Drawables

2D Graphics with Drawables

- Make use of Drawables for drawing shapes and images to a View
  - Drawable class
  - Subclasses: BitmapDrawable, ShapeDrawable, PictureDrawable, LayerDrawable etc.
- Drawables can be defined and instantiated in three ways:
  - Using an image saved in your project resources
  - Using an XML file that defines Drawable properties
  - Using normal class constructors in code
- Drawable resources usually stored in res/drawable folder of your project

Drawables

- Drawables may take a variety of forms:
  - **Bitmap**: the simplest Drawable, a PNG or JPEG image.
  - **Nine Patch**: an extension to the PNG format allows it to specify information about how to stretch it and place things inside of it.
  - **Shape**: contains simple drawing commands instead of a raw bitmap, allowing it to resize better in some cases.
  - **Layers**: a compound drawable, which draws multiple underlying drawables on top of each other.
  - **States**: a compound drawable that selects one of a set of drawables based on its state.
  - **Levels**: a compound drawable that selects one of a set of drawables based on its level.
  - **Scale**: a compound drawable with a single child drawable, whose overall size is modified based on the current level.

Shape Drawable

- Especially useful for defining various properties of some standard shapes to be included in a view background

- For example, to achieve a gradient background to the message, define the following in a XML file (bg_message_left.xml) in the res/drawable:

```xml
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle" >
    <!-- view background color -->
    <solid android:color="@color/msgleft" >
    </solid>
    <corners android:radius="5dp" >
    </corners>
</shape>
```

- Then set it as the background to the linear layout in message.xml file

```xml
<LinearLayout
    ...
    android:background="@drawable/bg_message_left"
    ...
    android:elevation="4dp">
```

Chat Client with Colors Exercise

- Off to our next exercise
  - Continuing to extend the ChatClient exercise adding Toolbar, RecyclerView