Xamarin.Android Fundamentals: Layouts

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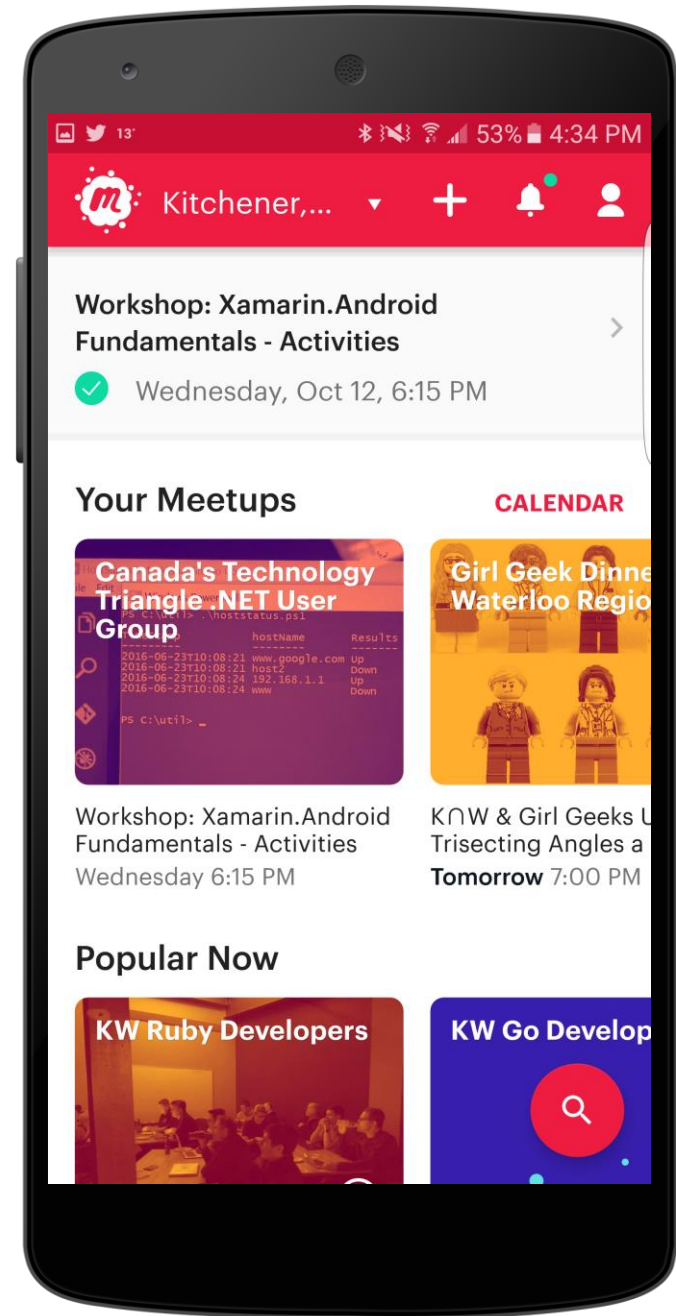
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What is a Layout?

- Defines the visual structure for a user interface

- Comprised of one or more View or ViewGroup objects

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Defining a Layout

- Declare elements in XML

  o file must be saved with an .axml extension

  o saved to Resources/layout directory

- Instantiate elements at runtime

- Able to also manipulate UI elements at runtime

Advantages of Defining in XML

- Separation of presentation layer from code

- Define layouts for different screen orientations, device sizes, and languages

- Easier to visualize layout element structure

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Layout Containers

- LinearLayout

- RelativeLayout

- FrameLayout

- GridLayout

- AbsoluteLayout

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When dealing with collections, use...

- RecyclerView

- GridView

- ListView

Input Controls

- Buttons

  o Button, ImageButton, RadioButton, ToggleButton

- Text Fields

  o TextView, EditText, AutoCompleteTextView

- Check boxes

- Spinners

- Pickers

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Attributes

- Visual aspects of UI elements can be set through attributes

  o For example: spacing, color, alignment, sizing

- All elements must specify a width and a height

  o Valid values include: match_parent, wrap_content, fixed size value (ex: 24dp)

```xml
<TextView
    android:layout_width="match_parent"
    android:layout_height="match_parent" />
```

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Application Resources

- Define styles, colors, dimensions, strings, etc which you can use throughout the application

- Stored in XML format and saved to the Resources/values directory

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Let's explore the XML Layout!

Using a Layout

- Within OnCreate() in the Activity, Set the Activity's content view to load the layout when the Activity is launched during the OnCreate method

- Use FindViewById<T> to obtain a handle to the UI element in the layout in code

  o Useful when you need to programmatically access UI elements in the Activity

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Let's take a look at the Activity!

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Workshop: Creating a Layout (45 mins)

Workshop – 3 parts (45 mins)

- Clone or download as zip:
  https://github.com/llalonde/XamarinWorkshops.git

- Follow the steps in Workshop.pdf

Additional Resources

- Android Developer Resources: https://developer.android.com/

  - **Layouts:** ~/guide/topics/ui/declaring-layout.html

  - **UI Overview:** ~/guide/topics/ui/overview.html

  - **Input Controls:** ~/guide/topics/ui/controls.html

  - **App Resources:** ~/guide/topics/resources/overview.html

Thanks!

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