Android Development for Beginners

This is a Google’s course for Android Development for Beginners delivered by Udacity through the named course here: <https://classroom.udacity.com/courses/ud837>

**Important Terms/Concepts:**

1. **Views:**
2. **TextView**
3. **ImageView**
4. **Button**

Common Android View Cheat Sheet: <https://drive.google.com/file/d/0B5XIkMkayHgRMVljUVIyZzNmQUU/view>

1. **DP: D**ensity-**I**ndependent **P**ixel:

The screen of an **Android device** is made of rows and columns of glowing dots called **pixels**. Devices can range in **screen density**, which means how many pixels per inch (or dots per inch) are on the screen. For example, an mdpi (or medium density device) has 160 dots per inch, while an xxhdpi (extra extra high density device) has 480 dots per inch.

If we specify the size of views in pixel values, then views would appear very small on the higher density devices, where there are many pixels packed into a small area. If a button is too small, then it would be hard for the user to touch it.

To achieve a consistent physical size of Views, across devices of different screen densities, we use a unit of measure called a [**density-independent pixel**](http://developer.android.com/guide/topics/resources/more-resources.html#Dimension) (**dp** or **dip**, pronounced “dee pee” **or** “dip”). 1 dp is equal to 1 pixel on an mdpi device. 1 dp is equal to 3 pixels on an xxhdpi device, and so on [for other devices](http://developer.android.com/design/style/devices-displays.html). Per Material design guidelines, any touch target on the screen should be [at least 48dp wide by 48dp tall](http://www.google.com/design/spec/layout/metrics-keylines.html#metrics-keylines-touch-target-size). That way, a button in an app on one device will be approximately the same physical size as that button in the same app running on a device with a different screen density.

Android devices will automatically handle the conversion from dp to pixel values, so developers just have to use dp values when specifying measurements in their layouts. For example, dp’s can be used to specify the width and height of a View, shown in the illustration.

1. **SP: S**cale-**I**ndependent **P**ixel:

A **scale-independent pixel** (sp) is a unit of length for specifying the size of a font of type. Its length depends on the user’s preference for font size, set in the Settings app of the Android device.

To respect the user’s preferences, you should specify all font sizes in scale-independent pixels. All other measurements should be given in **device-independent pixels** (dp’s).

1. **Wrap\_content: (“wrap\_content”):**

A **View** is a rectangular area on the screen, usually containing some content. For example, a **TextView**contains text, an **ImageView** contains an image, and a special type of View called a **ViewGroup**contains smaller Views inside of it.

We can specify the width or height of a View as a given distance. Alternatively, we can specify it as the special value **wrap\_content** to shrink-wrap the View around its content. To prevent the View from wrapping itself too tightly, we can also specify a certain amount of **padding**.

**Important Links:**

1. **Android Vocabulary Glossary:** <https://developers.google.com/android/for-all/vocab-words/?utm_source=udacity&utm_medium=course&utm_campaign=android_basics>
2. **Android XML Visualizer(XMLV):** <http://labs.udacity.com/android-visualizer/#/android/text-view>
3. **Coomon Android View Cheat Sheet:** <https://drive.google.com/file/d/0B5XIkMkayHgRMVljUVIyZzNmQUU/view>
4. **Android Studio home Page:** <https://developer.android.com/studio/index.html>
5. **How to take a screen shot:** <https://developer.android.com/studio/debug/index.html#screenCap>
6. **Material Design Typography Guideline:** <https://material.io/guidelines/layout/metrics-keylines.html#metrics-keylines-touch-target-size>
7. **Material Design Color:** <https://material.io/guidelines/style/color.html#color-color-tool>
8. **Android Developer main Page**: <https://developer.android.com/index.html>
9. **Material Design Home Page:** <https://material.io/guidelines/material-design/introduction.html>

**My Quiz Solutions:**

1. <http://labs.udacity.com/android-visualizer/#/android/text-view>
2. <http://labs.udacity.com/android-visualizer/#/android/xml-syntax-errors>

**GitHub Code Sample:** <https://gist.github.com/anonymous/8bb1c5d7e4d3e434fb10>

1. <http://labs.udacity.com/android-visualizer/#/android/wrap-content>
2. <http://labs.udacity.com/android-visualizer/#/android/text-size>
3. <http://labs.udacity.com/android-visualizer/#/android/text-color>
4. <http://labs.udacity.com/android-visualizer/#/android/simple-imageview>
5. <http://labs.udacity.com/android-visualizer/#/android/other-text-view-attributes>