National University of Computer and Emerging Sciences



Lab Manual

for

Object Oriented Programming

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**Lab Manual 5**

**Objectives:**

After performing this lab, students shall be able to:

* Create overloaded constructors
* Create destructors
* Handle dynamic memory for class data members as well as declaring objects.

**Problem 1**

In this task, we are going to create a small scale **Event Management System**.

First make three files: **event.cpp, event.h**  to separate class header and implementation.

1. Create a **class Event** with following variables: **char\* event\_name**, **char\* event\_venue**, **char event\_date[11]** and **char event\_time[9]**.

* Input format for event\_date: dd-mm-yyyy
* Input format for event\_time: hh:mm am/pm

1. Implement default constructor and overloaded constructor. Print “Default Constructor Called” and “Overloaded Constructor Called” in the respective constructors. The declaration for overloaded constructor is as follows:

* **Event(char event\_name[20], char event\_venue[50], char event\_date[11],char event\_time[9]);**

1. Implement all setters and getters for class Event. You can create a helper function **userInput()** to input event details.
2. Implement the destructor **~Event()** for class **Event**. Print “Destructor Called” in the destructor. Deallocate all the dynamically allocated memory of class data members.
3. Implement **addEventOver** function that should not be a part of Event class. This function will add a new **Event** using overloaded constructor.

**Event\* addEventOver(Event \*eve);**

1. Implement **addEventSet** function that should not be a part of Event class. This function will add a new **Event** using setters.

**void addEventSet(Event eve);**

1. Implement **displayEvent()** function. This will display event details of dynamic class object . You can use getters in this function.

**Sample Menu Program:**

*Menu Program*

*Add New Event Using Overloaded Constructor: Enter 1*

*Add New Event Using Setters: Enter 2*

*Display Event: Enter 3*

*Exit: Enter 0*

*Enter your choice: 1*

*Add New Event*

*Enter event name: Programming 101*

*Enter event venue: Rafaqat Ali Auditorium*

*Enter event date: 06-10-2020*

*Enter event time: 11:30 AM*

**Note:**

* Deallocate all dynamically allocated memory.
* Do not use copy constructor.
* Do not use strcpy() function. Copy the character array manually where needed based on ending ‘\0’ character.
* Follow all the code indentation, naming conventions and code commenting guidelines.