# Department of Computing

# CS 212: Object Oriented Programming

# Class: BSCS-8AB

# Lab 11: Event Driven Programming

# Date: April 22, 2019

# Instructor: Hirra Anwar

**Learning Objectives**

The learning objective of this lab is to understand and practice the concepts of event driven programing. The major focus of the lab will be on different types of listeners as well as adapter classes and their usage.

Refer to GUI slides for details related to listeners and consult java docs for description related to the adapter classes.

**Lab Task #1**

Write a computer program implementing a mouse listener. Create a GUI with a container whose color changes and a label is displayed with a message when a mouse activity takes place in that container. Set the background using the method setBackground(Color.blue). e.g.

Green Color (Mouse pressed )

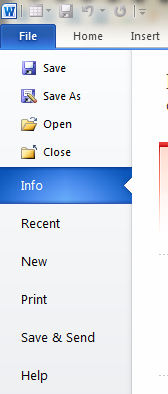
Red Color (Mouse released)

Blue Color (Mouse entered)

Implement all mouse events present in the mouselistener interface. Also display the number of clicks on the interface (no. of times the mouse is clicked.)

**Lab Task #2**

Following is the Microsoft Office Menu that is shown once the File menu is clicked. Implement the following GUI and ensure that once Info tab and Print tab is clicked, a window displaying some Information message is shown. Similarly when Open is clicked, a file menu should open where a JFile chooser is used. Create the GUI and implement the appropriate listeners.



**Lab Task #3**

For the GUI created in task 2, instead of your GUI class implementing the Listener interface, use an appropriate adapter class instead. For each listener interface, an adapter class also exists. Write your comments what necessary changes had to be done for this purpose.

Also explore how a submenu can be created which is a menu within a top menu.

**Lab Task #4**

Create a basic GUI and implement the mouseMotionInterface with two of its methods mouseDragged and mouseMoved. In this case display the coordinates that are changed due to mouse movement.

Firstly explore all the GUI classes and interfaces online with description of their methods that are to be used in this lab.

**Hand in**

Hand in the source code from this lab at the appropriate location on the LMS system. You should hand in a single compressed/archived file named Lab\_11\_<Your CMS\_ID. Your\_NAME >.zip (without angle brackets) that contains ONLY the following files.

1. All completed java source files representing the work accomplished for this lab. The files should contain author in the comments at the top.
2. A plain text file named **README.TXT** that includes a) author information at the beginning, b) a brief explanation of the lab, and c) any comments, or suggestions.

**To Receive Credit**

1. By showing up on time for lab, working on the lab solution, and staying to the end of the class period, only then you can receive full credit for the lab assignment.
2. Comment your program heavily. Intelligent comments and a clean, readable formatting of your code account for 20% of your grade.
3. The lab time is not intended as free time for working on your programming/other assignments. Only if you have completely solved the lab assignment, including all challenges, and have had your work checked off for completeness by your TA/Lab Engineer should you begin the programming/other assignments.