. Write a suitable main() function to test the functionality of the static members and functions.

**TASK 2: (Cascading)**

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

* int date;
* int month;
* int year;
* int salary;

You have to implement the following:

1. Write a default constructor.
2. Write an overloaded constructor to enter the current date, month and year.
3. Write all setters for date, month, year such that each method of returns a reference to itself. (Cascading)

Make sure that

* Date can never be greater than 31 and less than 1.
* Month can never be greater than 12 and less than 1.
* Year can never be greater than 2022 and less than 0.

Whenever object is created your setters logic should be checked.

1. Write a member function getEmployeeDuration() that returns the working duration of an employee in this company by comparing it with current date.
2. Write all getters.
3. Write a member function newSalary() that returns the salary of each employee if

* EmployeeDuration is greater than 3 years than 7% appraisal is added
* EmployeeDuration is greater than 5 years than 10% appraisal is added
* Otherwise salary of an employee remains same

1. Write a suitable main() function to test all the functions of the Duration class such that implementation of function cascading is clear.