



Android Lecture #2



What are we doing today?

- Creating our first application!
- Talk about our project structure
- Adding Activities

Inviting A Friend Over

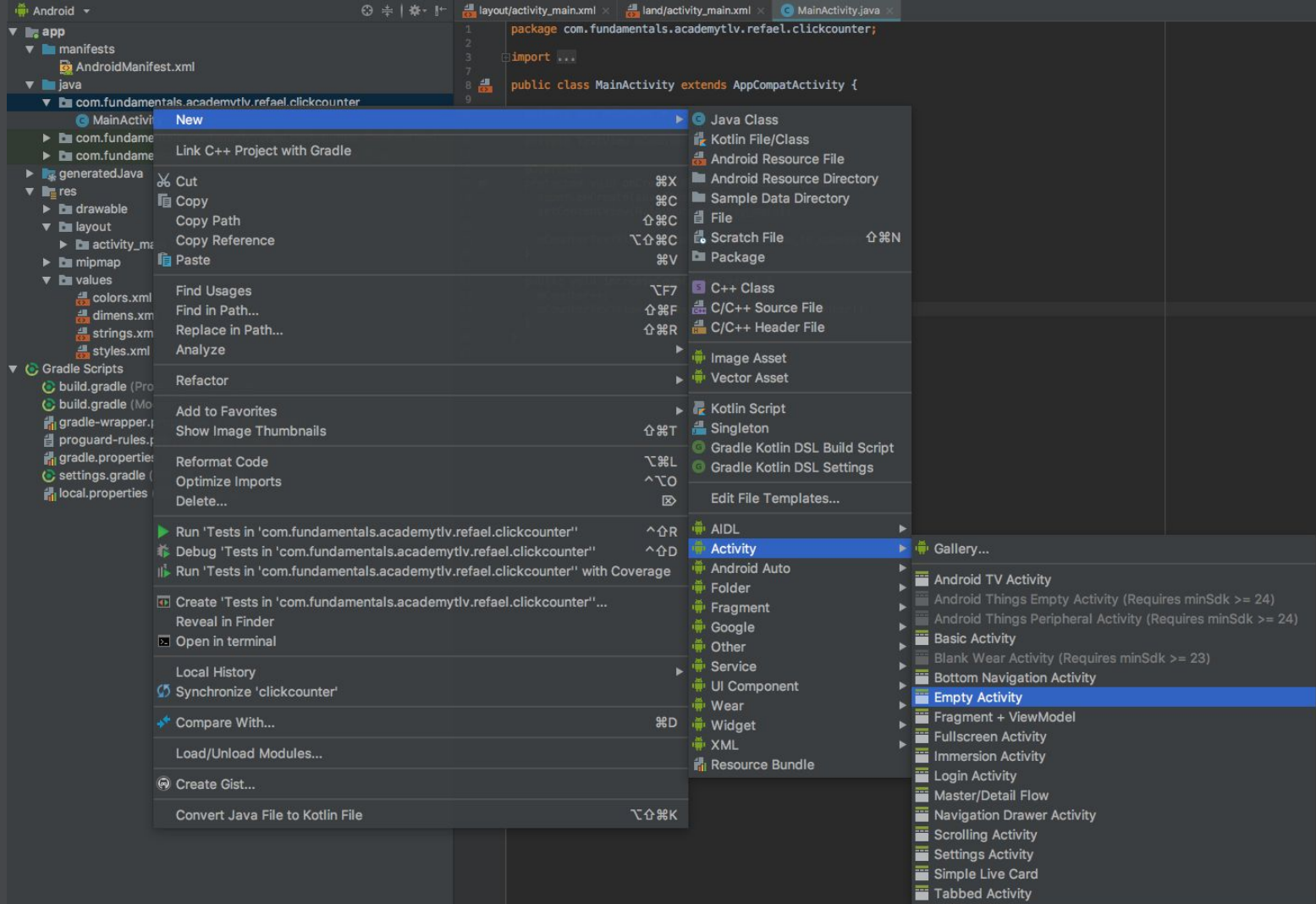
Adding another activity when our counter pass 10



Creating another Activity

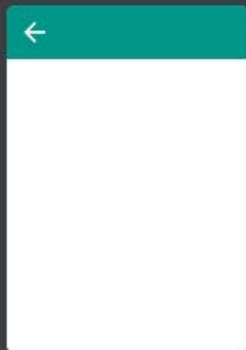
Using Android Studio, use **Alt + Insert** -or- **Command + N** to create something new. This shortcut is also context aware.

