CSc 317
Layouts, Themes

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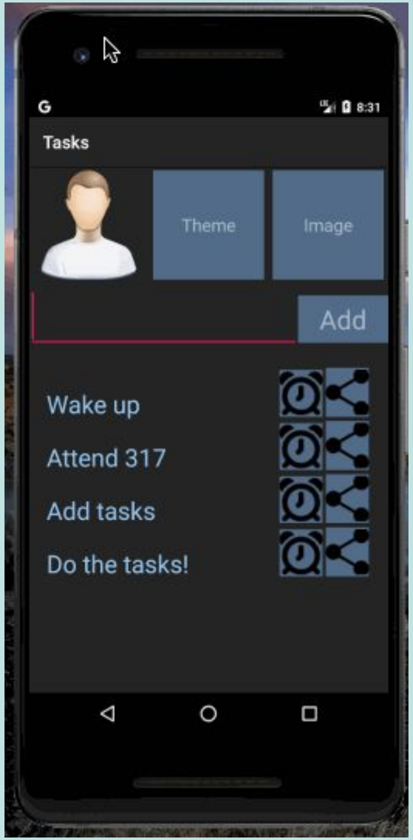
Adding a Camera Intent

```java
static final int REQUEST_IMAGE_CAPTURE = 1;

public void dispatchTakePictureIntent(View v) {
    Intent takePictureIntent = new
            Intent(MediaStore.ACTION_IMAGE_CAPTURE);
    startActivityForResult(
            takePictureIntent, REQUEST_IMAGE_CAPTURE);
}
@Override
protected void onActivityResult(int requestCode,
                                int resultCode,
                                Intent data) {

    if (requestCode == REQUEST_IMAGE_CAPTURE &&
            resultCode == RESULT_OK) {
        Bundle extras = data.getExtras();
        Bitmap imageBitmap = (Bitmap) extras.get("data");
        ImageView imageView = findViewById(R.id.profile_image);
        imageView.setImageBitmap(imageBitmap);
    }

}
```



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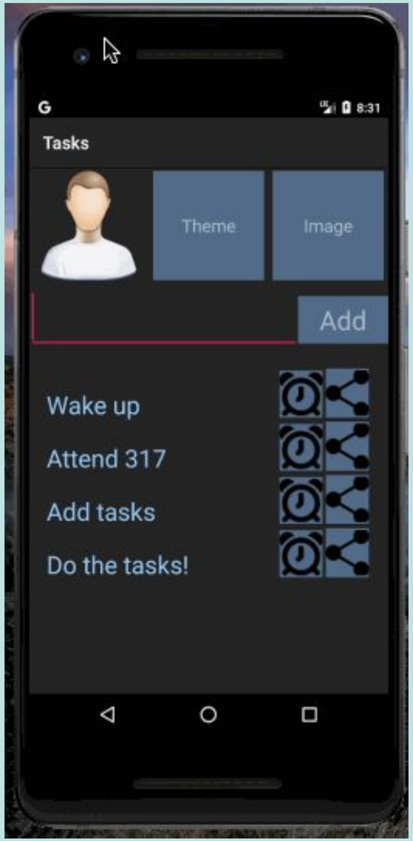
Adding a Camera Intent

```
@Override
// Just a small icon, how to save file, full size?
protected void onActivityResult(int requestCode,
                                int resultCode,
                                Intent data) {

    if (requestCode == REQUEST_IMAGE_CAPTURE &&
            resultCode == RESULT_OK) {
        Bundle extras = data.getExtras();
        Bitmap imageBitmap = (Bitmap) extras.get("data");
        ImageView imageView = findViewById(R.id.profile_image);
        imageView.setImageBitmap(imageBitmap);
    }

}
```



