



The screenshot shows the Android Studio interface for a project named "CityGuide". The project structure on the left includes "app", "manifests", "java" (with "edu.udayton.cityguide" containing "MainActivity"), "generatedJava", "res", and "Gradle Scripts". The "Resource Manager" tab is selected.

The main workspace displays the "activity_main.xml" layout file. The "Design" tab is active, showing a dark blue preview area. On the left, the "Component Tree" panel lists a single item: "ConstraintLayout" containing "Ab TextView- 'Hello World!'". The "Palette" on the right shows categories like Common, Text, Buttons, Widgets, Layouts, Containers, Google, and Legacy, with "Common" currently selected. A tooltip box with a yellow arrow points to the "Ab TextView" entry in the palette, containing the text:

As in prior lessons, we won't delete the default TextView, but customize it instead.

In this lesson, we'll customize it as the template for the items in our list.

The status bar at the bottom shows "Source generation ended in 765 ms (moments ago)".



CityGuide > app > src > main > res > layout > activity_main.xml

1:Project

Resource Manager

Build Variants

2:Structure

Layout Captures

2: Favorites

1:Project

Android

activity_main.xml x MainActivity.java x

Palette

Common Ab TextView

Text Button

Buttons ImageView

Widgets RecyclerView

Layouts <> <fragment>

Containers ScrollView

Google Switch

Legacy

Attributes

Pixel 28 AppTheme Default (en-us) 26% 8dp

No component selected.

Select a component in the Component Tree or on the Design Surface.

Component Tree

ConstraintLayout

Ab TextView- "Hello World!"

For now, let's switch the main layout from ConstraintLayout to a vertical LinearLayout

Switch to the layout's text view

Design Text

Event Log

Source generation ended in 765 ms (moments ago)

The screenshot shows the Android Studio interface with the project 'CityGuide' open. The 'activity_main.xml' layout file is selected in the top navigation bar. The left sidebar displays the project structure, including the 'app' module with its sub-directories like 'manifests', 'java', and 'res'. The 'java' directory contains the 'edu.udayton.cityguide' package with the 'MainActivity' class highlighted. The main workspace shows the layout editor with a dark blue background. In the center, there is a white rectangular area containing the text 'Hello World!'. To the right of this text, a yellow callout box contains the text: 'For now, let's switch the main layout from ConstraintLayout to a vertical LinearLayout'. At the bottom of the layout editor, there are two tabs: 'Design' and 'Text'. An arrow points from a yellow callout box above the tabs to the 'Text' tab, with the text: 'Switch to the layout's text view'. The top right corner of the screen shows the zoom level as 26% and a pixel size of 8dp. The top navigation bar includes standard options like File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, and Help. The bottom navigation bar includes TODO, Terminal, Build, Logcat, and Event Log.



Android

Project

Resource Manager

Build Variants

Layout Captures

2: Favorites

Layout Captures

1: Project

activity_main.xml x MainActivity.java x

Preview

Palette

Gradle

Preview

```
<?xml version="1.0" encoding="utf-8"?>
<android.support.constraint.ConstraintLayout[ xmlns:android="http://schemas.android.com/apk/res-auto"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</android.support.constraint.ConstraintLayout>
```

Select the full ConstraintLayout path name, type 'Linear' ...

Hello World!

Design Text

android.support.constraint.ConstraintLayout

TODO Terminal Build Logcat

Source generation ended in 765 ms (moments ago)

43 chars 2:45 CRLF 4 spaces



CityGuide > app > src > main > res > layout > activity_main.xml

... and select the LinearLayout from this code completion menu

```
<?xml version="1.0" encoding="utf-8" ?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#F0F0F0"
    android:orientation="vertical"
    android:padding="10dp" >
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!">
        <!-- Layout parameters for the TextView -->
        <!-- Layout parameters for the TextView -->
        <!-- Layout parameters for the TextView -->
        <!-- Layout parameters for the TextView -->
    </TextView>
</LinearLayout>
```