Let's create a new activity,
and call it `SecondActivity`.





Creates a new empty activity



Activity Name:

SecondActivity

☒ Generate Layout File

Layout Name:

activity_second

☐ Launcher Activity

Package name:

il.co.ravtech.clickcounter

Source Language:

Java

Target Source Set:

main

The name of the activity class to create

Previous

Next

Cancel

Finish

≡ How to open SecondActivity

You can't open an activity on your own -
Android opens an activity for you.

This is done by using an **Intent**.



☰ Intents have...

Component Name

used for Explicit Intents

Action

Data (and Type)

used for Implicit Intents

Category

Extras

used to tell things to the recipient

Flags

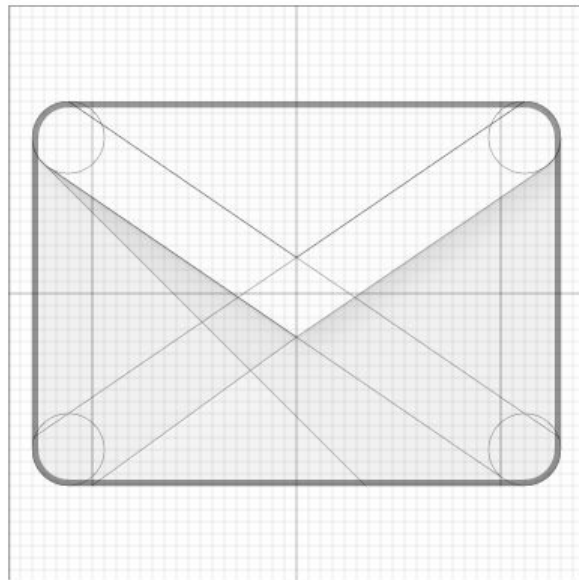
used to tell things to the messenger



≡ Intent Filters

Used to advertise what intents your app can handle

We've already seen MainActivity's intent filter in the manifest



Read more: <http://developer.android.com/guide/components/intents-filters.html#Receiving>



Add our functionality

```
public void increaseCount(View view) {  
    mCounter++;
```

```
    if (mCounter > 10) {  
        navigateToSecondActivity();  
        return;  
    }
```

```
    mCounterTextView.setText(String.valueOf(mCounter));  
}
```



So now, when we reach 10..

```
private void navigateToSecondActivity() {  
    Intent openSecondActivity = new Intent(this, SecondActivity.class);  
    startActivity(openSecondActivity);  
}
```

≡ Any Questions?



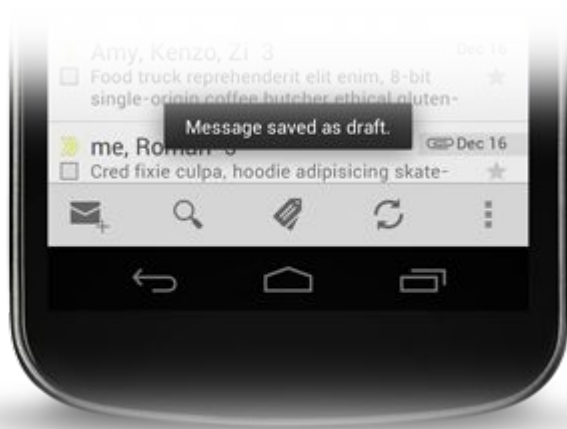


Pass arguments to next activity

```
private static final String EXTRA_DATA_COUNTER = "EDC";

private void navigateToSecondActivity() {
    Intent openSecondActivity = new Intent(this, SecondActivity.class);
    openSecondActivity.putExtra(EXTRA_DATA_COUNTER, mCounter);
    startActivity(openSecondActivity);
}
```

Toasts



Simple feedback about an operation in a transient small popup.