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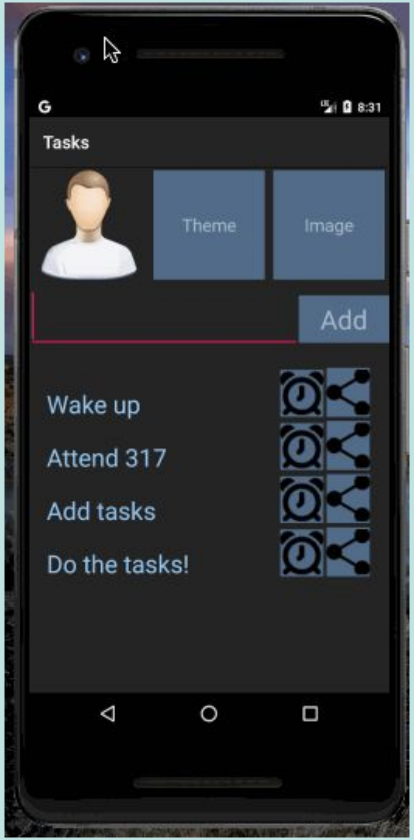
Adding a Camera Intent

```
public void dispatchTakePictureIntent(View v) {
     Intent takePictureIntent =
             new Intent(MediaStore.ACTION_IMAGE_CAPTURE);

    //StrictMode.VmPolicy.Builder builder =
    //    new StrictMode.VmPolicy.Builder();
    //StrictMode.setVmPolicy(builder.build());
    File file = new File(Environment.getExternalStorageDirectory(),
                                 (currentPhotoPath));
    Uri currentPhotoUri = Uri.fromFile(file);

     takePictureIntent.putExtra(
             MediaStore.EXTRA_OUTPUT, currentPhotoUri);
     startActivityForResult(
             takePictureIntent, REQUEST_IMAGE_CAPTURE);
}
```



Wake up
Attend 317
Add tasks
Do the tasks!

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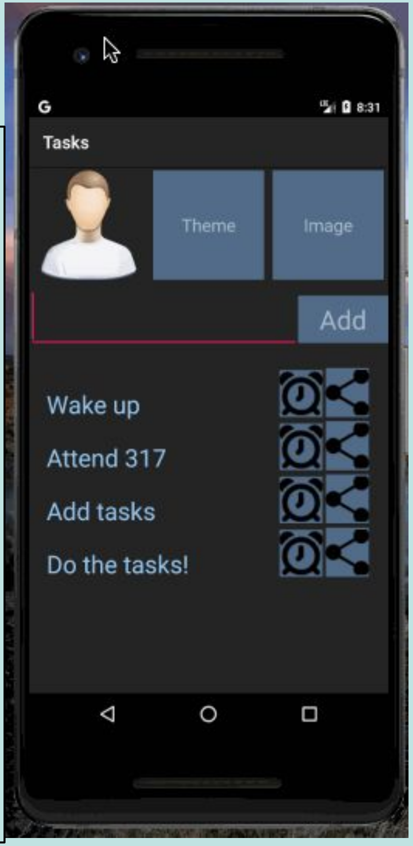
Adding a Camera Intent

```
if (requestCode == REQUEST_IMAGE_CAPTURE &&
    resultCode == RESULT_OK) {

    BitmapFactory.Options bmOptions =
            new BitmapFactory.Options();
    Bitmap bitmap = BitmapFactory.decodeFile(
            currentPhotoPath, bmOptions);
    currentImageView.setImageBitmap(bitmap);

}
```



Wake up
Attend 317
Add tasks
Do the tasks!

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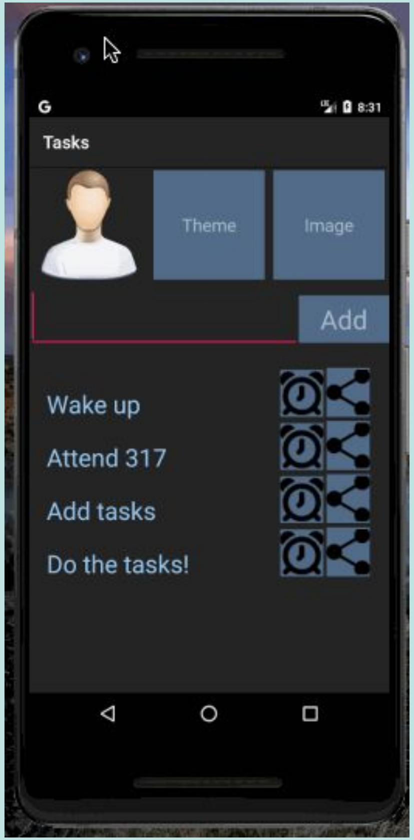
Permissions!

```
<!-- Add to manifest -->
<uses-permission
    android:name=
        "android.permission.READ_EXTERNAL_STORAGE" />
<uses-permission
    android:name=
        "android.permission.WRITE_EXTERNAL_STORAGE" />
```