Preview

Palette

Linear

Design Text

Event Log



activity_main.xml x MainActivity.java x

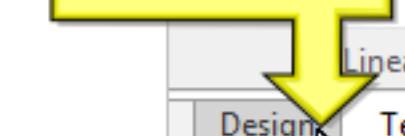
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</LinearLayout>
```

Hello World!

Switch back
to the layout's
design view



CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res layout activity_main.xml

1:Project

Resource Manager

Build Variants

2:Structure

Layout Captures

2: Favorites

Layout Editor

activity_main.xml x MainActivity.java x

Palette

Common Ab TextView

Text Button

Buttons ImageView

Widgets RecyclerView

Layouts <> <fragment>

Containers ScrollView

Google Switch

Legacy

Attributes

<unnamed> LinearLayout

id

Declared Attributes

Layout

layout_width match_parent

layout_height match_parent

visibility

visibility

Common Attributes

orientation

gravity

All Attributes

actionBarNavMode

addStatesFromChild

alpha

alwaysDrawnWithCa

animateLayoutChani

animationCache

background

baselineAligned

baselineAlignedChil

clickable

clipChildren

clipToPadding

contentDescription

context .MainActivity

descendantFocusab

divider

dividerPadding

drawingCacheQualit

duplicateParentState

Device File Explorer

Gradle

Design Text

Hello World!

Hello World!

Select the LinearLayout in the Component Tree

The screenshot shows the Android Studio Layout Editor for the 'activity_main.xml' file. The layout consists of two nested Linear Layouts, both containing a single 'Hello World!' TextView. The inner layout has a blue border and is positioned on the right side of the screen. The outer layout has a white background and is positioned on the left side. A yellow callout box with an arrow points to the 'Component Tree' section of the palette, specifically highlighting the 'LinearLayout(horizontal)' node. The text 'Select the LinearLayout in the Component Tree' is displayed inside the callout box.

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res layout activity_main.xml

1:Project

Resource Manager

Build Variants

2:Structure

Layout Captures

2: Favorites

Layout Editor

activity_main.xml x MainActivity.java x

Palette

Common Ab TextView

Text Button

Buttons ImageView

Widgets RecyclerView

Layouts <> <fragment>

Containers ScrollView

Google Switch

Legacy

Component Tree

LinearLayout(horizontal)

Ab TextView- "Hello World!"

Attributes

<unnamed> LinearLayout

id

Declared Attributes

Layout

layout_width match_parent

layout_height match_parent

visibility

visibility

Common Attributes

orientation horizontal

gravity vertical

All Attributes

ActionBarNavMode

addStatesFromChild

alpha

alwaysDrawnWithCache

animateLayoutChanges

animationCache

background

baselineAligned

baselineAlignedChildIndex

clickable

clipChildren

clipToPadding

contentDescription

context .MainActivity

descendantFocusability

divider

dividerPadding

drawingCacheQuality

duplicateParentState

Device File Explorer

Design Text

TODO Terminal Build Logcat

Event Log

Source generation ended in 765 ms (a minute ago)

Change the orientation value to 'vertical'

The screenshot shows the Android Studio interface with the Layout Editor open. The project navigation bar at the top lists 'File', 'Edit', 'View', 'Navigate', 'Code', 'Analyze', 'Refactor', 'Build', 'Run', 'Tools', 'VCS', 'Window', and 'Help'. Below this is the file path 'CityGuide app src main res layout activity_main.xml'. On the left, the 'Project' and 'Resource Manager' toolbars are visible. The main area shows the 'activity_main.xml' layout editor. The layout consists of a single horizontal `LinearLayout` containing two `TextView` components, both displaying the text 'Hello World!'. The 'Attributes' panel on the right shows the `orientation` attribute set to 'horizontal'. A yellow callout box with the text 'Change the orientation value to \'vertical\'' points to the 'horizontal' dropdown in the 'orientation' row. The 'Component Tree' panel on the left shows the structure: `LinearLayout(horizontal)` containing `Ab TextView- "Hello World!"`.

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res layout activity_main.xml

1:Project

Resource Manager

2:Structure

Layout Captures

2:Favorites

Layout Tree

3:Structure

4:Structure

5:Structure

6:Logcat

TODO Terminal Build Logcat

Source generation ended in 765 ms (a minute ago)

Let's add some resources
Start by expanding the app/res folder in the Project explorer

activity_main.xml x MainActivity.java x

Palette

Common Ab TextView

Text Button

Buttons ImageView

Widgets RecyclerView

Layouts <> <fragment>

Containers ScrollView

Google Switch

Legacy

Component Tree

LinearLayout(vertical)

Ab TextView- "Hello World!"

Attributes

<unnamed> LinearLayout

id

Declared Attributes

Layout

layout_width match_parent

layout_height match_parent

visibility

visibility

Common Attributes

orientation vertical

gravity

All Attributes

actionBarNavMode

addStatesFromChild

alpha

alwaysDrawnWithCa

animateLayoutChani

animationCache

background

baselineAligned

baselineAlignedChil

clickable

clipChildren

clipToPadding

contentDescription

context .MainActivity

descendantFocusab

divider

dividerPadding

drawingCacheQualit

duplicateParentState

Device File Explorer

Design Text

The screenshot shows the Android Studio interface with the project 'CityGuide' open. The 'activity_main.xml' layout file is selected in the 'Layout' tab of the bottom navigation bar. In the center, the layout editor displays a single 'TextView' with the text 'Hello World!'. To the left, the 'Project' tool window shows the directory structure, with a yellow callout box pointing to the 'Gradle Scripts' section. The callout contains the text: 'Let's add some resources' and 'Start by expanding the app/res folder in the Project explorer'. The right side of the screen features the 'Attributes' panel, which lists various XML attributes for the selected 'TextView' component, such as 'layout_width', 'layout_height', 'visibility', 'orientation', and 'gravity'. The 'Component Tree' panel at the bottom left also shows the 'LinearLayout' containing the 'TextView'.



1:Project

Resource Manager

Build Variants

2:Structure

Layout Captures

1:Project

app manifests java edu.udayton.cityguide MainActivity

generatedJava res drawable layout mipmap

Gradle Scripts

Expand the app/res/values folder

activity_main.xml MainActivity.java

Palette

Common Ab TextView

Text Button

Buttons ImageView

Widgets RecyclerView

Layouts <> <fragment>

Containers ScrollView

Google Switch

Legacy

Component Tree

LinearLayout(vertical)

Ab TextView- "Hello World!"

Design Text

Attributes

<unnamed> LinearLayout

id

Declared Attributes

Layout

layout_width match_parent

layout_height match_parent

visibility

visibility

Common Attributes

orientation vertical

gravity

All Attributes

actionBarNavMode

addStatesFromChild

alpha

alwaysDrawnWithCa

animateLayoutChani

animationCache

background

baselineAligned

baselineAlignedChil

clickable

clipChildren

clipToPadding

contentDescription

context .MainActivity

descendantFocusab

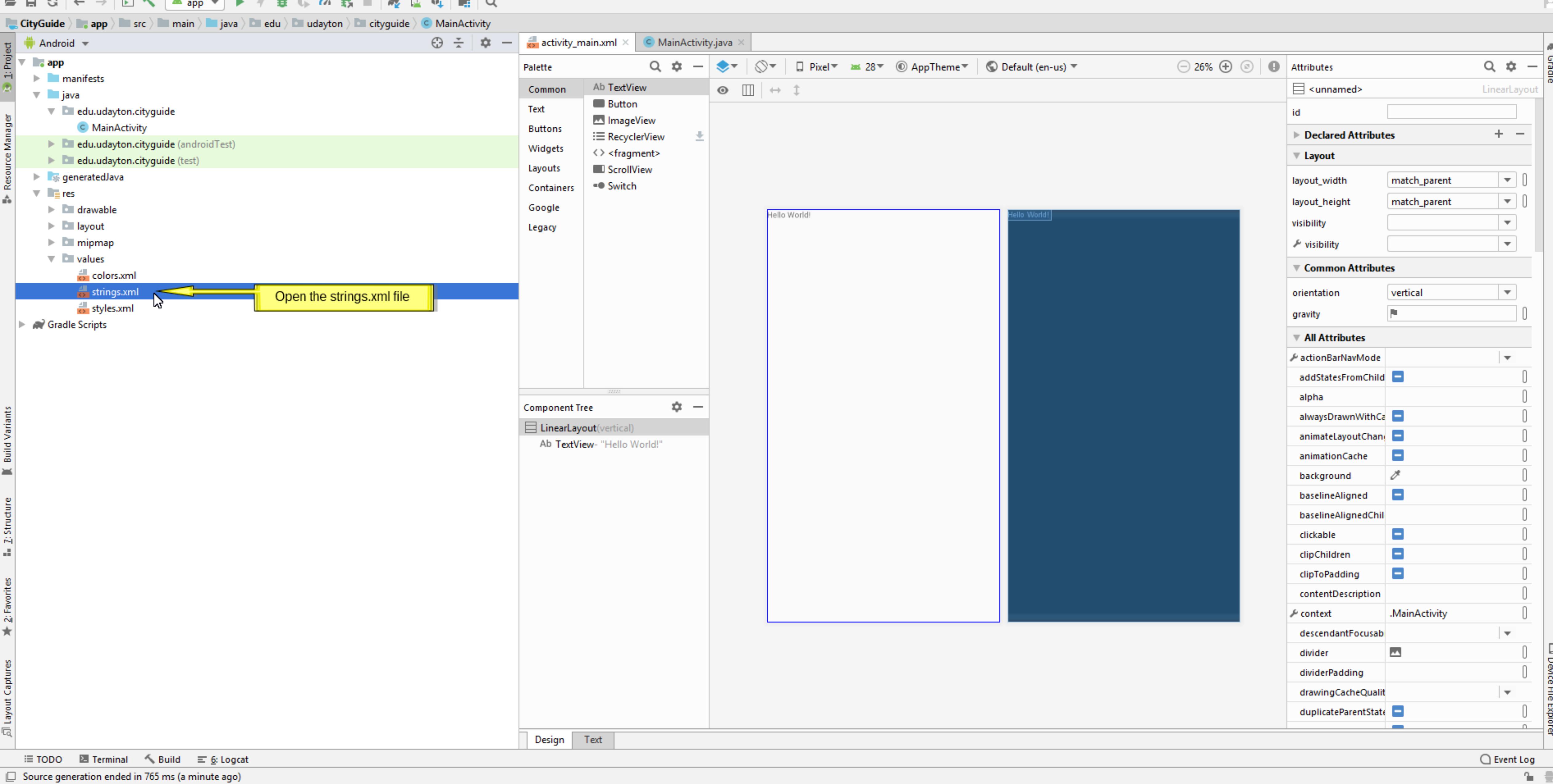
divider

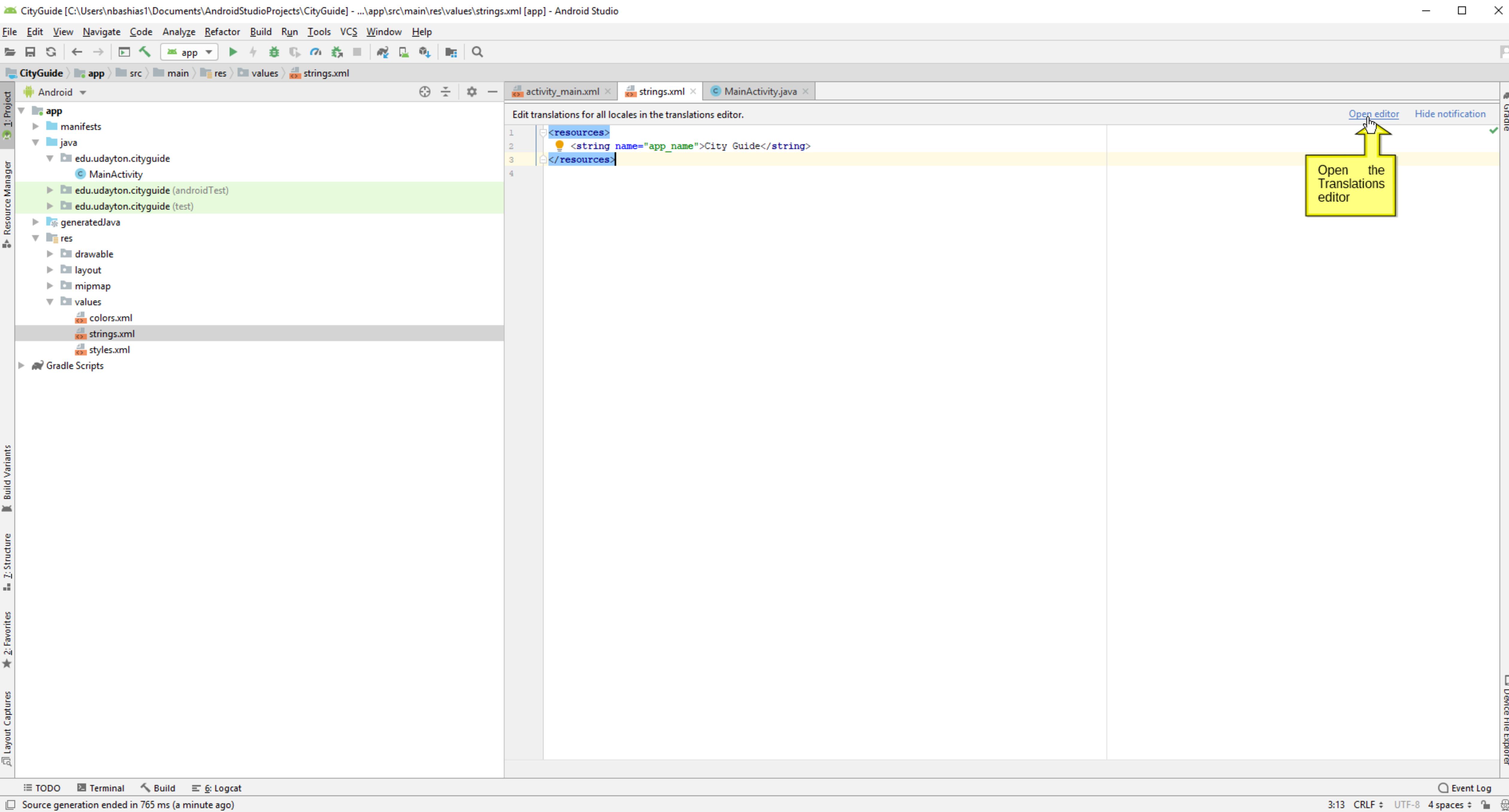
dividerPadding

drawingCacheQualit

duplicateParentState

Device File Explorer





CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - C:/Users/nbashias1/Documents/AndroidStudioProjects/CityGuide/app/Translations Editor - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app Translations Editor

1:Project

Resource Manager

Gradle Preview

Layout Variants

Build Variants

I: Structure

2: Favorites

Layout Captures

2: Logcat

Event Log

Source generation ended in 765 ms (a minute ago)

activity_main.xml strings.xml Translations Editor MainActivity.java

app_name app\src\main\res

As in prior lessons, add each of the string resources, shown in the table below, using the Add Key button

resource name resource value

resource name	resource value
txtPier	Navy Pier
txtWater	Water Tower
txtWillis	Willis Tower

As we have already done this a number of times, we won't show the details of adding each string resource

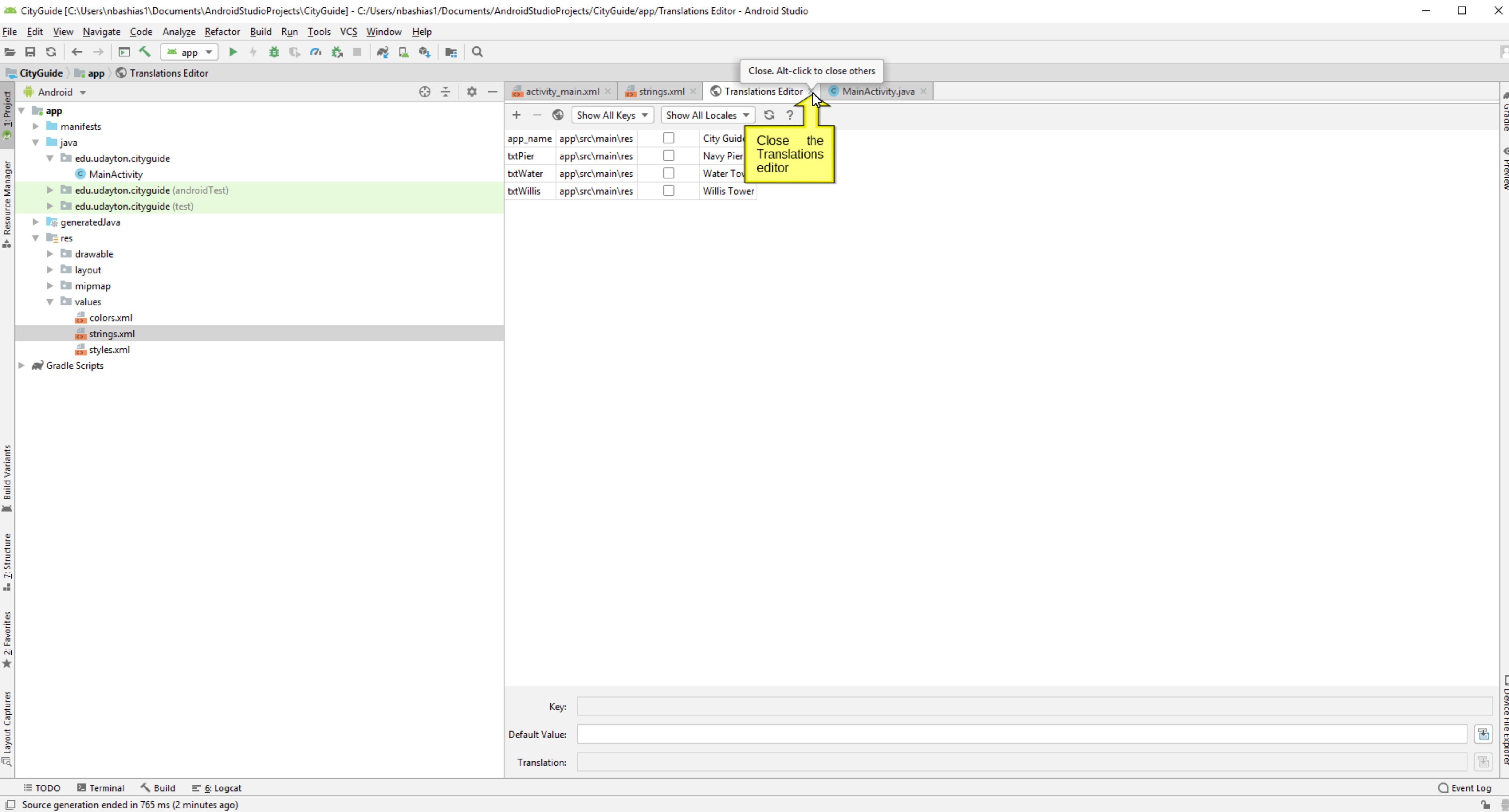
Key:

Default Value:

Translation:

Device File Explorer

The screenshot shows the Android Studio interface for a project named "CityGuide". The "Translations Editor" tab is active. In the top navigation bar, the "Translations Editor" tab is highlighted. The left sidebar shows the project structure under the "app" module, including "Manifests", "Java" (with "MainActivity" selected), "AndroidTest", "Test", "generatedJava", "res" (with "drawable", "layout", "mipmap", and "values" subfolders), and "values" (containing "colors.xml", "strings.xml", and "styles.xml"). The "strings.xml" file is currently open. A yellow callout box points to the "strings.xml" file with the text: "As in prior lessons, add each of the string resources, shown in the table below, using the Add Key button". Another yellow callout box points to the table with the text: "As we have already done this a number of times, we won't show the details of adding each string resource". The table lists three string resources: "txtPier" with value "Navy Pier", "txtWater" with value "Water Tower", and "txtWillis" with value "Willis Tower". At the bottom of the editor, there are fields for "Key", "Default Value", and "Translation", each with an associated input field and a small "Add" icon.



CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...\\app\\src\\main\\res\\values\\strings.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values strings.xml

1:Project Resource Manager

Android

app manifests java edu.udayton.cityguide MainActivity edu.udayton.cityguide (androidTest) edu.udayton.cityguide (test) generatedJava res drawable layout mipmap values colors.xml strings.xml styles.xml

Edit translations for all locales in the translations editor.

1 <resources>
2 <string name="app_name">City Guide</string>
3 <string name="txtPier">Navy Pier</string>
4 <string name="txtWater">Water Tower</string>
5 <string name="txtWillis">Willis Tower</string>
6 </resources>

Add two new lines here
(hit the Enter key twice)

Now, as we did for the Concert Tickets app, we add a string array for the names of Chicago's attractions

resources

TODO Terminal Build Logcat

Source generation ended in 765 ms (2 minutes ago)

5:51 CRLF 4 spaces

Event Log

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...\\app\\src\\main\\res\\values\\strings.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values strings.xml

Android Project Resource Manager Build Variants Favorites Layout Captures

Edit translations for all locales in the translations editor.

1 <resources>
2 <string name="app_name">City Guide</string>
3 <string name="txtPier">Navy Pier</string>
4 <string name="txtWater">Water Tower</string>
5 <string name="txtWillis">Willis Tower</string>
6
7 </resources>

Type '<str' here ...

resources

TODO Terminal Build Logcat Event Log

Source generation ended in 765 ms (2 minutes ago) 7:5 CRLF 4 spaces

