



CS260 Intro to Java & Android

10.AndroidAdvUI (Part II)

Winter 2018

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

```
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

```
@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

TicTacToe Java

```
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 ()  
    {  
  
    }
```

```
}
```