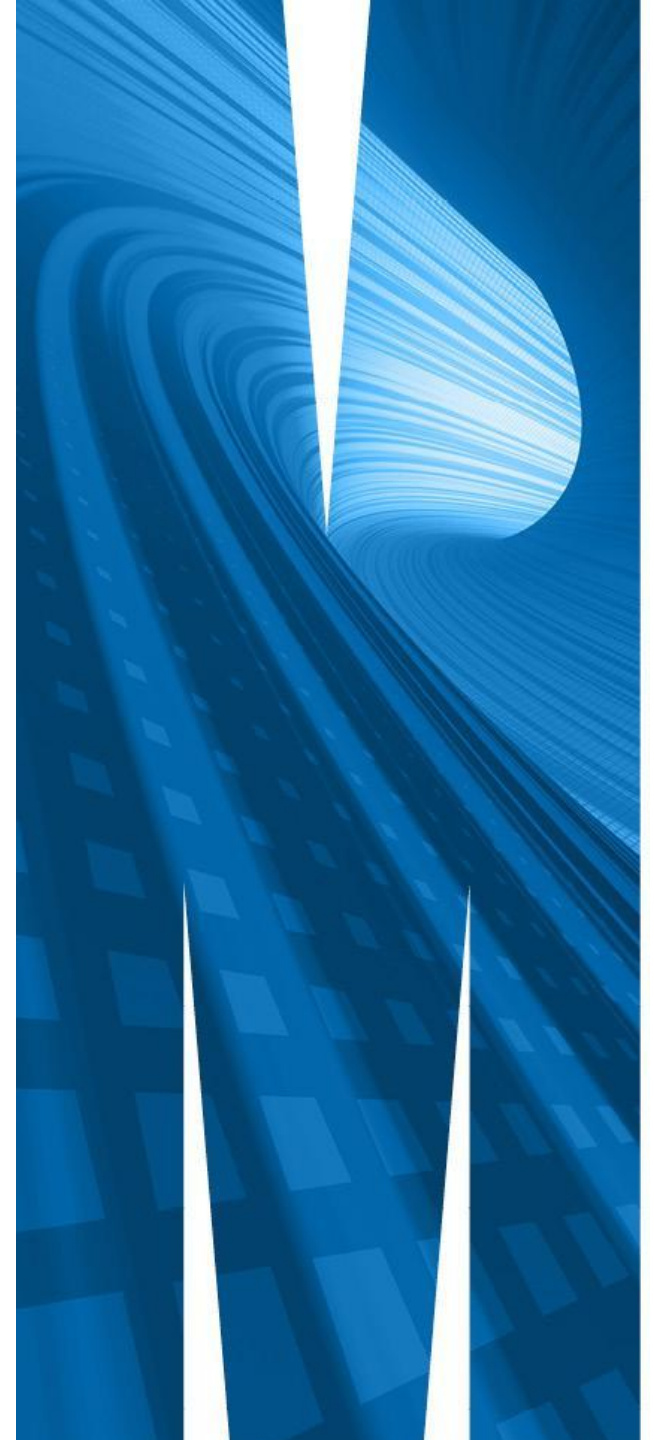


FIT2081 Mobile Application Development

WEEK 3

Dr. Lim Chern Hong
Semester 1, 2023
Monash University Malaysia



Announcement for Week 3

- Please complete your pre-reading quiz and submit by Monday 4pm. You can find the pre-reading quiz link at moodle “assessment” section.
- You will have to complete and submit the workshop quiz which will make available after the forum by Wednesday 11.55pm.
- Please complete your lab tasks before joining your lab session. Your lab solution must be submitted to moodle by Friday 11.55pm.

Learning Outcomes for Week 3

- Life Cycles, Persistence & Activities
- Examine and understand the structure of the Android Life cycle
- Look at varying degrees of data persistence
- Work with Intents & multiple activities

Activities and Checklist for week 3

Activity	Notes	Checked?
Study the slide “FIT2081_Week3_Malaysia” & Week 3 Slide set	Useful to complete your lab tasks.	
Complete the pre-reading quiz	Access it from the “assessment section” in moodle. Submit by Monday 4pm.	
Attend Forum	Online, for topics wrap-up.	
Complete Workshop quiz	Workshop quiz questions will be uploaded after the Forum on Monday. Submit by Wednesday 11.55pm.	
Complete lab task	Please refer to the complete section in week 3 moodle	
Attend tutorial	OPTIONAL – if you have issue regarding the lab tasks	
Attend Lab	COMPULSORY – You have to complete the lab tasks before coming to the lab. Submit your lab tasks (including the extra task) on Friday 11.55pm	