```
<resources>
    <string name="app_name">City Guide</string>
    <string name="txtPier">Navy Pier</string>
    <string name="txtWater">Water Tower</string>
    <string name="txtWillis">Willis Tower</string>
</resources>
```

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...\\app\\src\\main\\res\\values\\strings.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values strings.xml

Android Project Resource Manager Build Variants Favorites Layout Captures

Edit translations for all locales in the translations editor.

```
<resources>
    <string name="app_name">City Guide</string>
    <string name="txtPier">Navy Pier</string>
    <string name="txtWater">Water Tower</string>
    <string name="txtWillis">Willis Tower</string>
```

... and select the 'string-array' tag name from the code completion menu

resources

TODO Terminal Build Logcat Event Log

Source generation ended in 765 ms (3 minutes ago) 7:9 CRLF UTF-8 4 spaces

The screenshot shows the Android Studio interface with the project 'CityGuide' open. The 'strings.xml' file is selected in the 'values' directory of the 'app' module. A code completion menu is displayed at the bottom of the editor, listing 'string' and 'string-array'. A yellow callout box with the text "... and select the 'string-array' tag name from the code completion menu" points to the 'string-array' option. A yellow arrow also points to the 'string-array' option in the menu. The status bar at the bottom indicates that source generation ended 765 ms ago, and the bottom right corner shows the current time as 7:9, encoding as CRLF, and a 4 spaces setting.

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...\\app\\src\\main\\res\\values\\strings.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values strings.xml

Android

Project

Resource Manager

Gradle Scripts

Build Variants

Layout Captures

2: Favorites

1: Structure

String Editor

Edit translations for all locales in the translations editor.

1 <resources>
2 <string name="app_name">City Guide</string>
3 <string name="txtPier">Navy Pier</string>
4 <string name="txtWater">Water Tower</string>
5 <string name="txtWillis">Willis Tower</string>
6
7 <string-array name="attraction">[
8 </resources>

Type the string-array name 'attraction' ...

resources > string-array

TODO Terminal Build Logcat

Source generation ended in 765 ms (3 minutes ago)

7:35 CRLF 4 spaces

Event Log

Device File Explorer

```
<resources>
    <string name="app_name">City Guide</string>
    <string name="txtPier">Navy Pier</string>
    <string name="txtWater">Water Tower</string>
    <string name="txtWillis">Willis Tower</string>
    <string-array name="attraction">[</resources>
```

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\values\strings.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values strings.xml

1:Project Resource Manager

Android

app manifests java edu.udayton.cityguide MainActivity edu.udayton.cityguide (androidTest) edu.udayton.cityguide (test) generatedJava res drawable layout mipmap values colors.xml strings.xml styles.xml Gradle Scripts

Edit translations for all locales in the translations editor.

1 <resources>
2 <string name="app_name">City Guide</string>
3 <string name="txtPier">Navy Pier</string>
4 <string name="txtWater">Water Tower</string>
5 <string name="txtWillis">Willis Tower</string>
6
7 <string-array name="attraction"></string-array>
8 </resources>
9

... and close the tag, followed by the Enter key

resources > string-array

TODO Terminal Build Logcat XML tag has empty body 7:37 CRLF UTF-8 4 spaces Event Log

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...\\app\\src\\main\\res\\values\\strings.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values strings.xml

1:Project

Resource Manager

Gradle

Activity_main.xml strings.xml MainActivity.java

Edit translations for all locales in the translations editor.

```
1 <resources>
2     <string name="app_name">City Guide</string>
3     <string name="txtPier">Navy Pier</string>
4     <string name="txtWater">Water Tower</string>
5     <string name="txtWillis">Willis Tower</string>
6
7     <string-array name="attraction">
8         <item>Art Institute of Chicago</item>
9         <item>Magnificent Mile</item>
10        <item>Willis Tower</item>
11        <item>Navy Pier</item>
12        <item>Water Tower</item> [ ] ← Add these item tags inside the string-array container
13    </string-array>
14 </resources>
15
```

resources > string-array

Todo Terminal Build Logcat

Source generation ended in 765 ms (5 minutes ago)

12:33 CRLF 4 spaces

Event Log

Layout Captures

2: Favorites

1: Structure

Build Variants

Device File Explorer

A yellow callout box with a black border and a black arrow points from the text "Add these item tags inside the string-array container" to the opening brace of the "item" tag at line 12, column 12. The code editor has a light gray background with syntax highlighting for XML tags and strings. The "strings.xml" file is currently selected in the tabs at the top of the code editor.

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\values\strings.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values strings.xml

Close. Alt-click to close others

Close strings.xml

Edit translations for all locales in the translations editor.

Open editor Hide notification

Gradle

Project

Resource Manager

1: Project

app

- manifests
- java
 - edu.udayton.cityguide
 - MainActivity
 - edu.udayton.cityguide (androidTest)
 - edu.udayton.cityguide (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - strings.xml
 - styles.xml

Gradle Scripts

Build Variants

I: Structure

Layout Captures

2: Favorites

resources > string-array

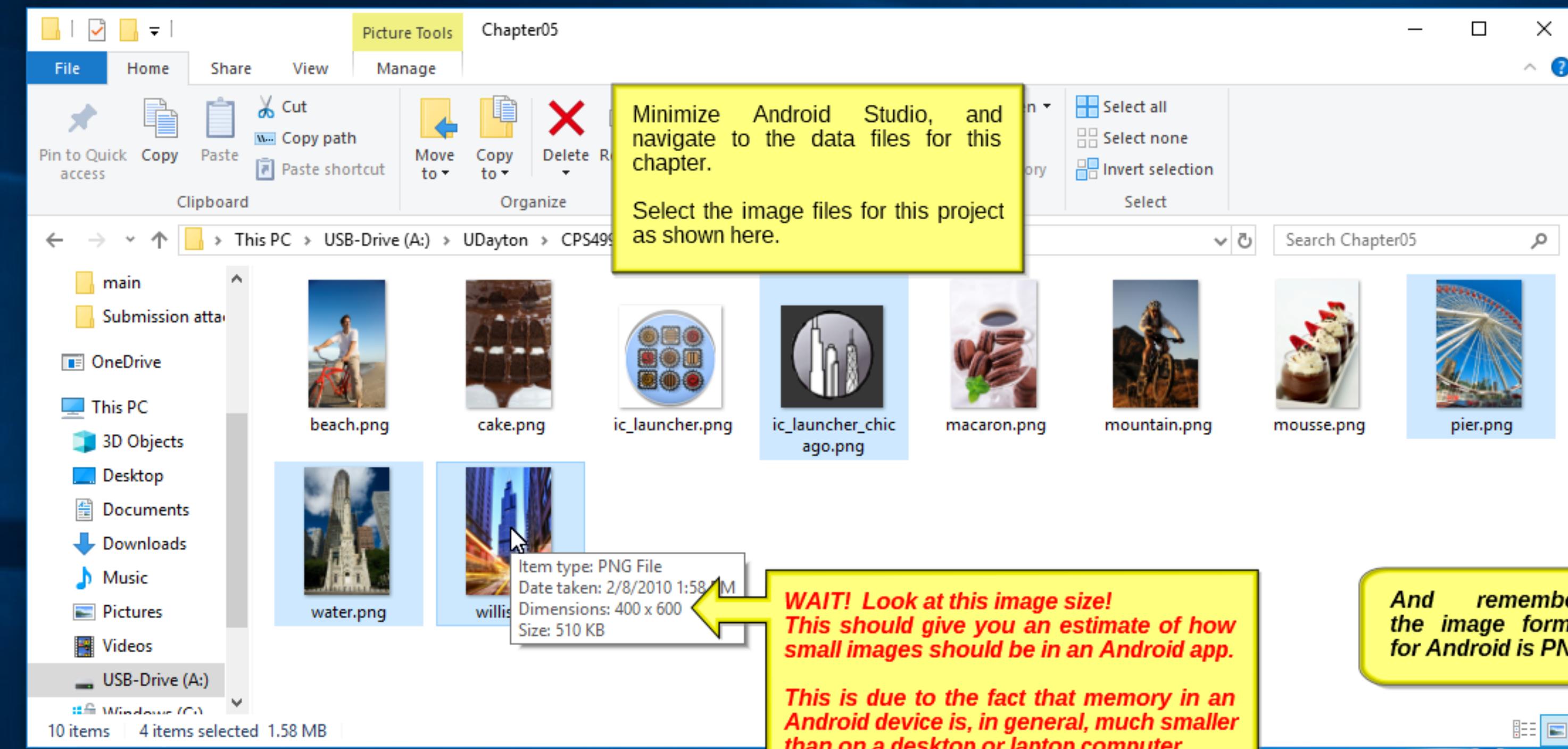
TODO Terminal Build Logcat Event Log

Source generation ended in 765 ms (5 minutes ago) 12:33 CRLF UTF-8 4 spaces

