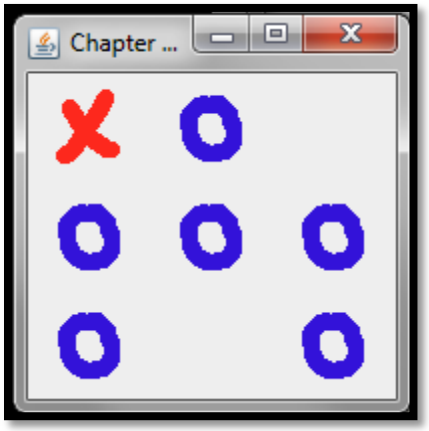
CIT 249: Java II
Chapter 12
Lab2

In this lab we will complete #7 on page 477. When the program is run it will display a random series of Xs and Os. Each time it will display a different series:



1. Open a new document and save the file as Ch12Lab2.java.
2. Our first step is to import the predefined classes that are required by typing:

```
import java.awt.GridLayout;
import javax.swing.JFrame;
import javax.swing.JLabel;
import javax.swing.ImageIcon;
```

3. Next we type our class header and opening brace:

```
public class Ch12Lab2 extends JFrame
{
```

- Here we extend the JFrame. This predefine class contains all attributes and methods required to create standalone GUI applications.

4. First we construct two new ImageIcon. This class is part of the javax.swing package and will allow you to display an image on the screen. I will include the two images with these instructions. Type:

```
private ImageIcon cross = new ImageIcon("image/x.gif");
private ImageIcon not = new ImageIcon("image/o.gif");
```

5. When you extend the JFrame you normally include a constructor method for constructing the components that are added to the frame. The constructor method always has the same name as the class. Type:

```
public Ch12Lab2()
{
```

6. We set the frame's layout to a GridLayout with 3 rows and 3 columns. Type:

```
    setLayout(new GridLayout(3, 3));
```

7. A for loop is used to randomly draw labels with the ImageIcon set as their icon. Type:

```
    for (int i = 0; i < 9; i++)
    {
        int mode = (int)(Math.random() * 3);
        if (mode == 0)
          add(new JLabel(cross));
        else if (mode == 1)
          add(new JLabel(not));
        else
          add(new JLabel());
    }
}
```

- Here we create an integer which equals a random number multiplied by 3. The Math.random() draws a number greater than or equal to 0.0 and less than 1.0
- if the number equals 0 then the x is drawn.
- else if the number is 1, the o is drawn.
- else a blank label is drawn.
- Finally we close the method.

8. The main method is written the same as in the first lab except instead of using the pack() method we use the setSize() method which allows us to specify the frame size of

the frame. Type:

```
public static void main(String[] args)
{
	Ch12Lab2 frame = new Ch12Lab2();
	frame.setTitle("Chapter 12 Lab 2");
	frame.setSize(200, 200);
	frame.setLocationRelativeTo(null);
	frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
	frame.setVisible(true);
}
```

9. End by closing the class.
10. Compile the program and fix any errors if necessary.
11. Run the program.
12. Compress all files into a single zip or rar file and submit. Include the image folder within the zip or rar file.