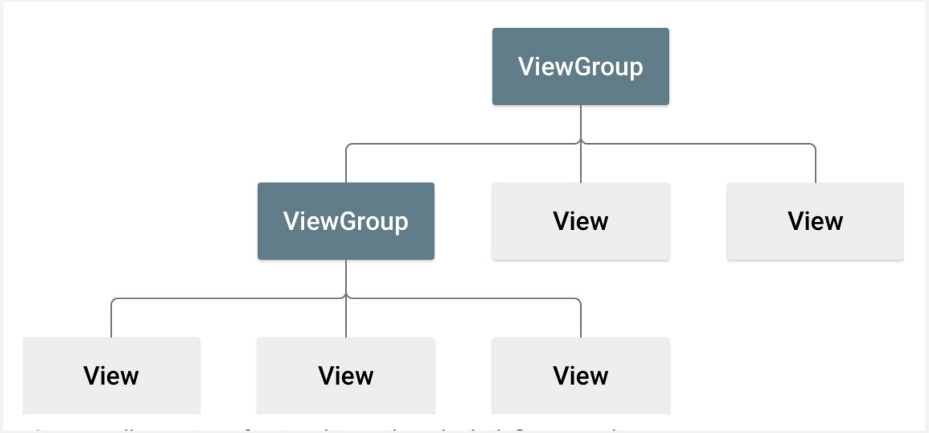


Layouts

- From the Android developer docs
  - A **layout** defines the structure for a user interface in your app, such as in an activity.
  - All elements in the layout are built using a hierarchy of **`View`** and **`ViewGroup`** objects.
    - A **`View`** usually draws something the user can see and interact with.
    - A **`ViewGroup`** is an container that defines the layout structure for View and other ViewGroup objects

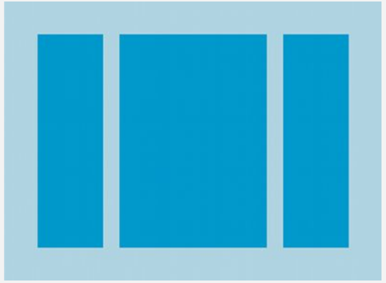
Layouts

- Layouts can be constructed hierarchically
- Can nest layouts within layouts, ViewGroups within ViewGroups