```
<resources>
    <string name="app_name">City Guide</string>
    <string name="txtPier">Navy Pier</string>
    <string name="txtWater">Water Tower</string>
    <string name="txtWillis">Willis Tower</string>

    <string-array name="attraction">
        <item>Art Institute of Chicago</item>
        <item>Magnificent Mile</item>
        <item>Willis Tower</item>
        <item>Navy Pier</item>
        <item>Water Tower</item>
    </string-array>
</resources>
```

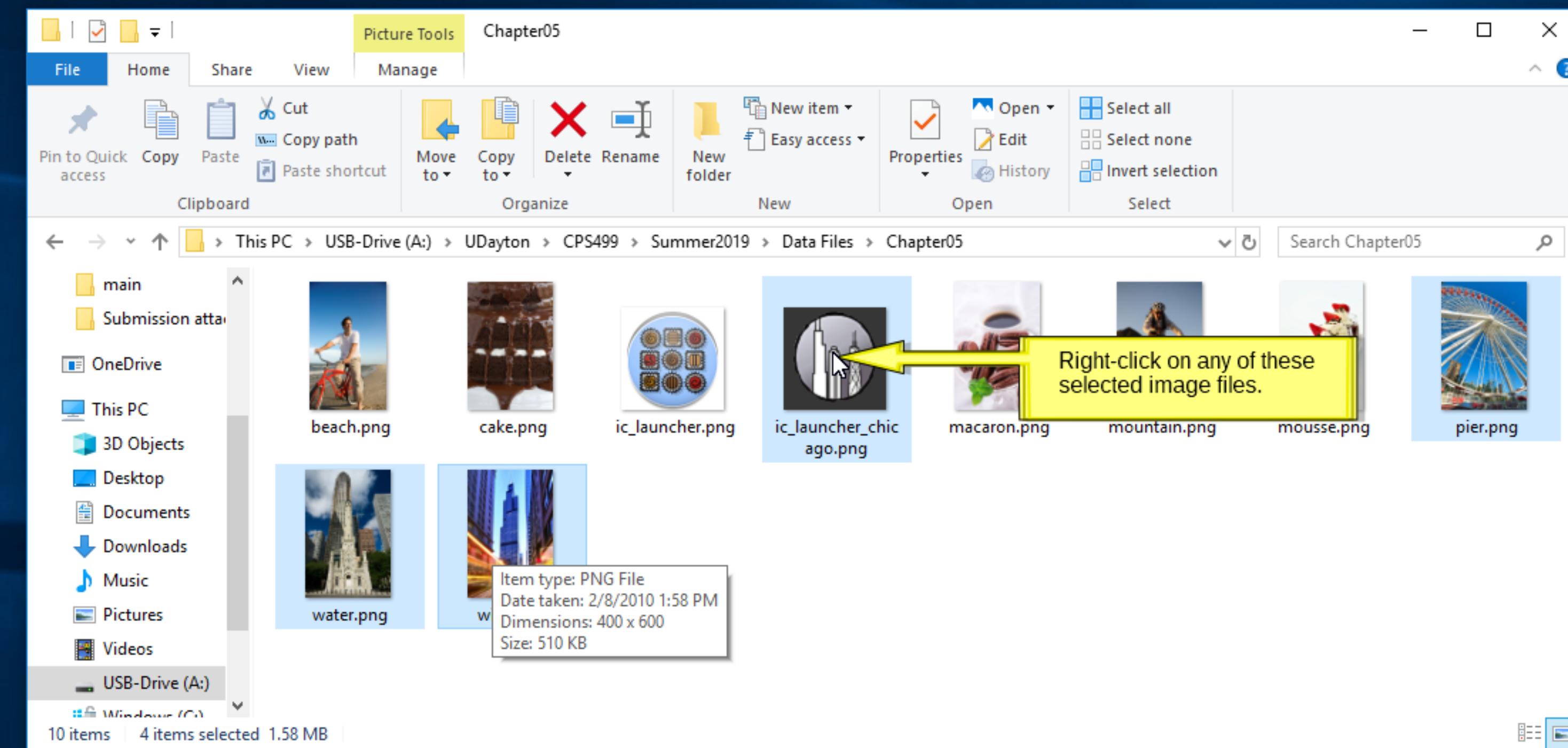
Device File Explorer

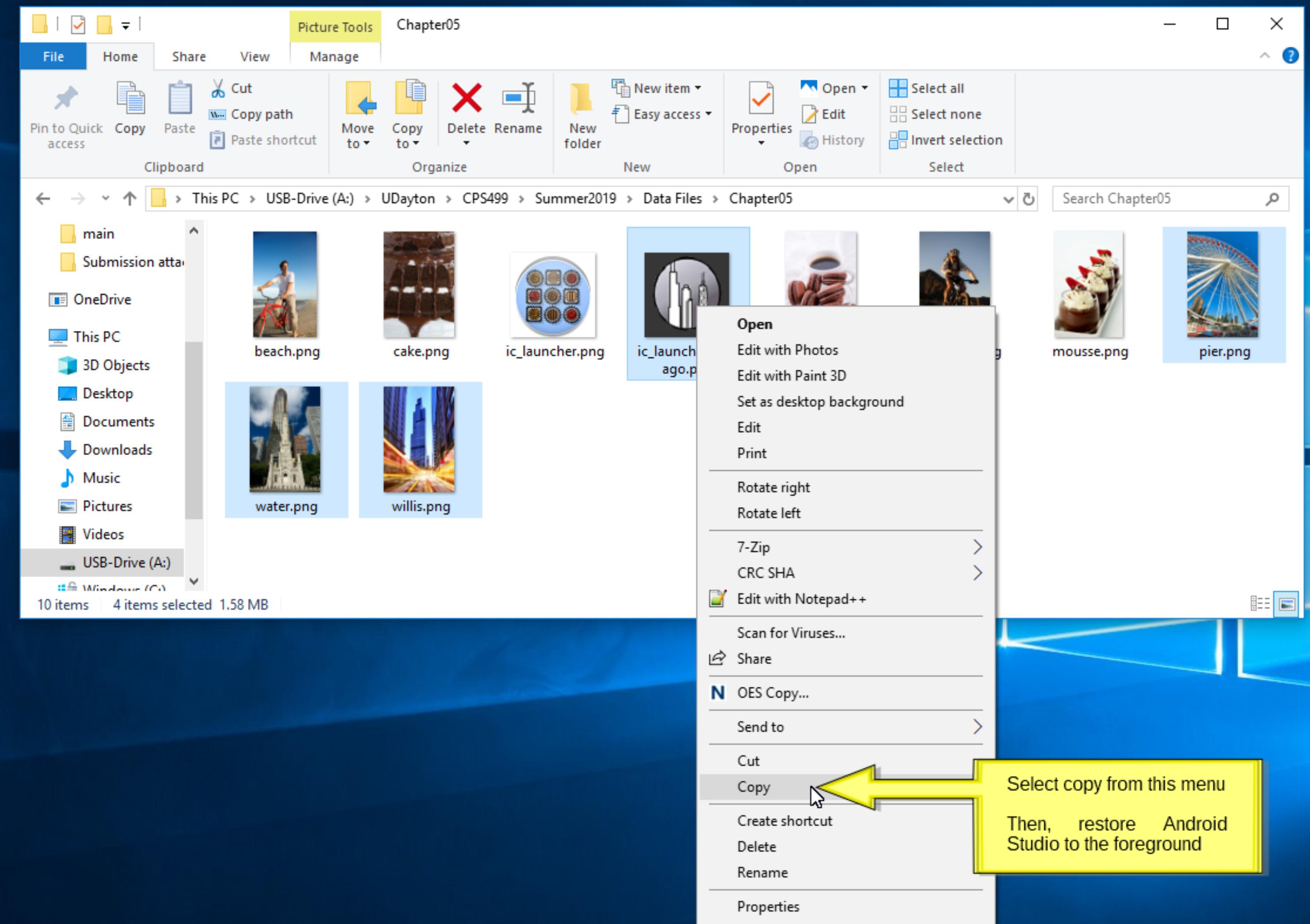


**WAIT! Look at this image size!
This should give you an estimate of how
small images should be in an Android app.**

**This is due to the fact that memory in an
Android device is, in general, much smaller
than on a desktop or laptop computer.**

**Moreover, Android device screens are
typically small, so images do not need to
be large (have a large resolution) to be
displayed.**





CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res drawable

1:Project Resource Manager

activity_main.xml MainActivity.java

Palette Attributes

Common Ab TextView

Text Button

Buttons ImageView

Widgets RecyclerView

Layouts <> <fragment>

Containers ScrollView

Google Switch

Legacy

Attributes

<unnamed> LinearLayout

id

Declared Attributes

Layout

layout_width match_parent

layout_height match_parent

visibility

visibility

Common Attributes

orientation vertical

gravity

All Attributes

actionBarNavMode

addStatesFromChild

alpha

alwaysDrawnWithCa

animateLayoutChani

animationCache

background

baselineAligned

baselineAlignedChil

clickable

clipChildren

clipToPadding

contentDescription

context .MainActivity

descendantFocusab

divider

dividerPadding

drawingCacheQualit

duplicateParentState

Design Text

Select, then right-click the app/res/drawable in the Project explorer

Component Tree

LinearLayout(vertical)

Ab TextView- "Hello World!"

Device File Explorer

TODO Terminal Build Logcat

Source generation ended in 765 ms (7 minutes ago)

Event Log

The screenshot shows the Android Studio interface for a project named "CityGuide". The project structure on the left includes "app", "manifests", "java" (containing "edu.udayton.cityguide" with "MainActivity" selected), "generatedJava", "res" (with "drawable" selected), and "values" (containing "colors.xml", "strings.xml", and "styles.xml"). A context menu is open over the "drawable" folder, with the "Paste" option highlighted. A yellow arrow points from the text "Select Paste from this menu" to the "Paste" option in the menu.

The main workspace displays the XML layout file "activity_main.xml" and the corresponding Java code "MainActivity.java". The layout consists of a single "LinearLayout" with a vertical orientation, containing a single "TextView" with the text "Hello World!". The "Attributes" panel on the right shows various properties for the LinearLayout, such as "layout_width: match_parent", "layout_height: match_parent", and "orientation: vertical".



The screenshot shows the Android Studio interface for a project named "CityGuide". The project structure on the left includes the app module with Java files (MainActivity, edu.udayton.cityguide), generated Java files, resources (res folder containing drawable), layout files, mipmap, and values folders (colors.xml, strings.xml, styles.xml). The main workspace displays the XML layout file "activity_main.xml" and the corresponding Java code "MainActivity.java". A "Choose Destination Directory" dialog is open, prompting the user to select a destination for a new drawable resource. The "Directory Structure" tab is selected, showing the "app" directory with two sub-folders: "...\\app\\src\\main\\res\\drawable" and "...\\app\\src\\main\\res\\drawable-v24". A yellow callout box with the text "Make sure the generic drawable folder is selected" points to the first folder. Another yellow callout box with the text "Then click OK" points to the "OK" button at the bottom right of the dialog. The "Attributes" panel on the right lists various properties for the selected "Ab TextView" component, such as id, layout_width, layout_height, visibility, orientation, gravity, and context.



The screenshot shows the Android Studio interface for a project named "CityGuide". The project structure on the left includes the main module "app" with Java files like `MainActivity` and resources such as `drawable`, `layout`, and `values`. The `drawable` folder is currently selected.

The main workspace displays the XML layout file `activity_main.xml` and the corresponding Java code `MainActivity.java`. The layout editor shows a single `TextView` with the text "Hello World!".

A context menu is open over the `TextView`, showing options like "Copy", "Paste", "Delete", etc. A yellow callout bubble with the text "Click OK to commit the paste" points to the "OK" button in the menu.

The "Copy" dialog box is visible, prompting the user to "Copy specified files" to the directory "C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide\app\src\main\res\drawable". The "OK" button is highlighted with a yellow arrow.

The right side of the screen shows the "Attributes" panel for the selected `TextView` component, listing various XML attributes like `id`, `layout_width`, `layout_height`, and `text`.



To customize the launcher icon, start by selecting, then right-clicking the 'app' in the Project explorer

The screenshot shows the Android Studio interface with the following details:

- Project Explorer:** On the left, the project structure is shown under the "app" module. A yellow arrow points to the "app" folder, and a yellow callout box provides instructions: "To customize the launcher icon, start by selecting, then right-clicking the 'app' in the Project explorer".
- Main Activity:** The "activity_main.xml" file is open in the center. It contains a single "TextView" with the text "Hello World!".
- Palette:** The "Common" tab is selected in the palette, showing components like TextView, Button, ImageView, RecyclerView, ScrollView, and Switch.
- Component Tree:** Shows the hierarchy: LinearLayout (vertical) containing a TextView with the text "Hello World!".
- Design View:** The main preview area shows the "Hello World!" text centered in a white box.
- Attributes Panel:** On the right, the "Attributes" panel lists numerous properties for the TextView component, such as layout_width, layout_height, visibility, orientation, gravity, and context.

Select New > Image Asset from the menu that appears

The screenshot shows the Android Studio interface with the project 'CityGuide' open. In the center, the 'activity_main.xml' layout editor displays a single 'Hello World!' TextView. On the left, the Project tool window shows the app module structure. A context menu is open over the LinearLayout containing the TextView, with a yellow callout box highlighting the 'Image Asset' option under the 'New' submenu. The right side of the screen shows the XML code for the layout and the corresponding Java code in 'MainActivity.java'. The bottom navigation bar includes tabs for TODO, Terminal, Build, Logcat, and Event Log.



CityGuide > app

Android

app
 manifests
 java
 edu.udayton.cityguide
 MainActivity
 edu.udayton.cityguide (androidTest)
 edu.udayton.cityguide (test)

Resource Manager

generatedJava

res
 drawable
 layout
 mipmap
 values
 colors.xml
 strings.xml
 styles.xml

Gradle Scripts

Build Variants

Structure

Favorites

Layout Captures

2: Favorites

Layout

Structure

Build

Favorites

Layout

Captures

2: Layout

Layout

Captures

2: Layout

Layout

Captures

2: Layout

app



Configure Image Asset

Android Studio

Icon Type:

Launcher Icons (Adaptive and Legacy)

Preview

xhdpi

 Show Safe Zone
 Show Grid

Name:

ic_launcher

Foreground Layer Background Layer Legacy

Layer Name:

ic_launcher_foreground

Source Asset

Asset Type:

 Image
 Clip Art
 Click or press Shift+Enter

Path:

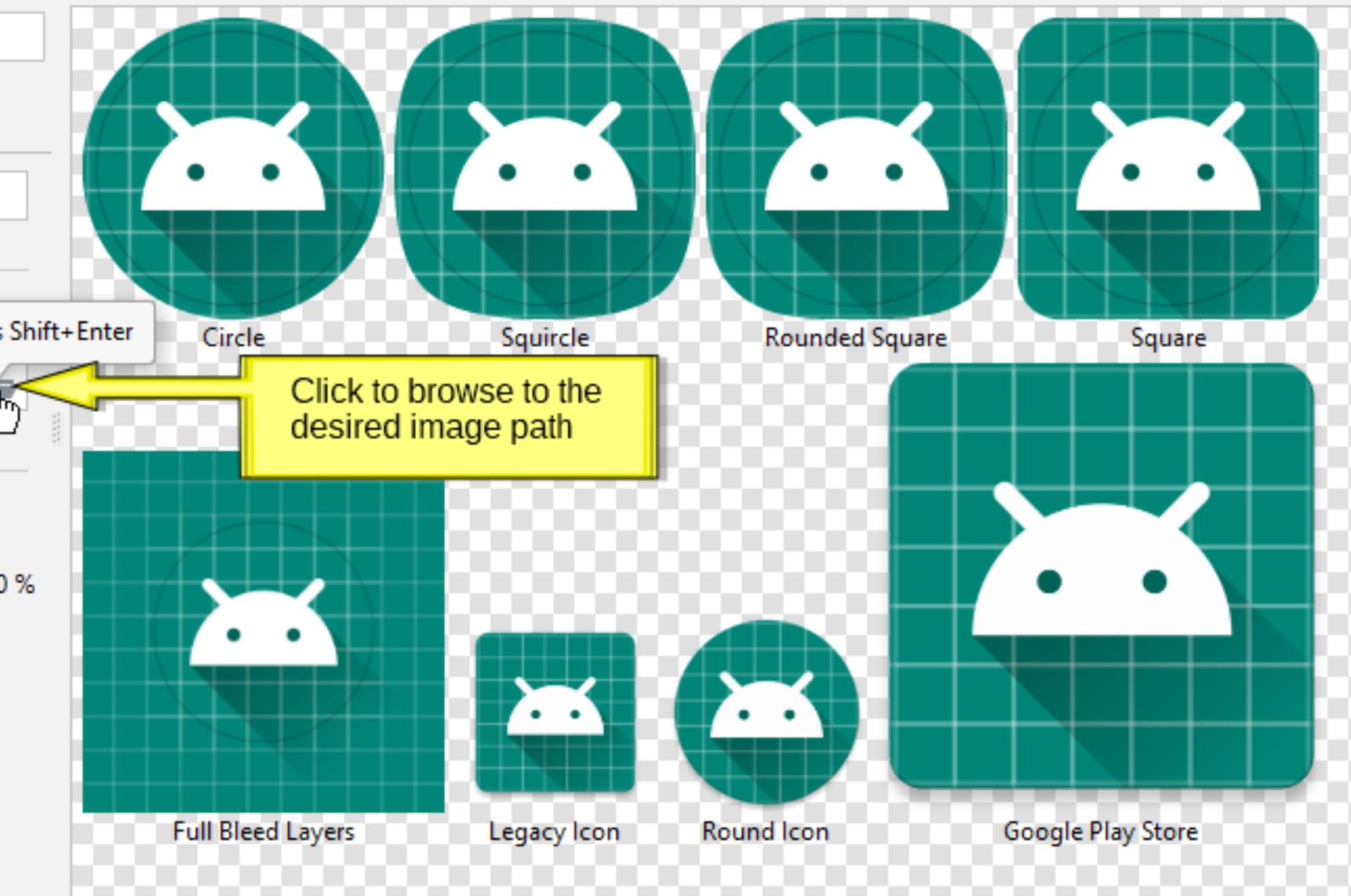
wable-v24\ic_launcher_foreground.xml

Scaling

Trim:

 Yes
 No

Resize:



An icon with the same name already exists and will be overwritten.

Previous

Next

Cancel

Finish

Help

Design

Text

Attributes	
id	
Declared Attributes	+ -
Layout	
layout_width	match_parent
layout_height	match_parent
visibility	
✓ visibility	
Common Attributes	
orientation	vertical
gravity	
All Attributes	
ActionBarNavMode	
addStatesFromChild	
alpha	
alwaysDrawnWithCache	
animateLayoutChanges	
animationCache	
background	
baselineAligned	
baselineAlignedChildIndex	
clickable	
clipChildren	
clipToPadding	
contentDescription	
context	.MainActivity
descendantFocusability	
divider	
dividerPadding	
drawingCacheQuality	
duplicateParentState	

Event Log

TODO Terminal Build Logcat

Source generation ended in 765 ms (8 minutes ago)



Configure Image Asset

Icon Type: Launcher Icons (Adaptive and Legacy)

Name: ic_launcher

Foreground Layer Background Layer Legacy

Layer Name: ic_launcher_foreground

Source Asset

Asset Type: Image Clip Art Text

Path: wable-v24\ic_launcher_foreground

Scaling

Trim: Yes No

Resize:

An icon with the same name already exists and will be overwritten.

OK Cancel Help

Select Path

\CPS499\Summer2019\Data Files\Chapter05\ic_launcher_chicago.png

beach.png cake.png ic_launcher.png ic_launcher_chicago.png macaron.png mountain.png mousse.png pier.png water.png willis.png

Chapter06 Chapter07 Chapter08 Chapter09 Chapter10 Chapter11