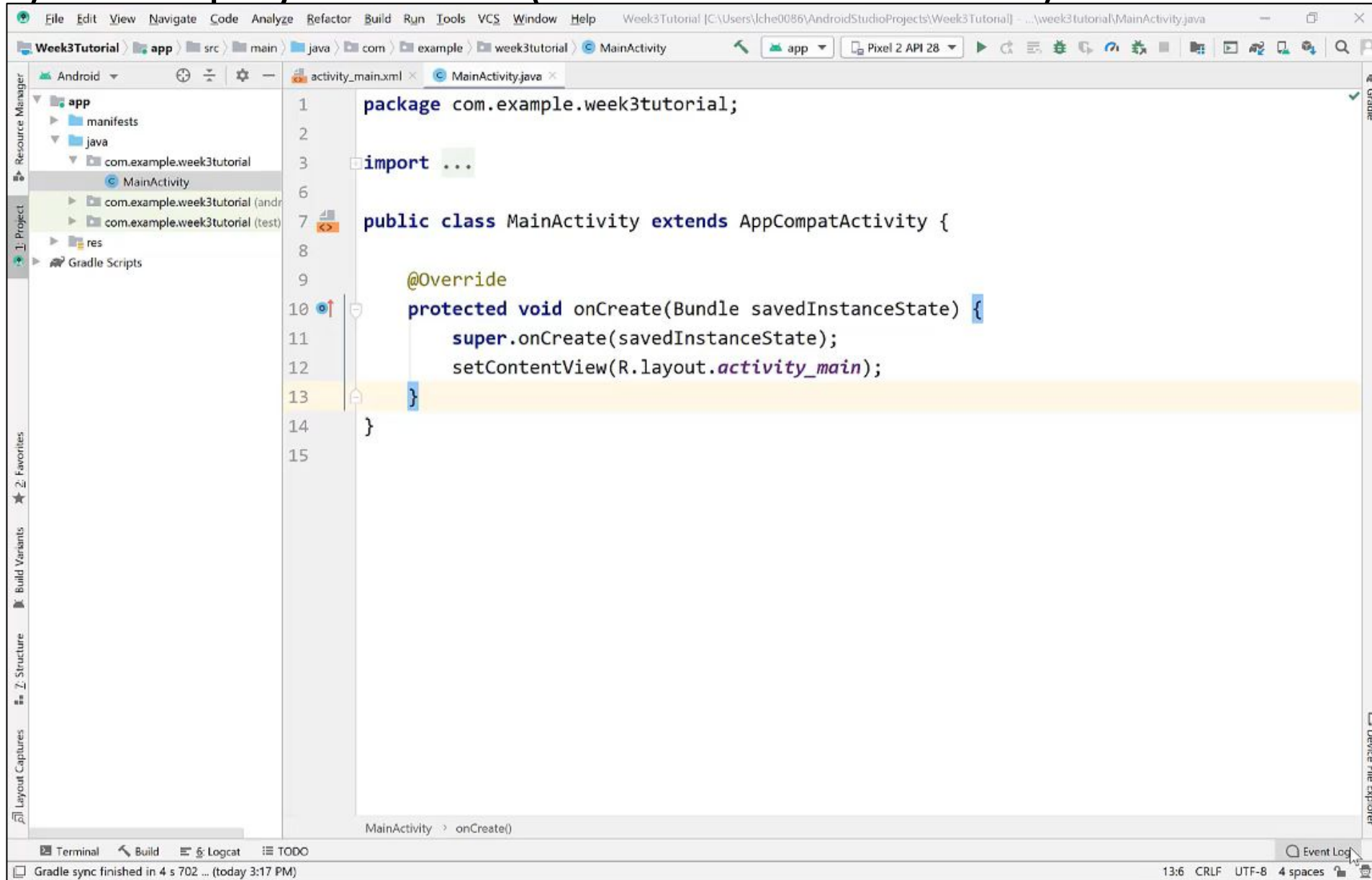
Tutorial time!



Gif retrieved from <https://gifer.com/en/74Zm>

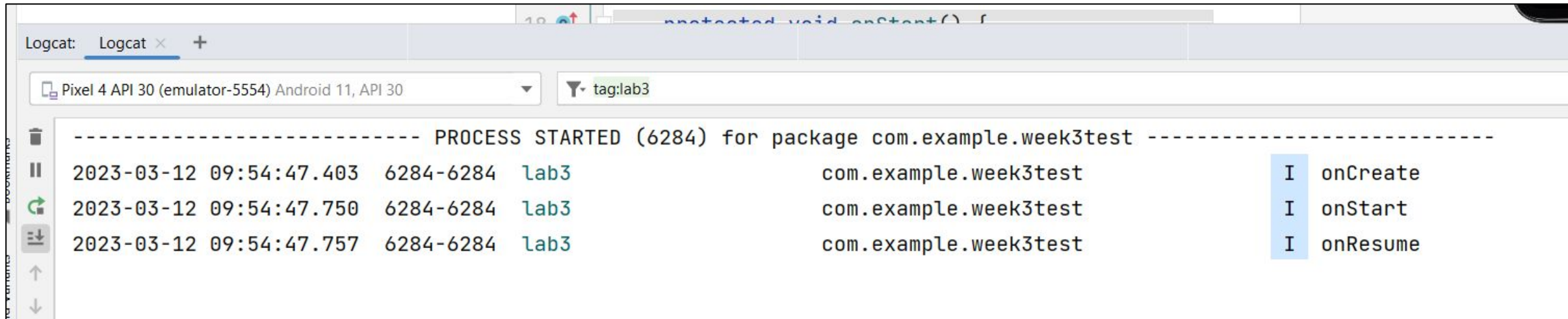
Video 1: Logcat Lifecycles and save instance view data

1) Please play the video (10 minutes 48 seconds)