The activity remains interactive -
whereas the toast itself isn't.

Make a Toast

```
Toast.makeText(this, "Hello Indeed!", Toast.LENGTH_LONG)  
                .show();
```



Most common bug with Toasts:

DON'T FORGET TO CALL `show()` !

Did the data pass to SecondActivity?

See that the data passed

```
int counterFromIntent = getIntent().getIntExtra(EXTRA_DATA_COUNTER, -1);

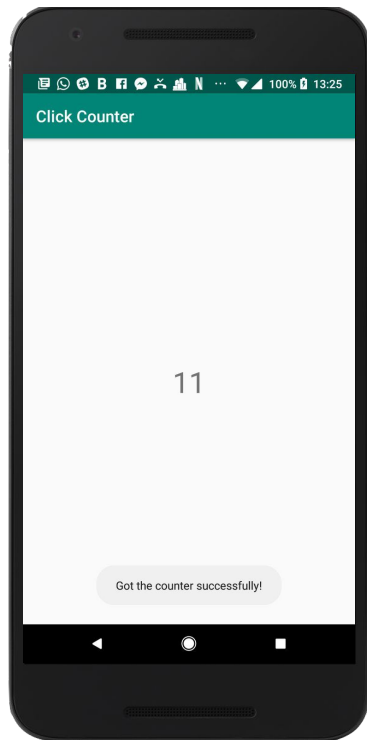
if (counterFromIntent != -1) {
    Toast.makeText(this, "Got the counter successfully!", Toast.LENGTH_SHORT).show();
}
```



Present on second activity

```
mCounterTextView = findViewById(R.id.as_tv_counter);  
mCounterTextView.setText(String.valueOf(counterFromIntent));
```

☰ OMG, It looks great!



Best Practice: Start Activity Statically

MainActivity:

```
private void navigateToSecondActivity() {  
    SecondActivity.start(this, mCounter);  
}
```



Best Practice: Start Activity Statically

SecondActivity:

```
public static void start(Context context, int counter) {  
    Intent openSecondActivity = new Intent(context, SecondActivity.class);  
    openSecondActivity.putExtra(EXTRA_DATA_COUNTER, counter);  
    context.startActivity(openSecondActivity);  
}
```

≡ Any Questions?



Wait...How does Android start your app?

The first activity we've created has an intent filter to catch the launcher's intent, and start the right activity.



Our Manifest

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.fundamentals.academytlv.refael.clickcounter">
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:theme="@style/AppTheme">