Show Safe Zone Show Grid

1. Navigate to the data files for Chapter 5, and select the launcher image file 'ic_launcher_chicago.png'

2. Click OK

Full Bleed Layers Legacy Icon Round Icon Google Play Store

Attributes

<unnamed> LinearLayout

id

Declared Attributes

Layout

layout_width match_parent

layout_height match_parent

visibility

visibility

Common Attributes

orientation vertical

gravity

All Attributes

actionBarNavMode

addStatesFromChild

alpha

alwaysDrawnWithCache

animateLayoutChanges

animationCache

background

baselineAligned

baselineAlignedChildIndex

clickable

clipChildren

clipToPadding

contentDescription

context .MainActivity

descendantFocusability

divider

dividerPadding

drawingCacheQuality

duplicateParentState

Device File Explorer

Design Text



CityGuide > app

Android

Project

app

- manifests
- java
 - edu.udayton.cityguide
 - MainActivity
 - edu.udayton.cityguide (androidTest)
 - edu.udayton.cityguide (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - strings.xml
 - styles.xml

Resource Manager

Gradle

Configure Image Asset

Icon Type: Launcher Icons (Adaptive and Legacy)

Name: ic_launcher

Preview: xhdpi, Show Safe Zone checked, Show Grid unchecked

Foreground Layer, Background Layer, Legacy tabs

Layer Name: ic_launcher_foreground

Source Asset

Asset Type: Image (radio button selected), Clip Art, Text

Path: file:///C:/Users/nbashias1/Downloads/Chapter05/ic_launcher_chicago.png

Scaling

Trim: No (radio button selected), Yes

Resize: 100 %

Full Bleed Layers, Legacy Icon, Round Icon, Google Play Store

An icon with the same name already exists and will be overwritten.

Click Next

Next (button highlighted with a yellow arrow)

Attributes

- <unnamed> (LinearLayout)
 - id
 - Declared Attributes
 - layout_width: match_parent
 - layout_height: match_parent
 - visibility
 - visibility
 - Layout
 - layout_width: match_parent
 - layout_height: match_parent
 - visibility
 - visibility
 - Common Attributes
 - orientation: vertical
 - gravity
 - All Attributes
 - actionBarNavMode
 - addStatesFromChild
 - alpha
 - alwaysDrawnWithCache
 - animateLayoutChanges
 - animationCache
 - background
 - baselineAligned
 - baselineAlignedChildIndex
 - clickable
 - clipChildren
 - clipToPadding
 - contentDescription
 - context: .MainActivity
 - descendantFocusability
 - divider
 - dividerPadding
 - drawingCacheQuality
 - duplicateParentState



CityGuide > app

Android

Project

Resource Manager

Build Variants

Structure

Favorites

Layout Captures

1: Project

activity_main.xml MainActivity.java

Palette

Pixel 28 AppTheme Default (en-us)

26% Attributes

Gradle

Asset Studio

Confirm Icon Path

Android Studio

Res Directory: main

Output Directories: main

File Type: PNG File

Density: nodpi

Size (dp): 512x512

Size (px): 512x512

Some existing files will be overwritten by this operation.
Files which replace existing files are marked red in the preview above.

Previous Next Cancel Finish Help

Design Text

Click Finish

The screenshot shows the Android Asset Studio "Confirm Icon Path" dialog box in Android Studio. The dialog is prompting the user to confirm the path for a new icon file. The "Res Directory" is set to "main" and the "Output File" is "ic_launcher-web.png". The "File Type" is "PNG File", "Density" is "nodpi", and the "Size" is "512x512". The preview area shows a launcher icon featuring two stylized buildings. A yellow callout bubble with the text "Click Finish" points to the blue "Finish" button at the bottom right of the dialog. The Android Studio interface is visible in the background, showing the project structure and code editor for the "MainActivity.java" file.

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values

1:Project Resource Manager

activity_main.xml MainActivity.java

Palette Attributes

Common Ab TextView

Text Button

Buttons ImageView

Widgets RecyclerView

Layouts <> <fragment>

Containers ScrollView

Google Switch

Legacy

Attributes

<unnamed> LinearLayout

id

Declared Attributes

Layout

layout_width match_parent

layout_height match_parent

visibility

visibility

Common Attributes

orientation vertical

gravity

All Attributes

actionBarNavMode

addStatesFromChild

alpha

alwaysDrawnWithCa

animateLayoutChani

animationCache

background

baselineAligned

baselineAlignedChil

clickable

clipChildren

clipToPadding

contentDescription

context .MainActivity

descendantFocusab

divider

dividerPadding

drawingCacheQualit

duplicateParentState

Device File Explorer

To add dimension resources, select and then right-click the app/res/values folder in the Project explorer

Gradle

Component Tree

LinearLayout(vertical)

Ab TextView- "Hello World!"

Design Text

TODO Terminal Build Logcat

Source generation ended in 765 ms (9 minutes ago)

Event Log

The screenshot shows the Android Studio interface with the following details:

- Project Structure:** The left sidebar shows the project structure under the "app" module. The "values" folder is highlighted with a green selection bar.
- Layout Editor:** The main area displays the "activity_main.xml" layout. It contains a single "TextView" with the text "Hello World!". The layout uses a "LinearLayout" with a vertical orientation.
- Palette:** The top right contains the "Palette" with categories like Common, Text, Buttons, Widgets, Layouts, Containers, Google, and Legacy. "Ab TextView" is currently selected.
- Attributes Panel:** On the right, the "Attributes" panel is open, showing properties for the selected view. It includes fields for "id", "Declared Attributes", "Layout", "Common Attributes", and "All Attributes".
- Component Tree:** A tree view at the bottom left shows the hierarchy: "LinearLayout(vertical)" containing "Ab TextView- 'Hello World!'".
- Tooltips:** A yellow tooltip box with a blue arrow points to the "values" folder in the project structure. It contains the text: "To add dimension resources, select and then right-click the app/res/values folder in the Project explorer".



CityGuide > app > src > main > res > values

1: Project

Resource Manager

2: Favorites

Layout Captures

3: Structure

Build Variants

New

- Kotlin File/Class
- Values resource file
- Sample Data Directory
- File
- Scratch File
- Directory
- C++ Class
- C/C++ Source File
- C/C++ Header File
- Image Asset
- Vector Asset
- module-info.java
- .editorconfig file
- Kotlin Script
- Singleton
- Gradle Kotlin DSL Build Script
- Gradle Kotlin DSL Settings
- Edit File Templates...
- AIDL
- Activity
- Android Auto
- Folder
- Fragment
- Google
- Other
- Service
- UI Component
- Wear
- Widget
- XML
- Resource Bundle

Palette

Common

Ab TextView

Text

Buttons

Widgets

Layouts

Containers

Google

Legacy

activity_main.xml

MainActivity.java

Palette

26%

Attributes

<unnamed>

LinearLayout

id

Declared Attributes

Layout

layout_width

match_parent

layout_height

match_parent

visibility

visibility

Common Attributes

orientation

vertical

gravity

All Attributes

actionBarNavMode

addStatesFromChild

alpha

alwaysDrawnWithChild

animateLayoutChanges

animationCache

background

baselineAligned

baselineAlignedChildIndex

clickable

clipChildren

clipToPadding

contentDescription

context

descendantFocusability

divider

dividerPadding

drawingCacheQuality

duplicateParentState

Event Log

Gradle

Tree

layout(vertical)

View- "Hello World!"

Text

Load/Unload Modules...

Create a new Values resource

Hello World!

Hello World!

Select New > Values resource file from the menu that appears

The screenshot shows the Android Studio interface for editing the 'values' directory of the 'activity_main.xml' layout. A context menu is open over the 'values' folder in the Project tool window, with the 'New' option selected. A yellow callout box points to the 'Values resource file' item in the submenu, which is highlighted in blue. The main workspace displays the layout editor with a single 'Hello World!' text view. The right-hand panel shows the XML code for the layout and various attributes and settings.



New Resource File

File name: dimens.xml

Source set: main

Directory name: values

Available qualifiers:

- Country Code
- Network Code
- Locale
- Layout Direction
- Smallest Screen Width
- Screen Width
- Screen Height
- Size
- Ratio
- Orientation
- UI Mode
- Night Mode
- Density

Chosen qualifiers:

Nothing to show

OK

1. Type the file name 'dimens.xml'

2. Click OK

Design Text

activity_main.xml

MainActivity.java

Attributes

<unnamed>

id

Declared Attributes

Layout

layout_width

layout_height

visibility

visibility

Common Attributes

orientation

gravity

All Attributes

actionBarNavMode

addStatesFromChild

alpha

alwaysDrawnWithCa

animateLayoutChani

animationCache

background

baselineAligned

baselineAlignedChil

clickable

clipChildren

clipToPadding

contentDescription

context

descendantFocusab

divider

dividerPadding

drawingCacheQualit

duplicateParentState

Pixel 28 AppTheme Default (en-us) 26% Attributes

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\values\dimens.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values dimens.xml

1:Project Resource Manager

Android

app manifests java edu.udayton.cityguide MainActivity edu.udayton.cityguide (androidTest) edu.udayton.cityguide (test) generatedJava res drawable layout mipmap values colors.xml dimens.xml strings.xml styles.xml Gradle Scripts

activity_main.xml dimens.xml MainActivity.java