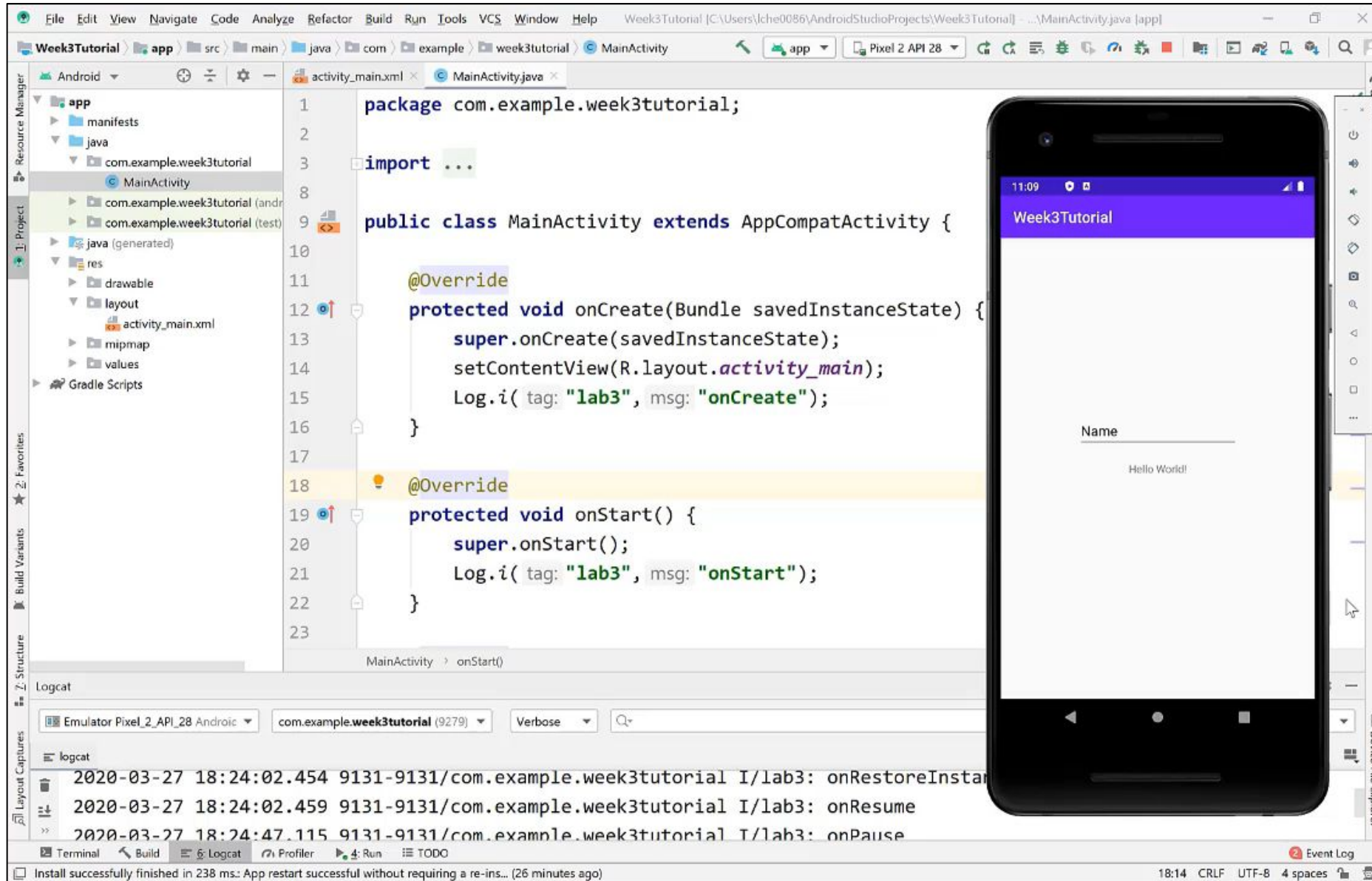
Video 1: Logcat Lifecycles and save instance view data

In newer android studio version, you may filter the log info using “tag:lab3”