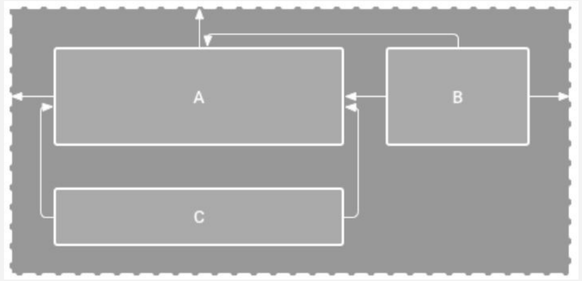


Layout types

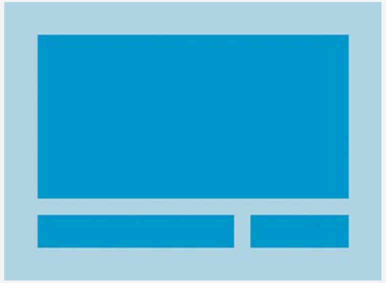
- **LinearLayout**



- **ConstraintLayout**

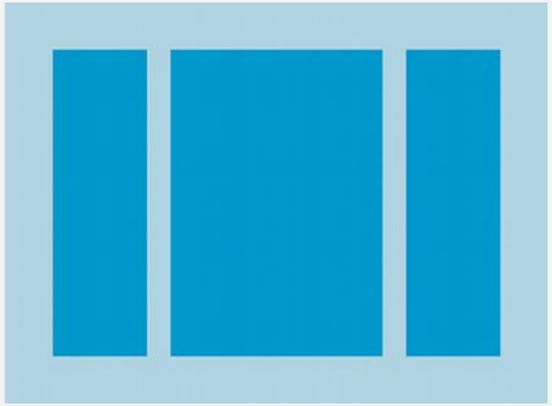


- **RelativeLayout**



LinearLayout

- For laying out **Views** and **ViewGroups** linearly!
- Can be configured to be a horizontal or vertical linear layout



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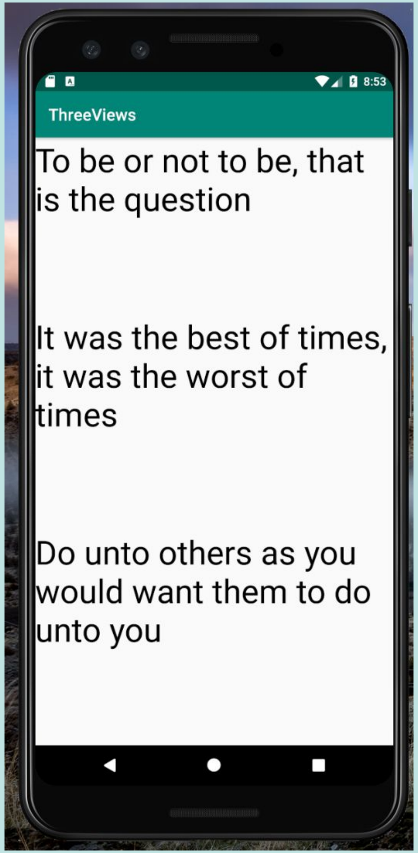
Create a project (ThreeViews)

- One activity
- LinearLayout, vertical
- Three TextViews with famous quotes/text
- Use LayoutWeight



To be or not to be, that is the question

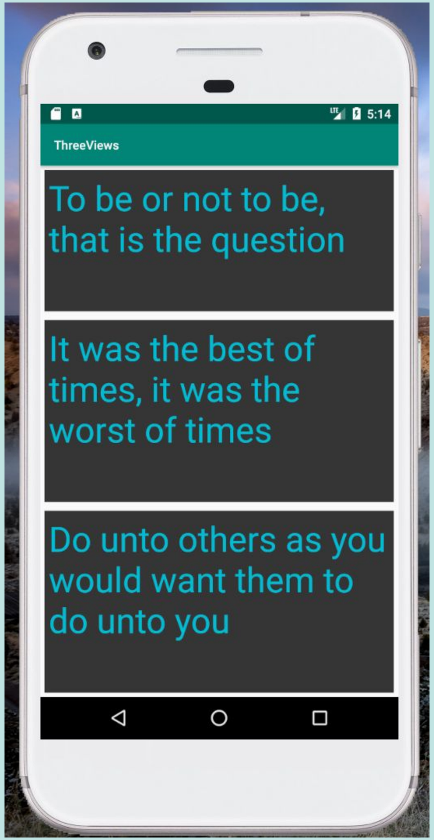
It was the best of times, it was the worst of times

Do unto others as you would want them to do unto you

ICA

Create a project (ThreeViews)

- Customize text color, background color, font size, etc


5:14

ThreeViews

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Configuring TextView

- Repetitive much?
- This can be simplified with a Style

```
<TextView
    . . .
    android:text=". . ."
    android:textSize="40dp"
    android:background="#222222"
    android:textColor="#8888ff"
    android:layout_margin="5dp"
    android:padding="10dp"
    android:layout_weight="1"/>

<TextView
    . . .
    android:text=". . ."
    android:textSize="40dp"
    android:background="#222222"
    android:textColor="#8888ff"
    android:layout_margin="5dp"
    android:padding="10dp"
    android:layout_weight="1"/>

<TextView
    . . .
    android:text=". . ."
    android:textSize="40dp"
    android:background="#222222"
    android:textColor="#8888ff"
    android:layout_margin="5dp"
    android:padding="10dp"
    android:layout_weight="1"/>
```

Configuring TextView

- Use a Style!