        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>

    </application>
</manifest>
```

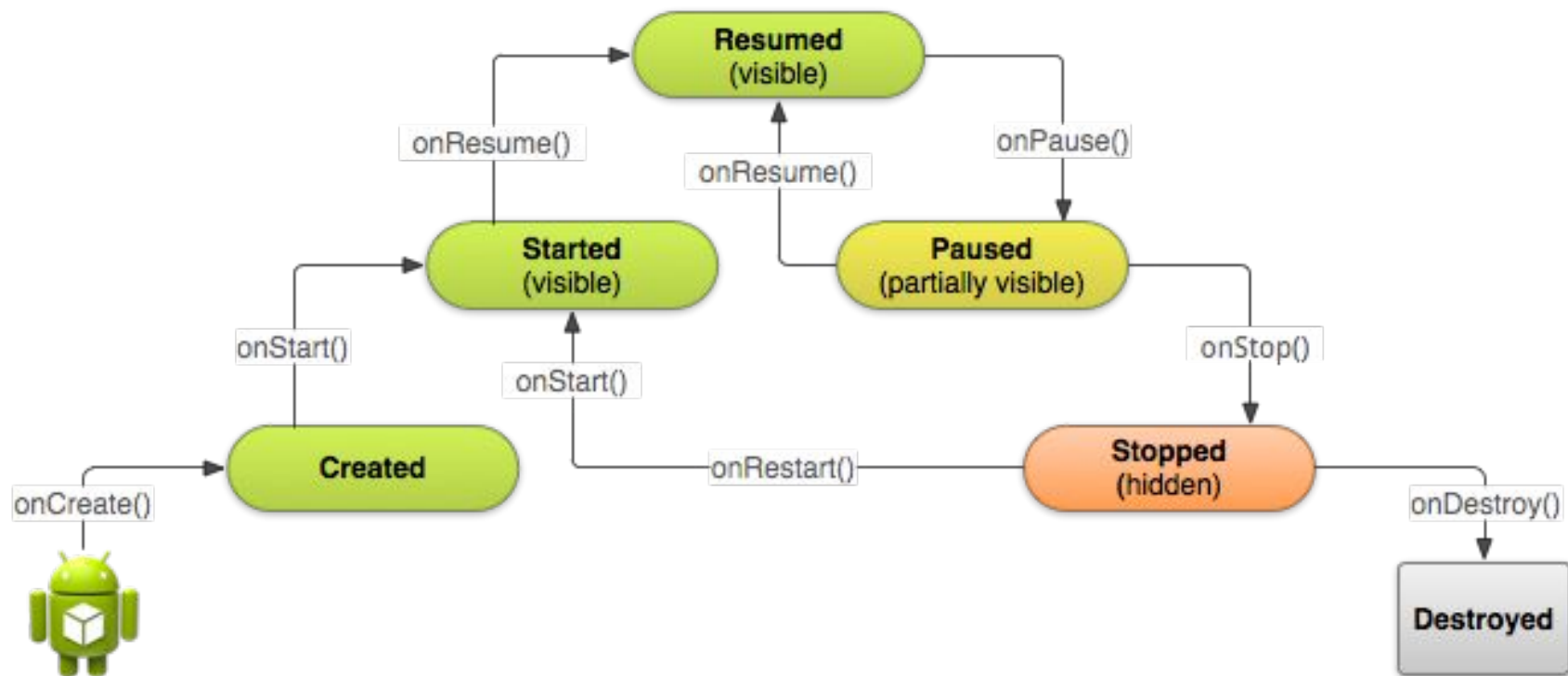

≡ Any Questions?



Next Topic: **Activity Lifecycle**



≡ The Activity Lifecycle



The Activity Lifecycle

When activity lifecycle state changes,
Android lets us know with callback.

Remember that we rotated the device?

Overriding SaveInstanceState

@Override

```
protected void onSaveInstanceState(Bundle savedInstanceState) {  
    savedInstanceState.putInt(STATE_COUNTER, mCounter);  
    super.onSaveInstanceState(savedInstanceState);  
}
```

@Override