```
<?xml version="1.0" encoding="utf-8"?>
<resources></resources>
```

Place the cursor in the resource tag ...

resources

TODO Terminal Build Logcat

XML tag has empty body 2:12 CRLF UTF-8 4 spaces

Event Log

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\values\dimens.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values dimens.xml

1:Project Resource Manager

Android

app manifests java edu.udayton.cityguide MainActivity edu.udayton.cityguide (androidTest) edu.udayton.cityguide (test) generatedJava res drawable layout mipmap values colors.xml dimens.xml strings.xml styles.xml Gradle Scripts

activity_main.xml dimens.xml MainActivity.java

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
</resources>
```

... hit the Enter key ...

resources

TODO Terminal Build Logcat Event Log

Source generation ended in 765 ms (10 minutes ago) 3:5 CRLF UTF-8 4 spaces

The screenshot shows the Android Studio interface with the project 'CityGuide' open. The 'dimens.xml' file is selected in the 'values' directory of the 'res' folder. The code editor displays the XML structure:

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
</resources>
```

A yellow callout box with the text "... hit the Enter key ..." is positioned over the cursor at the end of the final closing tag, indicating where to press Enter to complete the file.

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\values\dimens.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values dimens.xml

Android

Project

Resource Manager

Gradle Scripts

Build Variants

Layout Captures

2: Favorites

1: Structure

resources

activity_main.xml dimens.xml MainActivity.java

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <dimen name="listItemTextSize">20sp</dimen>
</resources>
```

... and add this dimension resource for the text size of each list item

TODO Terminal Build Logcat

Source generation ended in 765 ms (10 minutes ago)

3:48 CRLF UTF-8 4 spaces

Device File Explorer

The screenshot shows the Android Studio interface with the project 'CityGuide' open. The 'dimens.xml' file is selected in the 'values' directory of the 'res' folder. The code editor displays the XML content:

```
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <dimen name="listItemTextSize">20sp</dimen>
</resources>
```

A yellow callout box with a black border and a black arrow points from the right towards the line containing the <dimen> tag. Inside the callout box, the text "... and add this dimension resource for the text size of each list item" is displayed in black font.

