

Android App Development

Agenda

- Understand Android Studio
- Learn how to create and build projects
 - Understand XML
 - Manifest
 - Main Activity
 - Understand how to build application and deploy on emulator
- Learn how to import other projects
 - Import Rich Application and learn how to understand external projects
 - Change the text from the MainActivity
 - Understand how to identify each tag (from ID)
 - Build
 - Change ICON
 - Generate APK file and install on Android Device.

What is Android Studio?

- It is a tool that is use to create Native Android Applications seamlessly.
- This studio itself is sufficient enough to build a production-ready application.
- Android Studio
 - Design UI of the application
 - Add ICONs, and assets to the products easily.
 - In-build emulators, that can help deploy application such that you can know how the application look like in the phone itself.
 - And yes, you can write Java code, based on the need.

Note: Ensure to have the Android Studio installed and running.

Java Basics

- Variables
- Data Types
- Methods/Functions (With arguments)

Variables

Variables in general are a object that can be used to store information for certain amount of time. We can specify the information stored in the variable should be of what type. For example

```
int age = 10;
```

Datatypes

As seen in the above example that we used integer as a type of the object named age. Such that if we try to assign, `int age = "ten";` Java Compiler will throw error.

Primitive and Reference

Primitive Data type includes

- int Int is a common number type that is used in Java that is used to store values
 - double Double is a another number type that is used in Java to store decimal values
 - boolean Boolean is a (true or false) type that can be used if the value can only be either true or false.
 - char
 - long
 - float
 - short
 - byte
- All the other data types are less common, and will be introduced only if required.

Function / Method

- A method is a set of code which is referred to by name and can be called at any point in a program simply by utilizing the method's name.
- When a method is invoked (Called) a request is made to perform some action, such as setting a value, printing statements, returning an answer e.t.c.

```
Int number = Console.readInt("Enter a number"); //returns a value
```

The method name is `readInt` which is defined in the class "Console". Since the method is defined in the class `Console`, the word `Console` becomes the calling object. This particular method returns an integer value which is assigned to an integer variable named `number`.

Invoke a method by writing down the calling object followed by a dot, then the name of the method, and finally a set of parentheses that may (or may not) have information for the method.

Android Studio

Create a new project

Create new project

Add a name

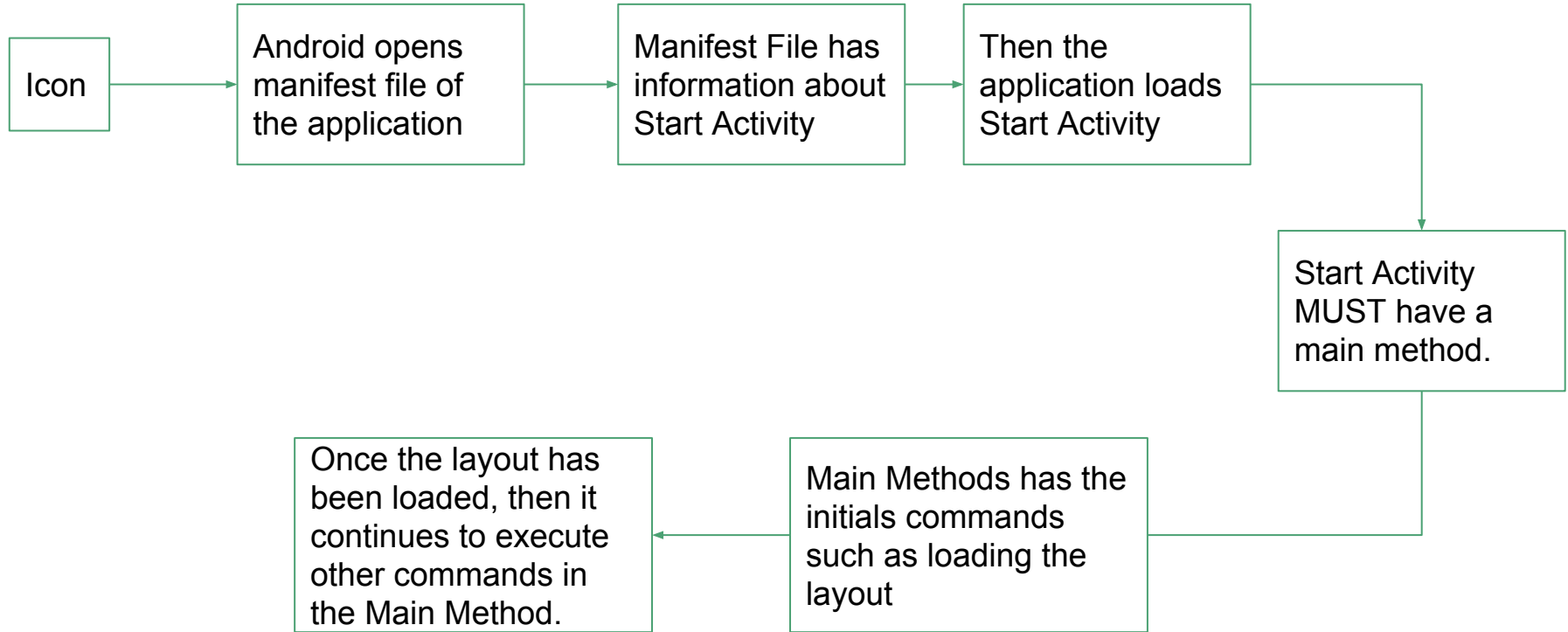
Select the platform “Phone and Tablet” but yes you can create application for gear and tv

Select Empty Activity template.

Let the activity name be “Main Activity”

Wait, until you the project is ready to visualise and see it.

Understanding files in Android Project



Android Resources

- Images
- Icons
- Files
- Values

In android we can put different “sizes” of images/icons such that depending on the user software, Android automatically use the right resource for the user.

Images

Usually from the designer, we (as a software developer) get different sizes images. Some sizes might fit note 8 and some might not fit galaxy S4. To avoid such problems, Android allows to upload different sized images.

Icons

App Icon: If you take a look under res folder, there is a mipmap folder that contains app icons of different sizes. So that when user download the application, the right icon is displayed.

- It removes problem of having pixelated icons.

Values

- Colors
- Strings
- styles

This is used to store colors. Basically the hex so that we don't have to remember all the hexs.

This is used to store values. And the most common is the app name. We might use app name in many files. If we change our app name, we can directly change in strings file and the change will be reflected on the screen directly.

This is mainly used for theming purposes.

Run it!

Click on the green play icon from toolbar

- Create New Virtual Device
- Select Nexus 5x, or any similiar device
- Download O (release)
 - Click “Finish” once the download has been finished
- Select Next
- Name the device or keep as suggested
- Finish
- Wait for a while, until the set has been successfully finished.