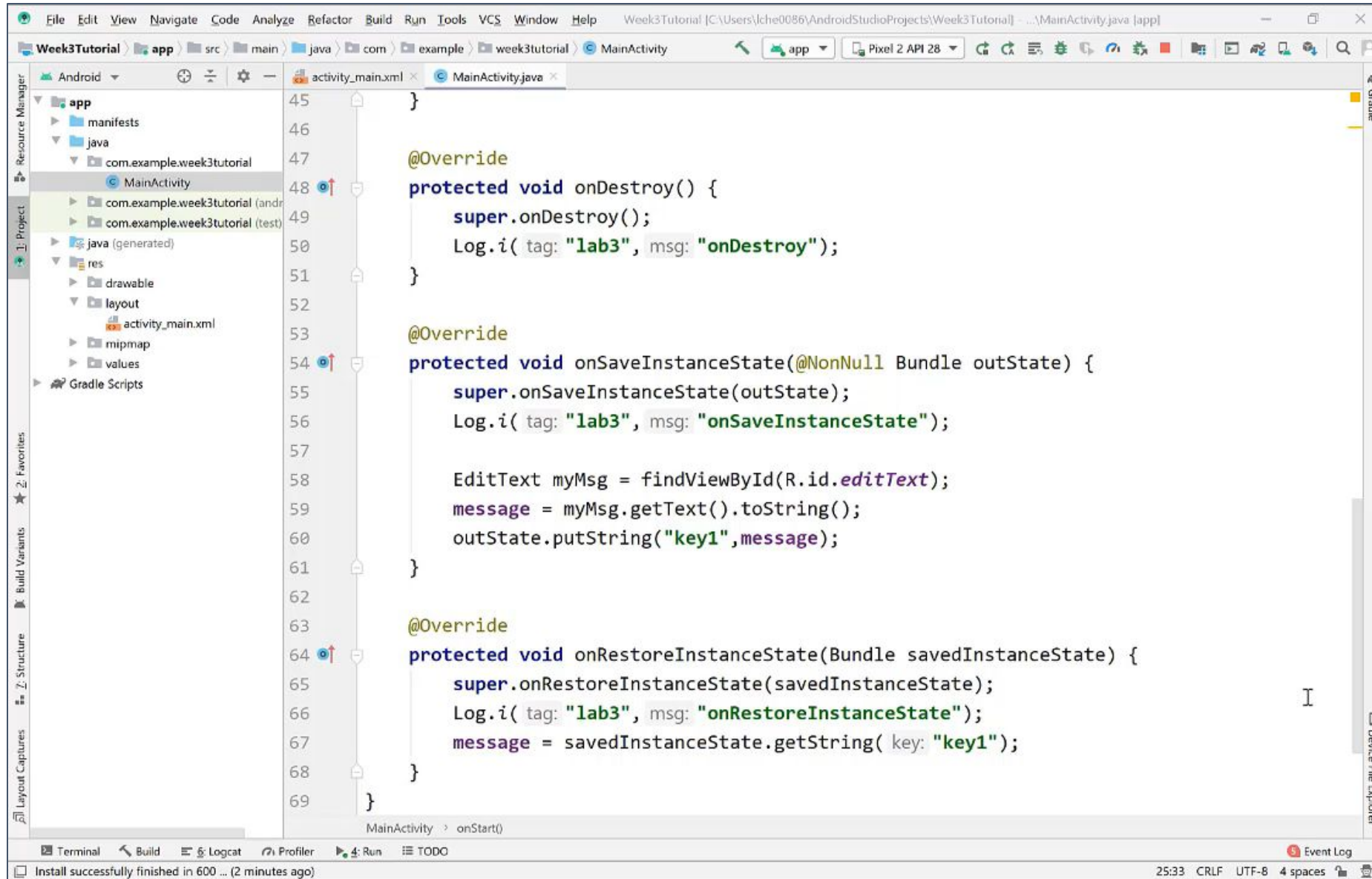
Video 2: Save instance non-view data

1) Please play the video (8 minutes 12 Seconds)



Video 3: Save persistence data

1) Please play the video (9 minutes 23 seconds)



```
45     }
46
47     @Override
48     protected void onDestroy() {
49         super.onDestroy();
50         Log.i( tag: "lab3", msg: "onDestroy");
51     }
52
53     @Override
54     protected void onSaveInstanceState(@NonNull Bundle outState) {
55         super.onSaveInstanceState(outState);
56         Log.i( tag: "lab3", msg: "onSaveInstanceState");
57
58         EditText myMsg = findViewById(R.id.editText);
59         message = myMsg.getText().toString();
60         outState.putString("key1",message);
61     }
62
63     @Override
64     protected void onRestoreInstanceState(Bundle savedInstanceState) {
65         super.onRestoreInstanceState(savedInstanceState);
66         Log.i( tag: "lab3", msg: "onRestoreInstanceState");
67         message = savedInstanceState.getString( key: "key1");
68     }
69 }
```