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\values\dimens.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res values dimens.xml

Android

1:Project

Resource Manager

Gradle

activity_main.xml x dimens.xml x MainActivity.java x

Close. Alt-click to close others

Close dimens.xml

<?xml version="1.0" encoding="utf-8" ?>

<resources>

<dimen name="abc_text_size" value="20sp"/>

</resources>

resources

TODO Terminal Build Logcat

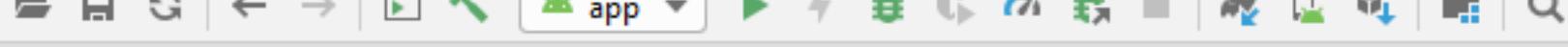
Source generation ended in 765 ms (10 minutes ago)

3:48 CRLF UTF-8 4 spaces

Event Log

The screenshot shows the Android Studio interface with the project 'CityGuide' open. The 'dimens.xml' file is currently selected and displayed in the main editor window. A yellow callout box with the text 'Close dimens.xml' is overlaid on the window, pointing towards the top right corner where the close button is located. The 'Resource Manager' tool bar is visible on the left, and the 'Gradle' tool bar is at the bottom right. The code in the editor is as follows:

```
<?xml version="1.0" encoding="utf-8" ?>
<resources>
    <dimen name="abc_text_size" value="20sp"/>
</resources>
```



Time to work on our app's layout
"Creating a Custom XML Layout for ListView" on pages 189-191 of Android Boot Camp describes doing this in the layout's text view
However, as we'll see here, we can do this in the layout's design view

Let's modify the "Hello World!" TextView so that it will display each attraction in the list.
We start by selecting the TextView in the Component Tree

Component Tree

Ab TextView- "Hello World!"

Attributes

id: Ab <unnamed>
text: Hello World!
textAppearance: @android:style/TextAp
fontFamily:
typeface:
textSize: 14sp
lineSpacingExtra:
textColor: @android:color/secondary
textStyle: B I Tr

All Attributes

alpha:
autoLink:
autoSizeMaxTextSize:
autoSizeMinTextSize:
autoSizePresetSizes:
autoSizeStepGranularity:
autoSizeTextType:
autoText:
background:
bufferType:

Design Text

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res layout activity_main.xml

1:Project

Resource Manager

2: Favorites

Layout Captures

3: Structure

Gradle Scripts

Build Variants

Component Tree

LinearLayout(vertical)

Ab travel- "Hello World!"

Common

Text

Buttons

Widgets

Layouts

Containers

Google

Legacy

Pixel 28 AppTheme Default (en-us) 26% Attributes

Change the TextView's ID

Declared Attributes

Layout

layout_width wrap_content

layout_height wrap_content

layout_weight

visibility

visibility

Common Attributes

text Hello World!

text

contentDescription

textAppearance @android:style/TextAp

fontFamily

typeface

textSize 14sp

lineSpacingExtra

textColor @android:color/secondary

textStyle B I Tr

All Attributes

alpha

autoLink

autoSizeMaxTextSize

autoSizeMinTextSize

autoSizePresetSizes

autoSizeStepGranularity

autoSizeTextType

autoText

background

bufferType

Design Text

TODO Terminal Build Logcat Event Log

Source generation ended in 765 ms (11 minutes ago)

The screenshot shows the Android Studio IDE with the project 'CityGuide' open. The main focus is the 'activity_main.xml' layout editor. In the center, there's a preview of a dark blue screen with two white 'Hello World!' text views. To the right is the 'Attributes' panel for a selected TextView, which has the ID 'travel'. A yellow callout box highlights this ID field with the text 'Change the TextView's ID'. The 'Component Tree' panel shows a 'LinearLayout' containing an 'Ab travel' view. The 'Palette' panel lists various UI components under 'Common'. The 'Project' and 'Resource Manager' toolbars are on the left, and the 'File' menu is at the top.

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res layout activity_main.xml

1:Project Resource Manager

Android

app manifests java edu.udayton.cityguide MainActivity edu.udayton.cityguide (androidTest) edu.udayton.cityguide (test) generatedJava res drawable layout mipmap values colors.xml dimens.xml strings.xml styles.xml Gradle Scripts

2: Favorites 2: Layout Captures

activity_main.xml MainActivity.java

Palette Attributes

Common Ab TextView

Text Button

Buttons ImageView

Widgets RecyclerView

Layouts <> <fragment>

Containers ScrollView

Google Switch

Legacy

Component Tree

LinearLayout(vertical)

Ab travel- "Hello World!"

Pixel 28 AppTheme Default (en-us) 26% Attributes

Ab travel

id travel

Declared Attributes

Layout

fill_parent

wrap_content

visibility

Common Attributes

text Hello World!

text

contentDescription

textAppearance @android:style/TextAp

fontFamily

typeface

textSize 14sp

lineSpacingExtra

textColor @android:color/secondary

textStyle B I Tr

All Attributes

alpha

autoLink

autoSizeMaxTextSize

autoSizeMinTextSize

autoSizePresetSizes

autoSizeStepGranularity

autoSizeTextType

autoText

background

bufferType

Change the layout_width to 'fill_parent'
This is not in the pulldown menu of attribute values, so we need to type it in the value field

Design Text

TODO Terminal Build Logcat Event Log

Source generation ended in 765 ms (11 minutes ago)

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res layout activity_main.xml

1:Project

Resource Manager

2: Favorites

Layout Captures

3: Structure

Gradle Scripts

Build Variants

Component Tree

Ab travel- "Hello World!"

Common Attributes

text: travel

All Attributes

alpha

autoLink

autoSizeMaxTextSize

autoSizeMinTextSize

autoSizePresetSizes

autoSizeStepGranularity

autoSizeTextType

autoText

background

bufferType

Attributes

Ab travel

id: travel

Declared Attributes

Layout

Common Attributes

text: travel

textAppearance: @android:style/TextAppearance

fontFamily

typeface

textSize: 14sp

lineSpacingExtra

textColor: @android:color/secondary

textStyle: B I Tr

Common Attributes

text: travel

textAppearance: @android:style/TextAppearance

fontFamily

typeface

textSize: 14sp

lineSpacingExtra

textColor: @android:color/secondary

textStyle: B I Tr

Component Tree

Ab travel- "Hello World!"

Design Text

TODO Terminal Build Logcat Event Log

Source generation ended in 765 ms (12 minutes ago)

Change the text to 'travel'

CityGuide app src main res layout activity_main.xml

1:Project

Resource Manager

2:Structure

Layout Captures

2: Favorites

Layout Captures

1:Project

Resource Manager

2:Structure

Layout Captures

2: Favorites

Layout Captures

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

city_main.xml x MainActivity.java x

Palette

Common Ab TextView

Text Button

Buttons ImageView

Widgets RecyclerView

Layouts <> <fragment>

Containers ScrollView

Google Switch

Legacy

Component Tree

LinearLayout(vertical)

Ab travel- "travel"

Attributes

Ab travel

id travel

Declared Attributes

Layout

layout_width fill_parent

layout_height wrap_content

layout_weight

visibility

visibility

Attributes

travel

contentDescription

textAppearance @android:style/TextAp

fontFamily

typeface

textSize 14sp

lineSpacingExtra

textColor @android:color/secondary

textStyle B I Tr

All Attributes

alpha

autoLink

autoSizeMaxTextSize

autoSizeMinTextSize

autoSizePresetSizes

autoSizeStepGranularity

autoSizeTextType

autoText

background

bufferType

Design Text

Oops! That should be a string resource so ... we'll just have to extract it!

Switch to the layout's text view

Source generation ended in 765 ms (12 minutes ago)



1:Project

Resource Manager

Build Variants

Favorites

Layout Captures

TODO Terminal Build Logcat

Hardcoded string "travel", should use '@string' resource

14:26 CRLF UTF-8 4 spaces

Android

1:Project

app

- manifests
- java
 - edu.udayton.cityguide
 - MainActivity
 - edu.udayton.cityguide (androidTest)
 - edu.udayton.cityguide (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Resource Manager

Gradle Scripts

activity_main.xml x MainActivity.java x

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/travel"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="travel"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</LinearLayout>
```

Click anywhere
in the "travel"
string literal

Preview

Palette

Pixel 28 AppTheme

travel

Design Text

LinearLayout > TextView

Event Log

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res layout activity_main.xml

1 Project

Resource Manager

1: Project

app manifests java edu.udayton.cityguide MainActivity edu.udayton.cityguide (androidTest) edu.udayton.cityguide (test) generatedJava res drawable layout mipmap values colors.xml dimens.xml strings.xml styles.xml Gradle Scripts

activity_main.xml x MainActivity.java x Preview Pixel 28 AppTheme 34% Gradient

1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3 xmlns:app="http://schemas.android.com/apk/res-auto"
4 xmlns:tools="http://schemas.android.com/tools"
5 android:layout_width="match_parent"
6 android:layout_height="match_parent"
7 android:orientation="vertical"
8 tools:context=".MainActivity">
9
10 <TextView
11 android:id="@+id/travel"
12 android:layout_width="fill_parent"
13 android:layout_height="wrap_content"
14 android:text="travel"
15 ...
16 Hardcoded string "travel", should use @string resource more... (Ctrl+F1)
17 app:layout_constraintRight_toRightOf="parent"
18 app:layout_constraintTop_toTopOf="parent" />
19 </Layout>

Click on the yellow lightbulb ...

LinearLayout > TextView

Design Text

Hardcoded string "travel", should use `@string` resource

14:26 CRLF UTF-8 4 spaces

Device File Explorer

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res layout activity_main.xml

1: Project Resource Manager

activity_main.xml x MainActivity.java x Preview

1 <?xml version="1.0" encoding="utf-8"?>
2 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
3 xmlns:app="http://schemas.android.com/apk/res-auto"
4 xmlns:tools="http://schemas.android.com/tools"
5 android:layout_width="match_parent"
6 android:layout_height="match_parent"
7 android:orientation="vertical"
8 tools:context=".MainActivity">
9
10 <TextView
11 android:id="@+id/travel"
12 android:layout_width="fill_parent"
13 android:layout_height="wrap_content"
14 android:text="travel"/>
15
16
17
18
19
20

Palette Pixel 28 AppTheme

travel

Extract string resource ... and select 'Extract string resource'
Suppress: Add tools:ignore="HardcodedText" attribute
Extract string resource
Override Resource in Other Configuration...
Rearrange tag attributes
Remove attribute
Inject language or reference

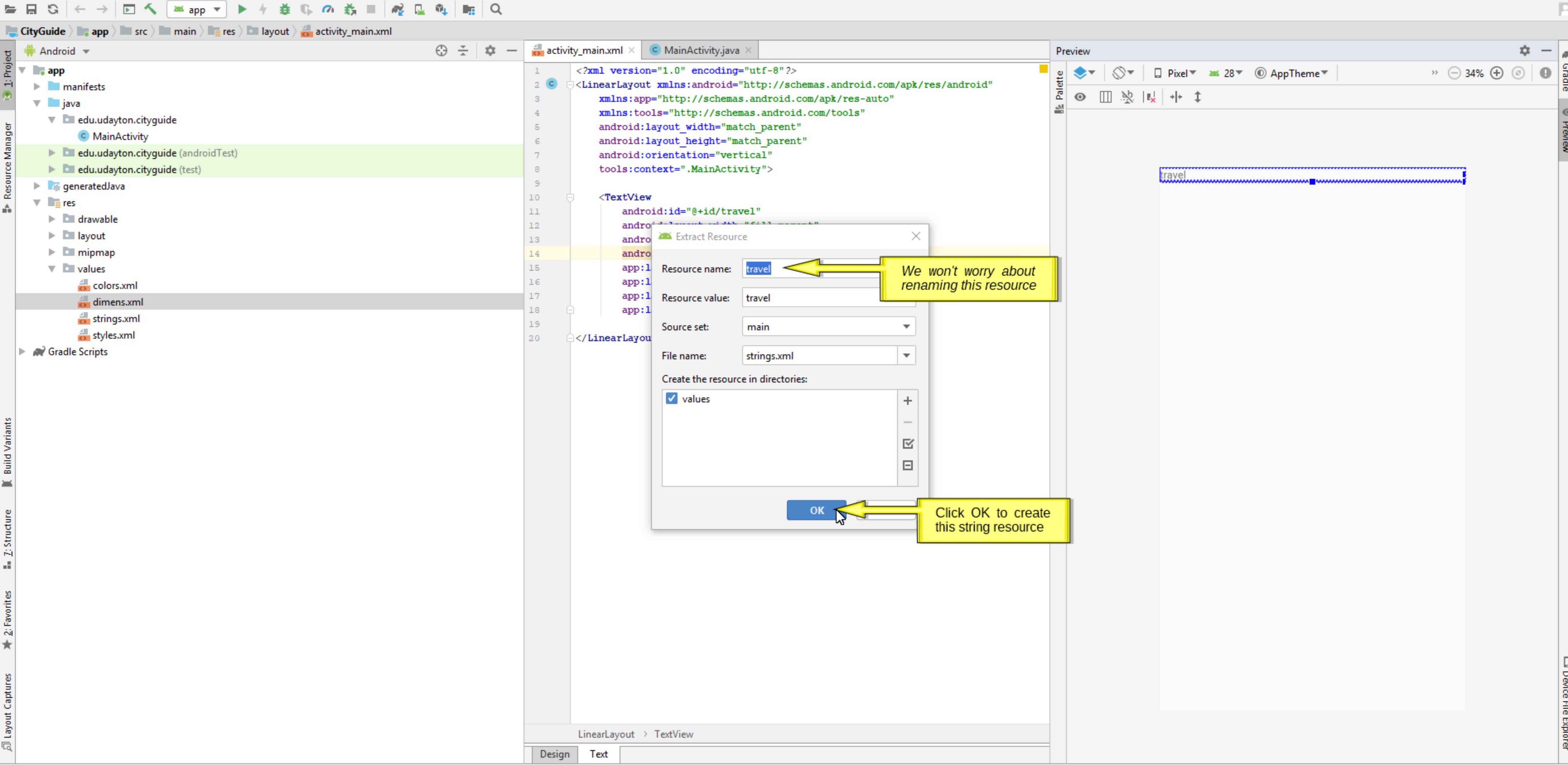
Remember that if the lightbulb fails to appear, you can use the Alt+Enter key combination to display this menu

LinearLayout > TextView

Design Text

TODO Terminal Build Logcat Event Log

Hardcoded string "travel", should use '@string' resource 14:26 CRLF UTF-8 4 spaces





Android

1:Project

app

- manifests
- java
 - edu.udayton.cityguide
 - MainActivity
 - edu.udayton.cityguide (androidTest)
 - edu.udayton.cityguide (test)
- generatedJava
- res
 - drawable
 - layout
 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

activity_main.xml x MainActivity.java x

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/travel"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="@string/travel"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</LinearLayout>
```

