CS260 Intro to Java & Android
10.AndroidAdvUI (Part II)

Winter 2015
Creating TicTacToe for Android

- Now that we have TicTacToe displayed graphically on the screen, we need to provide game play
- Essentially, we need the following files:
  1. TicTacToe - initial activity with game setup specifics
  2. TicTacToeGame - activity launched to play the game
  3. TicTacToeView - a custom drawable view with an onDraw that collects the user interaction data and updates the screen accordingly
Android Size

- When a View’s constructor is called, the size is unknown.
- View size is calculated during the layout stage (i.e. after the constructor but before the draw)
- Use onSizeChanged () to be notified when values are known or changed
- getWidth () and getHeight () can be used in onDraw
Implementing Game Play in the View

- The drawing and game play will happen in the View; therefore, keep a reference back to the Game class
- setFocusables allow for user input

```java
private final TicTacToeGame mTicTacToeAndroid;

public CustomDrawableView (Context context) {
    super (context);
    this.mTicTacToeAndroid = (TicTacToeGame) context;
    setFocusable (true);
    setFocusableInTouchMode (true);
}
```
What if View is changed?

- Add the following overridden method to the view
- Insert Log.d messages to print out the old width/height and the new width/height
- Run the app and switch emulator between portrait and landscape

```java
@Override
protected void onSizeChanged (int viewWidth, int viewHeight,
                               int oldViewWidth, int oldViewHeight)
{
    mRectangleWidth = viewWidth / (int) mNUMBER_OF_RECTANGLES;
    mRectangleHeight = viewHeight / (int) mNUMBER_OF_RECTANGLES;

    super.onSizeChanged (viewWidth, viewHeight,
                         oldViewWidth, oldViewHeight);
}
```
Override onTouchEvent

- Write the Android code necessary to override the onTouchEvent method so that when the user touches the screen:
  1. The \((x,y)\) coordinates are displayed in the LogCat window
  2. The \((xTile,yTile)\) of the TicTacToe game are displayed in the LogCat window
Hook up your TicTacToe Java

- Get some piece of information from the TicTacToe Java game and display the info in the LogCat window after an onTouchEvent has occurred
- Pretend that the code on the following slide is TicTacToe
package games.cs.pacificu.edu.tictactoeandroid;

public class TicTacToeJava {
    int mRow, mCol;

    public TicTacToeJava (int row, int col) {
        mRow = row;
        mCol = col;
    }

    public int getRow () {
        return mRow;
    }

    public int getCol () {
        return mCol;
    }

    public void start () {
    }
}