```
protected void onRestoreInstanceState(Bundle savedInstanceState) {  
    if (savedInstanceState != null) {  
        mCounter = savedInstanceState.getInt(STATE_COUNTER);  
        updateCounterValue(mCounter);  
    }  
    super.onRestoreInstanceState(savedInstanceState);  
}
```

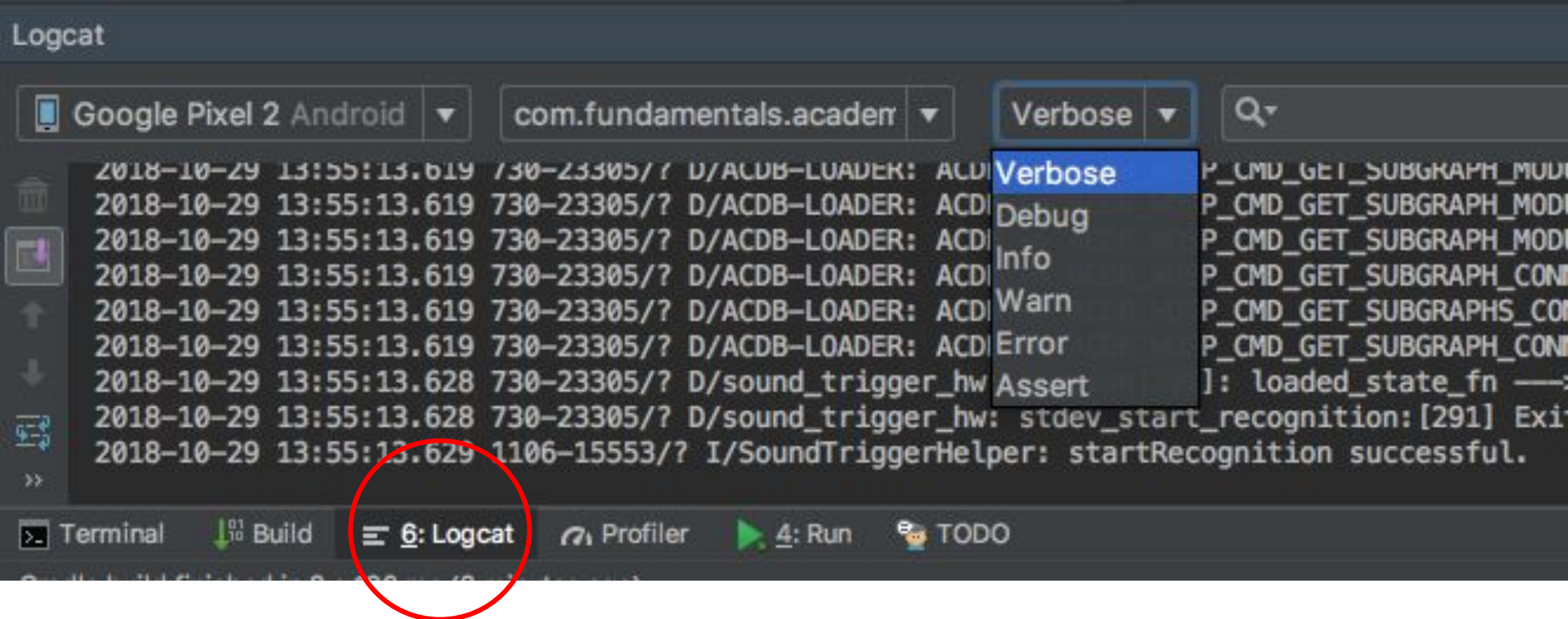
Logging

Logging

- Definition:

A **logfile** is a file that records either events that occur in an operating system or other software runs.

≡ Logging - Where can I see it?



≡ Logging

Logcat

Google Pixel 2 Android ▼ com.fundamentals.acader ▼ Verbose ▼ 🔍

```
2018-10-29 13:53:38.075 1106-1133/? I/ActivityManager: Override config changes=480 {1.0 425mcc2mnc [en_US,iw_IL] ldltr sw411dp w411dp}
2018-10-29 13:53:38.094 25732-25732/com.fundamentals.academytlv.refael.clickcounter E/onSaveInstanceState:: THIS JUST HAPPENED!
2018-10-29 13:53:38.135 1106-1133/? W/Looper: Dispatch took 138ms on android.ui, h=Handler (com.android.server.policy.PhoneWindowManager)
2018-10-29 13:53:38.196 25732-25732/com.fundamentals.academytlv.refael.clickcounter E/onRestoreInstanceState:: THIS JUST HAPPENED!
2018-10-29 13:53:38.271 25732-25739/com.fundamentals.academytlv.refael.clickcounter I/zygote64: Do partial code cache collection, code=53
2018-10-29 13:53:38.271 25732-25739/com.fundamentals.academytlv.refael.clickcounter I/zygote64: After code cache collection, code=53
2018-10-29 13:53:38.271 25732-25739/com.fundamentals.academytlv.refael.clickcounter I/zygote64: Increasing code cache capacity to 25
2018-10-29 13:53:38.308 22733-22733/? W/StaticLayout: maxLineHeight should not be -1. maxLines:1 lineCount:1
2018-10-29 13:53:38.309 22733-22733/? I/chatty: uid=10010(com.android.systemui) identical 3 lines
```

Terminal Build 6: Logcat Profiler 4: Run TODO

Logging - levels

- verbose [DELETE on production] (.v)
- Debug (.d)
- Info (.i)
- Warn (.w)
- Error (.e)

≡ Any Questions?



Recap

- What's an Activity?
- What's the Manifest?
- How does Android know which Activity to open?
- Which class helps us to open another Activity?
- How do we pass data between Activities?
- Which types of Intents do we have? What's the difference?
- Which resource types do we have?