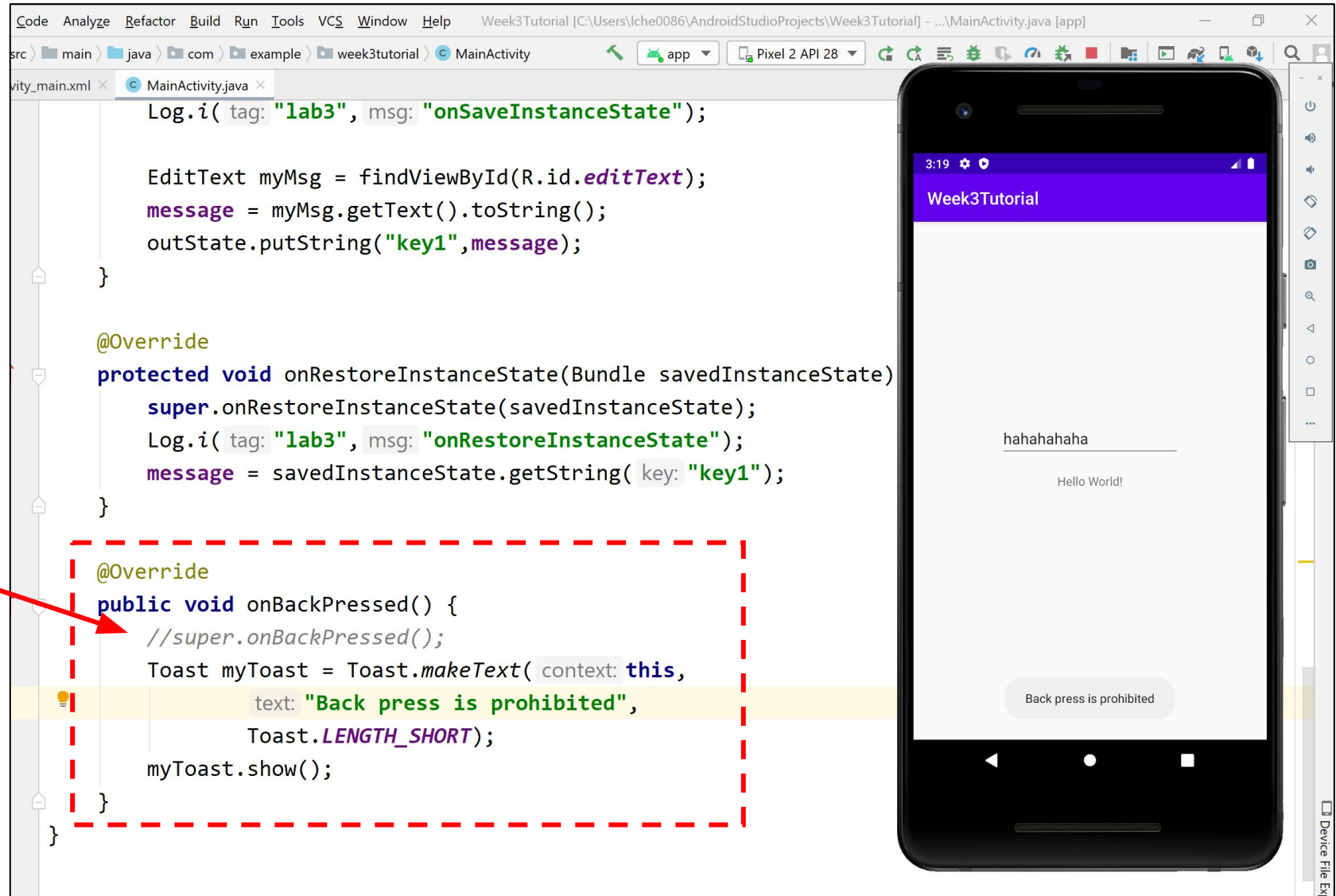
MainActivity -> onStart()

Terminal | Build | Logcat | Profiler | Run | TODO

Install successfully finished in 600 ... (2 minutes ago) 25:33 CRLF UTF-8 4 spaces

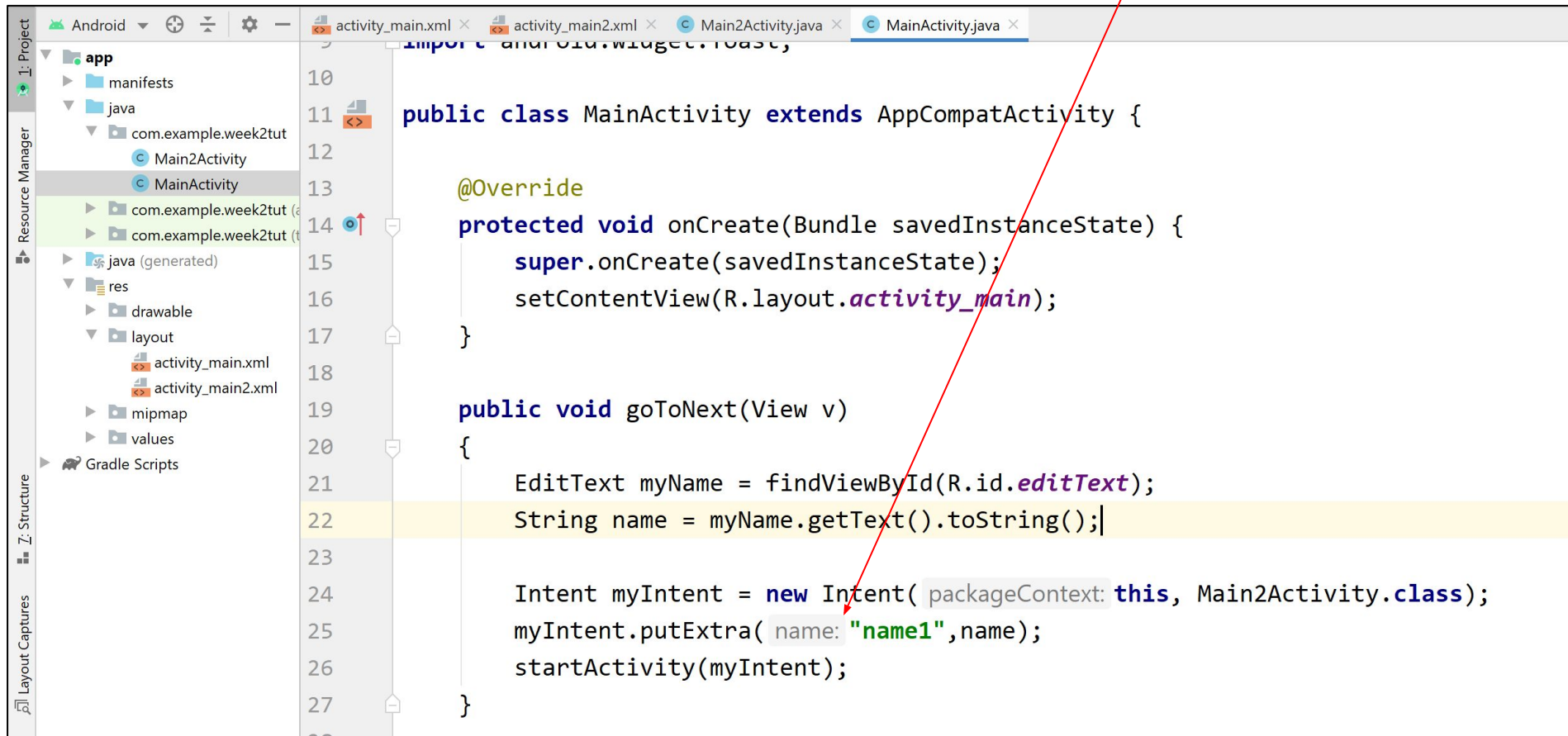
Extra info 1: how disable the back button