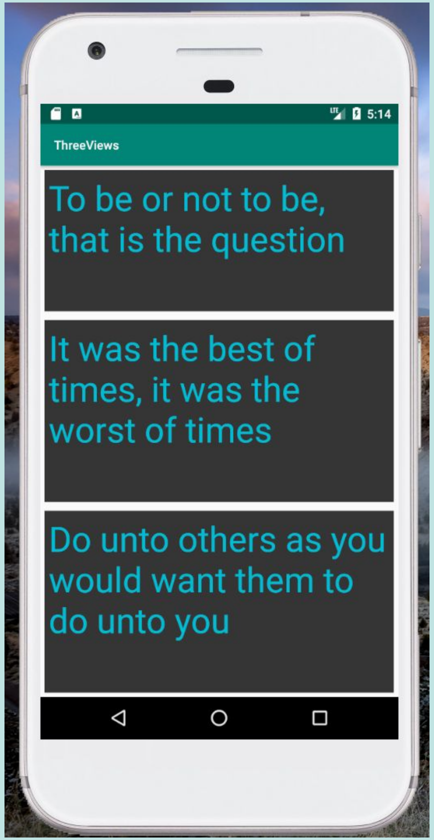
```
<TextView
    . . .
    android:text=". . ."
    style="@style/TextStyle"
    android:layout_weight="1"/>

<TextView
    . . .
    android:text=". . ."
    style="@style/TextStyle"
    android:layout_weight="1"/>

<TextView
    . . .
    android:text=". . ."
    style="@style/TextStyle"
    android:layout_weight="1"/>
```

```
<!-- Base application theme. -->
<style name="TextStyle"
            parent="@android:style/TextAppearance.Widget.TextView">
    <item name="android:background">#353535</item>
    <item name="android:textColor">#00BCD4</item>
    <item name="android:textStyle">normal</item>
    <item name="android:textSize">40dp</item>
    <item name="android:layout_margin">5dp</item>
    <item name="android:padding">10dp</item>
</style>
```

Use a style

- Update the app to use a style for the three TextViews

```
<!-- Base application theme. -->
<style name="TextStyle"
          parent="@android:style/TextAppearance.Widget.TextView">
    <item name="android:background">#353535</item>
    <item name="android:textColor">#00BCD4</item>
    <item name="android:textStyle">normal</item>
    <item name="android:textSize">40dp</item>
    <item name="android:layout_margin">5dp</item>
    <item name="android:padding">10dp</item>
</style>
```



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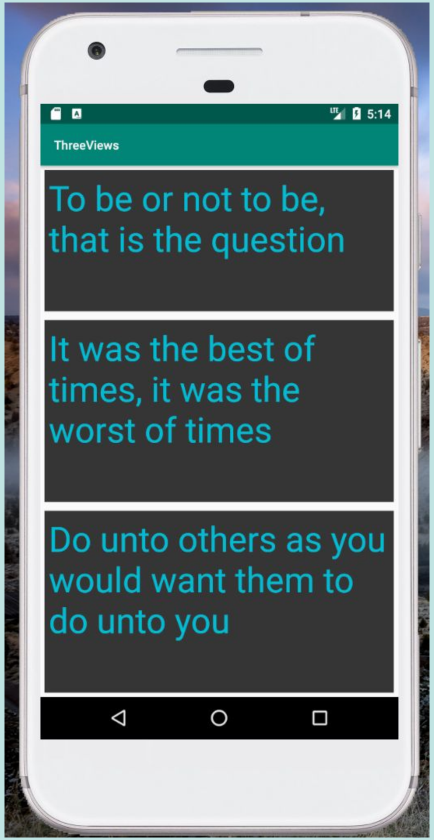
Rotation

- Try rotating, what does it do?



