

# CIS 162 Lab 13

## Practice with Nested Loops

### Objectives

After completing this lab, you should be able to:

- *write* for loops
- *write* nested for loops

### Lab Activity #1 – Loop Practice

Implement a class called `LoopPractice` with no instance variables.

- `public LoopPractice()` – does nothing.
- `public void displayMultiples(int num)` – display the first 100 multiples of `num` (ten numbers per line). For example, if `num` were three the method would display 3, 6, 9, 12, 15...300 on ten lines. **Use a single for loop.**
- `public void drawRectangle(int rows, int cols)` – draw a rectangle of asterisks with the provided number of rows and columns. **Use nested for loops.**
- `public void drawTriangle(int rows)` – draw a triangle of asterisks with the provided number of rows. See sample #1. **Use nested for loops.**

Sample #1

```
*
* *
* * *
* * * *
```

- `public void drawOtherTriangle(int rows)` – draw a triangle of asterisks with the provided number of rows. See sample #2. **Use nested for loops.**

Sample #2

```
* * * *
* * *
* *
*
```

## Lab Activity #2 – Checkerboard

### Step #1 Copy this code to draw a black square

```
import java.awt.*;
import javax.swing.*;

public class Checkerboard extends JPanel{

    public static void main(String args[]){
        JFrame f = new JFrame("Checker Board");
        f.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        f.add(new Checkerboard ());
        f.pack();
        f.setVisible(true);
    }

    public Checkerboard (){
        setPreferredSize (new Dimension(500,500));
    }

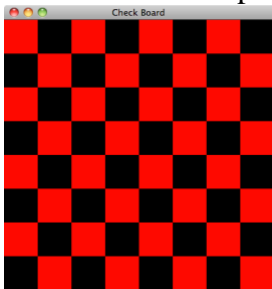
    public void paintComponent(Graphics g){
        super.paintComponent(g);
        g.setColor(Color.black);
        g.fillRect(0, 0, 50, 50);
    }
}
```

### Step #2 Draw first row of a checkerboard

Use a for loop to draw eight squares side by side and alternate the colors. The length of each side is 50. Use only ONE `fillRect()` command. Use an if statement to alternate between red and black.

### Step #3 Draw eight rows of a checkerboard

Use nested for loops to draw eight rows but still use only ONE `fillRect()` command.



## **Lab Activity #3 – Work on Project 4**

### **Grading Criteria**

This lab is worth a possible 20 points. Show your work to your instructor or lab assistant. To receive full credit, you must be present at the end of lab.