- 1) There are times where you want to prevent the user from pressing the back button. E.g online banking App.
- 2) You may override the `onBackPressed()` callback by removing the `super.onBackPressed()`.



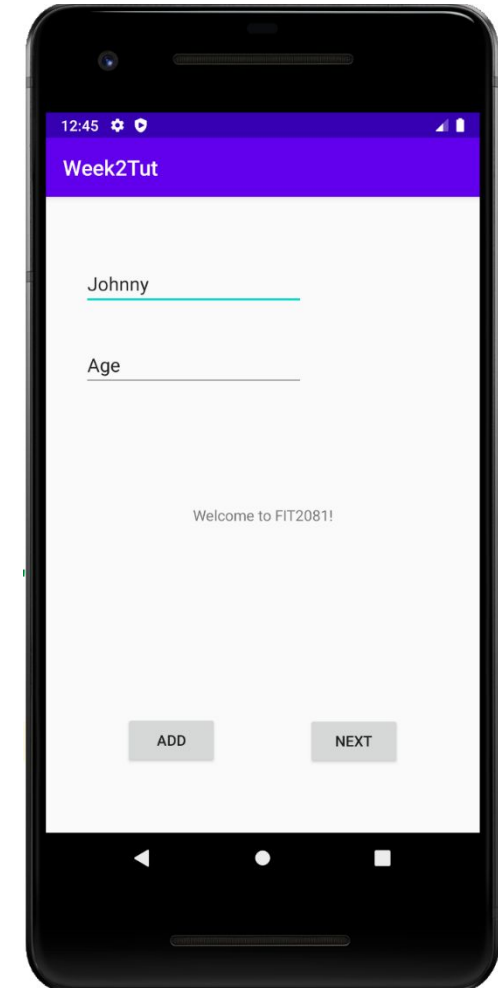
Extra info 2: how to pass data to another activity (1)

- 1) Similar concept with using bundle, you may pass the data to another activity (refer to tutorial 2 on how to navigate to another activity) by using **dictionary concept** (provide key and data).



