Lab Exercise # 5
Event Handling
Computer Science 2334

<u>Due by: Friday, March 13, 2009, 2:00 pm</u>

Members:

Learning Objectives:

- Demonstrate your understanding of event handling in Java by completing a distance calculation program. The program takes as input latitudes and longitudes for two points and calculates the distance between them using the '***Haversine***' formula.

- Modify a class such that it implements and uses **ActionListener** as the event listener on multiple GUI components.

- Implement **actionPerformed()** to handle multiple events from multiple components.

- Work with an appropriate data model for the program.

Instructions:

This lab exercise requires a laptop with an Internet connection. Once you have completed the exercises in this document, your group will submit it for grading. All group members should legibly write their names at the top of this lab handout.

Make sure you read this handout and look at all of the source code posted on the class website for this lab exercise before you begin working.

1. Review the source code for the **CalculateDistance** class. This class is the data model for the distance calculation program and you will use methods provided in this class to complete the **Lab5Drver** class.

2. Read through the source code of **Lab5Driver.java** and note the comments provided in the source code that give hints as to what needs to be done in the program. What is the name of the class that will be used to implement **ActionListener** in this program?

3. Label each component of the GUI below with the corresponding code variables from **Lab5Driver.java**.

```
Calculate Distance Between Two Points   _ □ ✕

                    Latitude          Longitude

Point # 1        -10                10

Point # 2        4                  -4

Distance    =    1365.8317027806...  Miles

     Calculate          Clear             Close
```

4. Register the class that will serve as an **ActionListener** with the required components. This means that you need to "***connect***" the **ActionListener** objects to the objects that are listening for events.

5. Add an **actionPerformed()** method to the class that serves as your **ActionListener** (the class that implements the **ActionListener** interface). This method should handle the events specified in the source code of **Lab5Driver.java**.

6. Test your program by filling in the following table:

	Latitude	**Longitude**	**Distance**
Point #1			
Point #2			
Point #1			
Point #2			
Point #1			
Point #2			

7. Submit the project archive following the steps given in the **Submission Instructions** by **2:00 pm, Friday March 13, 2009**.

8. Turn in this lab handout to your lab instructor.