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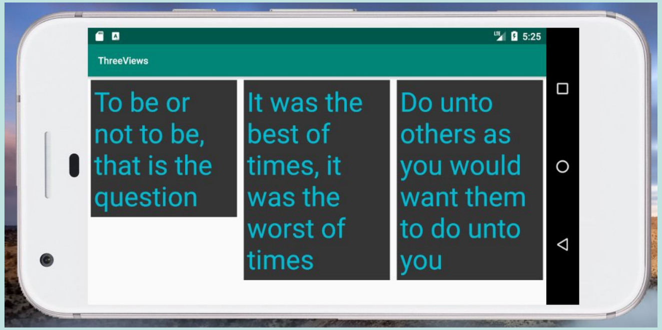
Rotation

Change app so that LinearLayout changes to horizontal orientation when rotated to landscape



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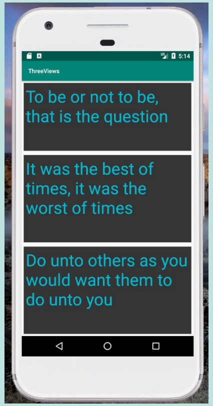

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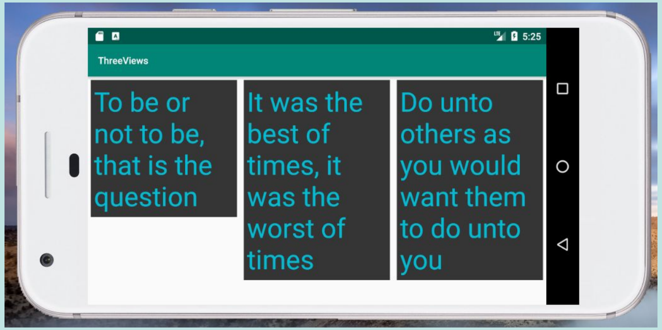
```
@Override
public void onConfigurationChanged(Configuration newConfig) {
    super.onConfigurationChanged(newConfig);
    LinearLayout outer = findViewById(R.id.outer_layout);
    if (newConfig.orientation == Configuration.ORIENTATION_LANDSCAPE) {
        outer.setOrientation(LinearLayout.HORIZONTAL);
    } else if (newConfig.orientation == Configuration.ORIENTATION_PORTRAIT) {
        outer.setOrientation(LinearLayout.VERTICAL);
    }
}
```

ICA

Rotation

Change app so that LinearLayout changes to horizontal orientation when rotated to landscape



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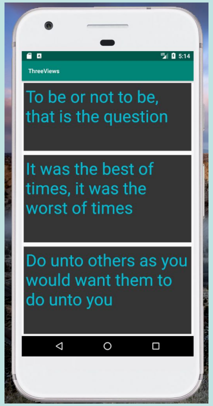