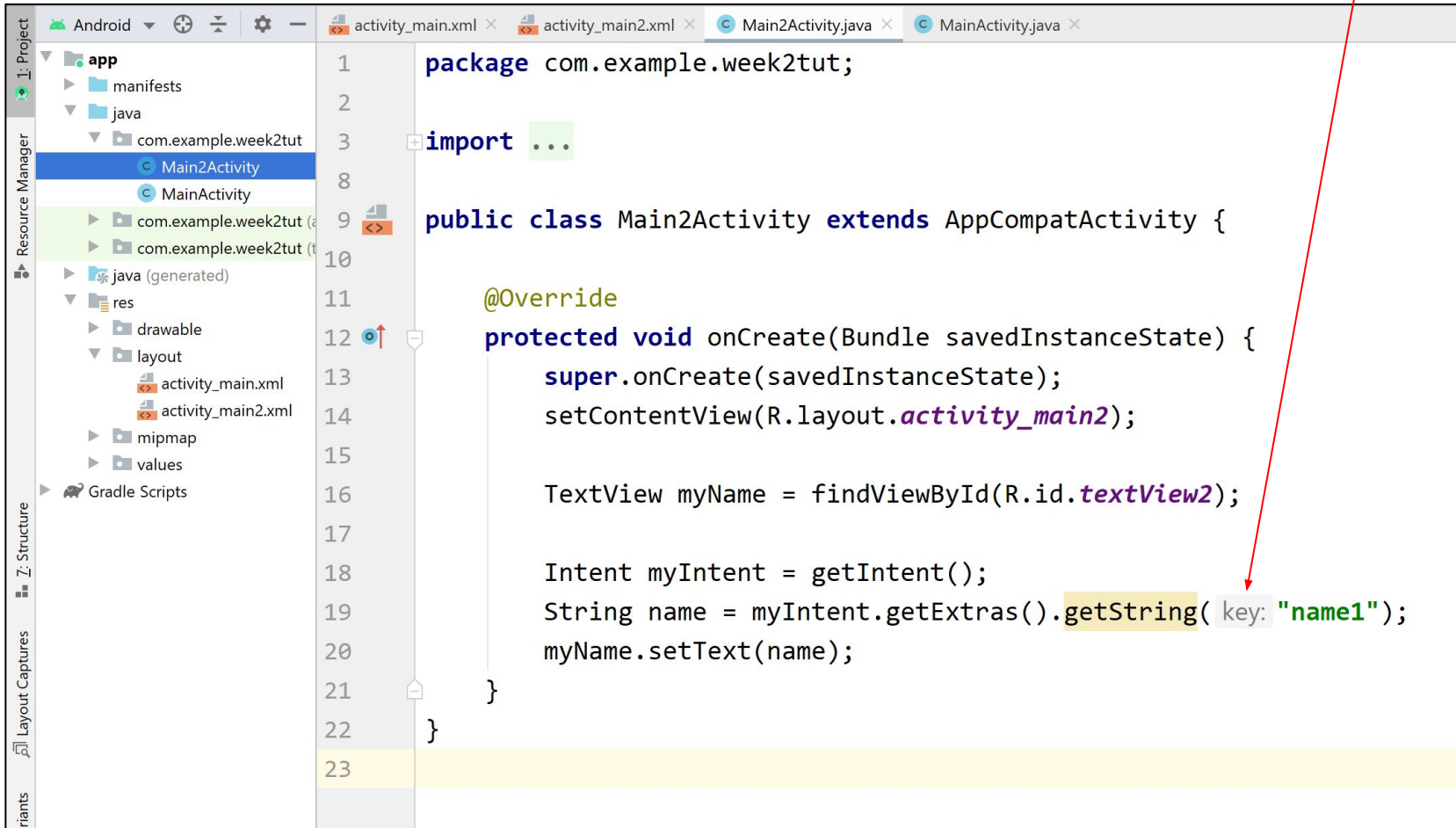
```
10 import android.widget.Toast;
11
12 public class MainActivity extends AppCompatActivity {
13
14     @Override
15     protected void onCreate(Bundle savedInstanceState) {
16         super.onCreate(savedInstanceState);
17         setContentView(R.layout.activity_main);
18     }
19
20     public void goToNext(View v)
21     {
22         EditText myName = findViewById(R.id.editText);
23         String name = myName.getText().toString();
24
25         Intent myIntent = new Intent( packageContext: this, MainActivity.class);
26         myIntent.putExtra( name: "name1", name);
27         startActivity(myIntent);
28     }
29 }
```

Objective: to pass the name to activity 2

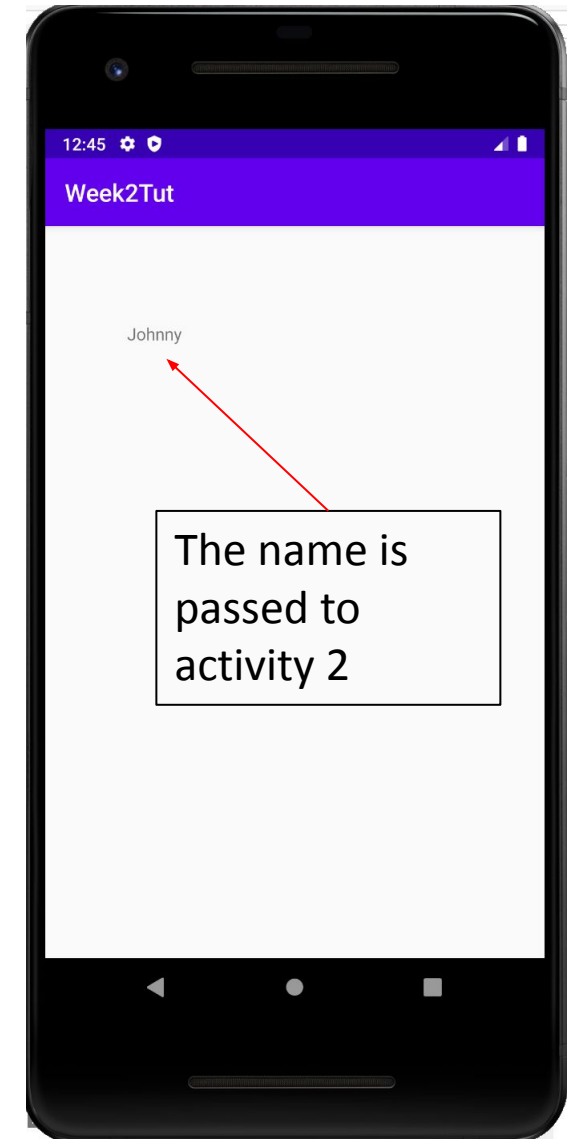


Extra info 2: how to pass data to another activity (2)

- 2) In another activity, you may retrieve that data by just **providing the key**.



```
1 package com.example.week2tut;
2
3 import ...
4
5 public class Main2Activity extends AppCompatActivity {
6
7     @Override
8     protected void onCreate(Bundle savedInstanceState) {
9         super.onCreate(savedInstanceState);
10        setContentView(R.layout.activity_main2);
11
12        TextView myName = findViewById(R.id.textView2);
13
14        Intent myIntent = getIntent();
15        String name = myIntent.getExtras().getString(key: "name1");
16        myName.setText(name);
17    }
18 }
```



Extra info 3: how to make a scrollable layout

- 1) To make your constraint layout scrollable, all you need is to wrap it by a ScrollView as shown below

```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView 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:fillViewport="true"
    android:layout_height="match_parent">
```

```
    <androidx.constraintlayout.widget.ConstraintLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:context=".MainActivity">
        <EditText
            android:id="@+id/editText2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:ems="10"
            android:gravity="start|top"
            android:inputType="textMultiLine"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent" />
    </androidx.constraintlayout.widget.ConstraintLayout>
```

```
</ScrollView>
```

Wrap the layout
with a ScrollView

Lab time!