Preview

Palette

Pixel 28 AppTheme

travel

Switch back to the layout's design view

LinearLayout > TextView

Design Text

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res layout activity_main.xml

1:Project

Resource Manager

2:Structure

Layout Captures

2:Favorites

Layout Captures

1:Project

app

- manifests
- java
 - edu.udayton.cityguide
 - MainActivity
 - edu.udayton.cityguide (androidTest)
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 - mipmap
 - values
 - colors.xml
 - dimens.xml
 - strings.xml
 - styles.xml

Gradle Scripts

Build Variants

Component Tree

activity_main.xml

MainActivity.java

Palette

Common

- Ab TextView
- Button
- ImageView
- RecyclerView
- <> <fragment>
- ScrollView
- Switch

Text

Buttons

Widgets

Layouts

Containers

Google

Legacy

Pixel 28 AppTheme Default (en-us) 26% Attributes

Ab travel

id travel

Declared Attributes

Layout

layout_width fill_parent

layout_height wrap_content

layout_weight

visibility

visibility

Common Attributes

text @string/travel

text

contentDescription

textAppearance @android:style/TextAp

fontFamily

typeface

textSize 14sp

lineSpacingExtra

textColor @android:color/secondary

textStyle B

All Attributes

alpha

autoLink

autoSizeMaxTextSize

autoSizeMinTextSize

autoSizePresetSizes

autoSizeStepGranul

autoSizeTextType

autoText

background

bufferType

Use the Resource manager to change the text size

Design Text

TODO Terminal Build Logcat Event Log

Source generation ended in 765 ms (12 minutes ago)



1:Project

Resource Manager

Build Variants

Favorites

Layout Captures

2: Favorites

TODO Terminal Build Logcat

Source generation ended in 765 ms (12 minutes ago)

Gradle

Device File Explorer

The screenshot shows the Android Studio interface with the project 'CityGuide' open. The 'activity_main.xml' file is selected in the top navigation bar. A floating 'Resources' dialog box is displayed over the main workspace. The dialog lists various resources from the 'values/dimens.xml' file, with 'listItemTextSize' selected and highlighted in blue. The right side of the screen shows the 'Attributes' panel for a 'TextView' component, specifically for the 'travel' resource. The 'text' attribute is set to '@string/travel'. Two yellow callout boxes with arrows provide instructions: one pointing to the 'listItemTextSize' entry in the resources list, and another pointing to the 'OK' button at the bottom of the dialog.

1. Select the listItemTextSize dimension resource

2. Click OK

OK Cancel

Activity Main XML

MainActivity.java

Attributes

Ab travel

id travel

Declared Attributes

Layout

Common Attributes

All Attributes

text @string/travel

textAppearance @android:style/TextAp

fontFamily

typeface

textSize 14sp

lineSpacingExtra

textColor @android:color/secondar

textStyle B I Tr

alpha

autoLink

autoSizeMaxTextSize

autoSizeMinTextSize

autoSizePresetSizes

autoSizeStepGranul

autoSizeTextType

autoText

background

bufferType

26%

Resources

Add new resource

Name: listItemTextSize

Project	
listItemTextSize	20sp
android	
app_icon_size	48dip
dialog_min_width_major	55%
dialog_min_width_minor	80%
notification_large_icon_height	64dp
notification_large_icon_width	64dp
thumbnail_height	360dp
thumbnail_width	360dp
Theme attributes	
actionBarSize	
dialogCornerRadius	
dialogPreferredPadding	
listPreferredItemPaddingLeft	
listPreferredItemPaddingRight	

Design Text

Event Log

CityGuide [C:\Users\nbashias1\Documents\AndroidStudioProjects\CityGuide] - ...app\src\main\res\layout\activity_main.xml [app] - Android Studio

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

CityGuide app src main res layout activity_main.xml

1:Project

Resource Manager

2: Favorites

Layout Captures

3: Structure

Gradle Scripts

Build Variants

4: Favorites

2: Layout Captures

5: Structure

Activity Main XML

Main Activity Java

Palette

Common Ab TextView

Text Button

Buttons ImageView

Widgets RecyclerView

Layouts <> <fragment>

Containers ScrollView

Google Switch

Legacy

Component Tree

LinearLayout(vertical)

Ab travel- "@string/travel"

Attributes

Ab travel

autoSizeMinTextSize

autoSizePresetSizes

autoSizeStepGranularity

autoSizeTextType

autoText

background

bufferType

capitalize

clickable

contentDescription

cursorVisible

digits

drawableBottom

drawableEnd

drawableLeft

drawablePadding

drawableRight

drawableStart

drawableTop

drawingCache

duplicateParent

editable

editorExtras

ellipsize

ems

enabled

fadeScrollbars

fadingEdge

fadingEdgeLength

filterTouchesWhenObscured

firstBaselineToTopHeight

fitsSystemWindows

Use the Resource manager to set the drawableLeft attribute

This is the image that will be displayed on the left of the text for each item in the list

Design Text

TODO Terminal Build Logcat Event Log

Source generation ended in 765 ms (13 minutes ago)



Resources

Add new resource

Drawable

Color

Name: ic_launcher_chicago v24 PNG

ic_launcher

ic_launcher_background

ic_launcher_chicago

ic_launcher_foreground

pier

water

willis

@drawable/ic_launcher_chicago
⇒ ic_launcher_chicago.png

android

Theme attributes

1. Select the ic_launcher_chicago drawable resource

We'll use the launcher image file ('ic_launcher_chicago') for each list item

2. Click OK

OK Cancel

Attributes
Ab travel
autoSizeMinTextSize
autoSizePresetSizes
autoSizeStepGranularity
autoSizeTextType
autoText
background
bufferType
capitalize
clickable
contentDescription
cursorVisible
digits
drawableBottom
drawableEnd
drawableLeft
drawablePadding
drawableRight
drawableStart
drawableTop
drawingCacheQuality
duplicateParentState
editable
editorExtras
ellipsize
ems
enabled
fadeScrollbars
fadingEdge
fadingEdgeLength
filterTouchesWhenObscured
firstBaselineToTopHeight
fitsSystemWindows

The screenshot shows the Android Studio interface for a project named "CityGuide". The project structure on the left includes the app module with Java and resources, and an androidTest and test module. The main focus is the "activity_main.xml" layout editor. The layout consists of a white fragment containing a circular icon with a city skyline and the word "travel" below it. The fragment is positioned above a dark blue scrollable area. A yellow callout box with a black border contains the text:

*This concludes Part 1 of Lesson 5.
In Part 2 of this lesson, we code the app so that clicking on either of the first 2 items in the list shows the associated web site in the device's web browser.*

The top right corner of the scrollable area has a small red warning icon. The bottom right corner of the scrollable area has a small green checkmark icon. The bottom right corner of the entire screen has a small orange exclamation mark icon.

The palette on the right lists various UI components: Common (Text, Buttons, Widgets, Layouts, Containers), Google, and Legacy. The "Text" section is currently selected, showing options like Button, ImageView, RecyclerView, <fragment>, ScrollView, and Switch. The "Attributes" panel on the far right lists numerous properties for a TextView component, such as autoSizeMaxTextSize, autoSizeMinTextSize, autoSizePresetSizes, autoSizeStepGranularity, autoSizeTextType, autoText, background, bufferType, capitalize, clickable, contentDescription, cursorVisible, digits, drawableBottom, drawableEnd, drawableLeft, drawablePadding, drawableRight, drawableStart, drawableTop, drawingCacheQuality, duplicateParentState, editable, editorExtras, ellipsize, ems, enabled, fadeScrollbars, fadingEdge, fadingEdgeLength, filterTouchesWhenObscured, and firstBaselineToTopHeight.