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```
<!-- in manifest file -->
<activity android:name=".MainActivity"
            android:configChanges="orientation|screenSize">
```

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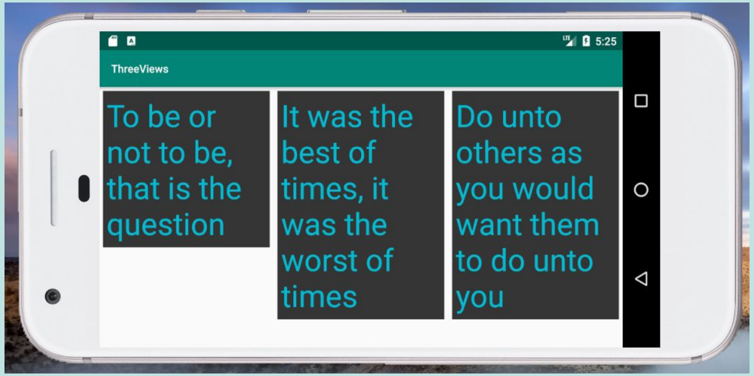
Rotation

How else could this be accomplished?


5:25

ThreeViews

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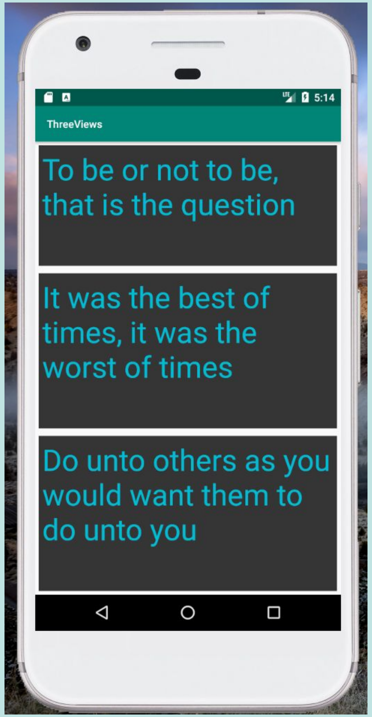
5:14

ThreeViews

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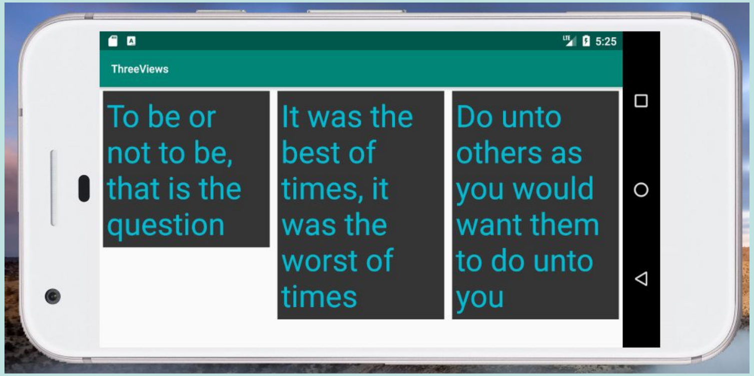
Rotation

How else could this be accomplished?

Alternate resources!



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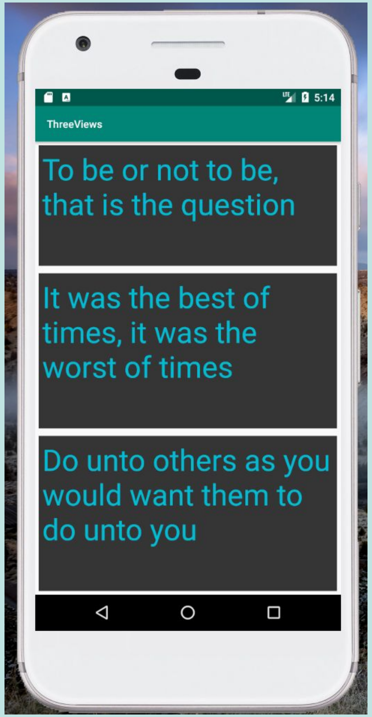