Gif retrieved from <https://giphy.com/>

Lab 3 – Instructions

Please follow the instructions posted on the moodle.

Week 3 - Lab Tasks

Lab Specifications

Add the following features to the application you developed the previous week:

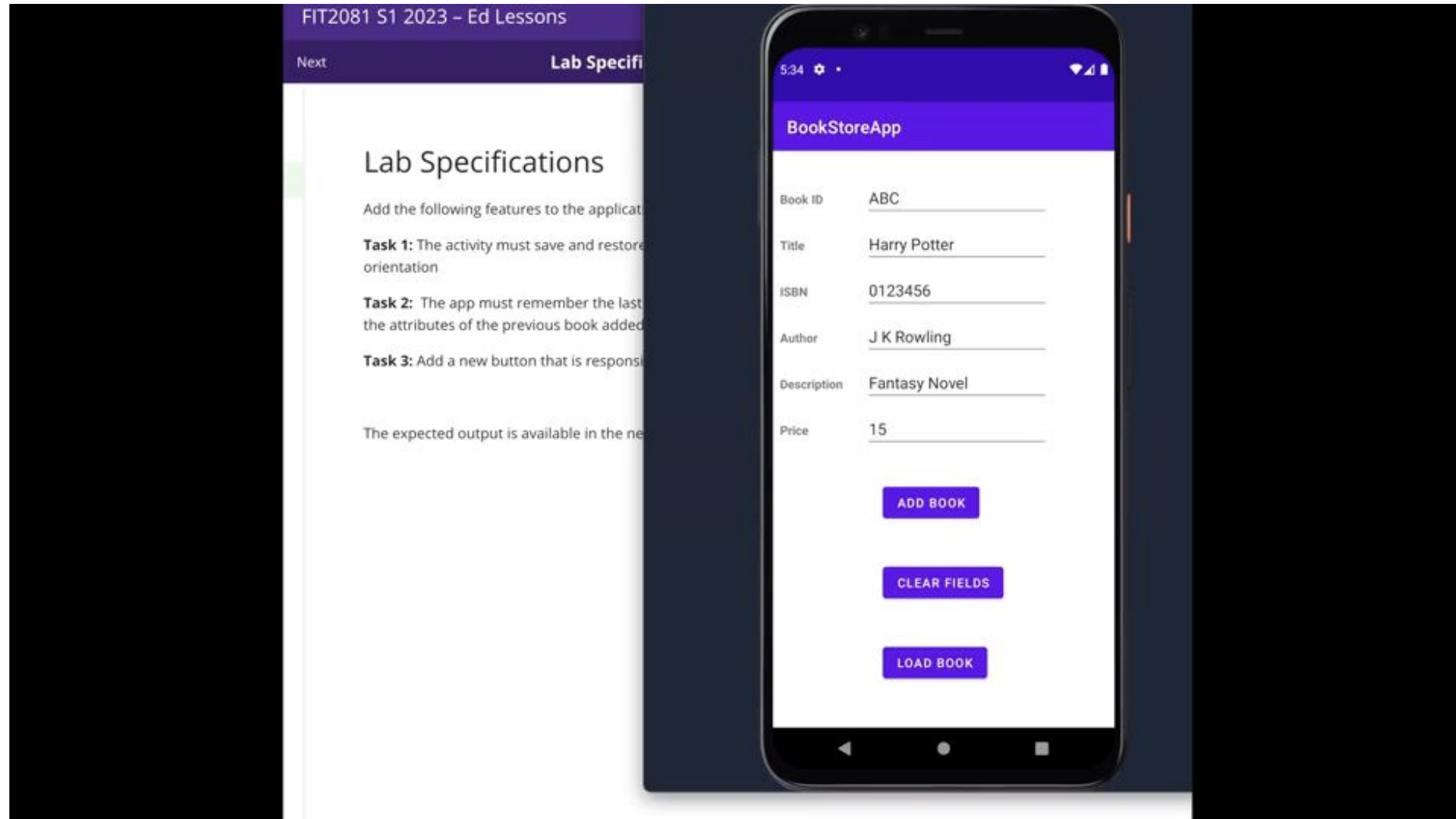
Task 1: The activity must save and restore the view data of the book title and ISBN when you change its orientation.

Task 2: The app must remember the last book added to the system. In other words, opening the app should load the attributes of the previous book added.

Task 3: Add a new button that is responsible for reloading the save attributes.

Lab 3 – Instructions

Expected outcome:



*****Please join your tutorial class if you have any queries regarding the lab tasks.**

Thank you!