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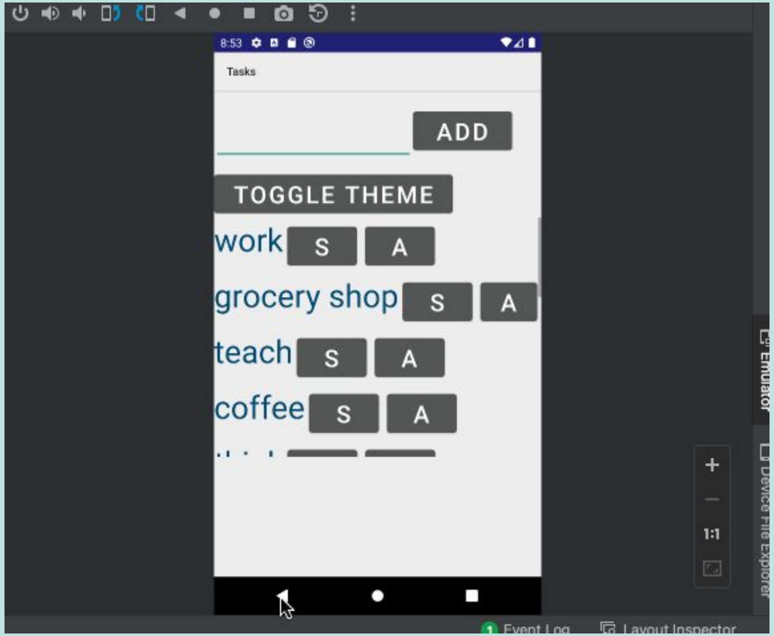
Two columns in landscape mode

Work together, do some investigating (this will be a longer activity)

Look into:

- GridView
- onConfigurationChanged Method
- android:configChanges (manifest file)

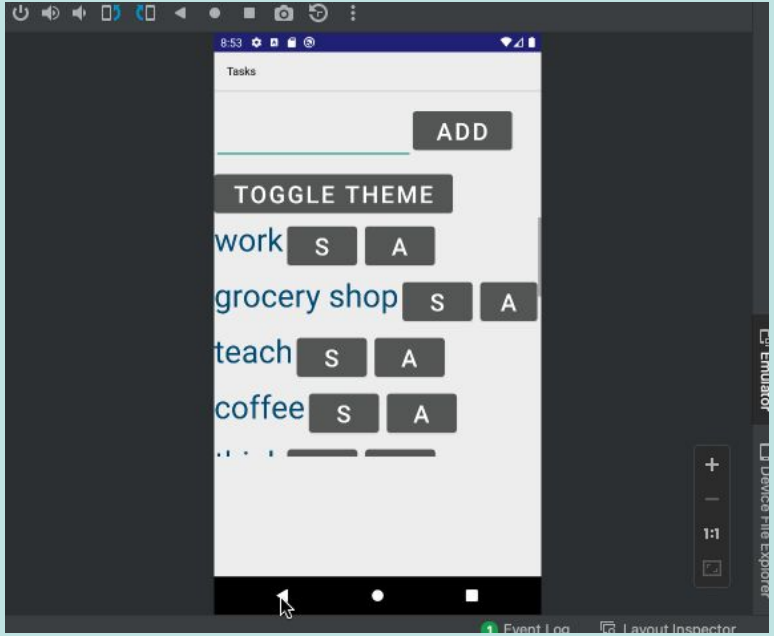


ICA

Two columns in landscape mode

Why does the listview / gridview not fit the screen space very well?

How could we fix this?



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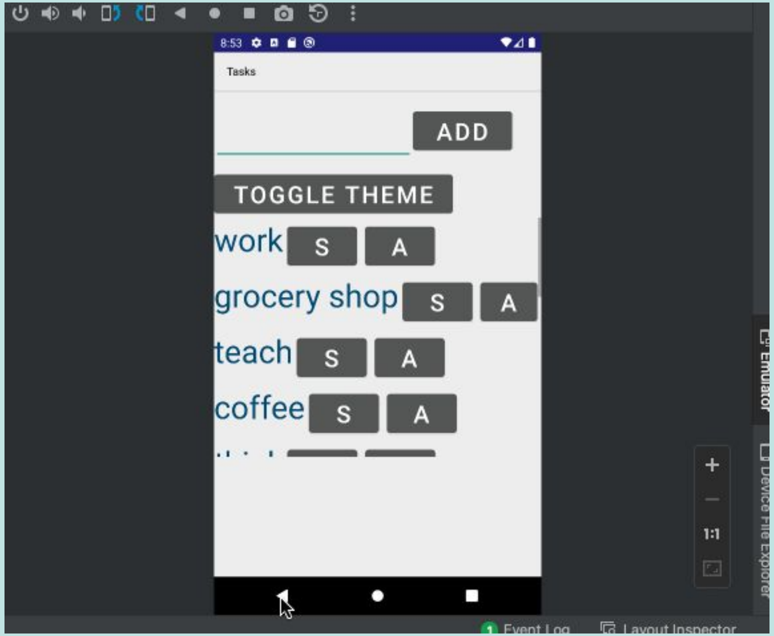
Two columns in landscape mode

Use a constraintLayout to fix this issue


8:53
Tasks
ADD
TOGGLE THEME
work S A
grocery shop S A
teach S A
coffee S A
Emulator
Device File Explorer
1:1
Event Log
Layout Inspector