

Tutorial 2: View and Layout

Objectives

- Practice with basic layouts and widgets
- Handle button click events
- Displaying messages using Toast
- Displaying images

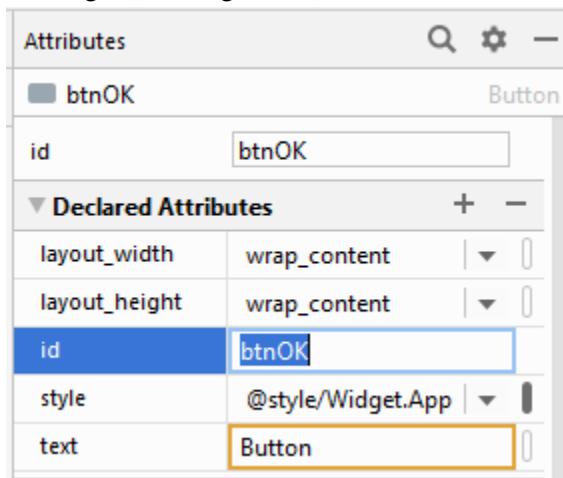
Tutorial Exercises

Read more: Manipulating widgets programmatically (30 mins)

You are now mainly working with widgets via the graphical Design view. In this section we learn how to manipulate with widgets programmatically from Activity.

Getting reference to widget

- Assigning **resource ID** for widget (in Design view)



- Referencing to an inflated widget by calling **Activity.findViewById(int)**. Note: **Android.R.java**: auto-generated file by aapt (Android Asset Packaging Tool) contains resource IDs for *all the resources* of res/ directory. ... xml file.

```
// MainActivity.java
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);

    Button btnOK = findViewById(R.id.btnOK);
    // ...
}
```

Getting & Setting widget attributes

The widget reference contains appropriate getter & setter methods for data of attributes – even some cannot be configured via the Design view.

```
Button btnOK = findViewById(R.id.btnOK);

btnOK.setText("Hello Android");
String text = btnOK.getText().toString();
```

Handling button click event

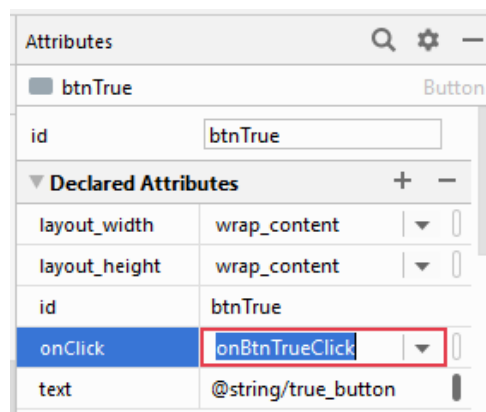
- **Step 1:** add handler method in Activity. *Note:* must be with input of type View

```
public class MainActivity extends AppCompatActivity {

    public void onBtnTrueClick(View view) {
        Log.i( tag: "Info", msg: "Clicked!");
    }

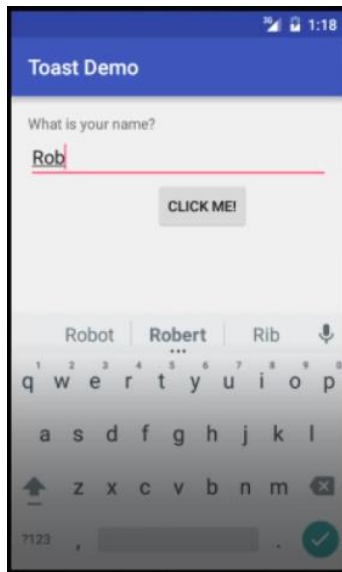
    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

- **Step 2:** assign listener on Design view



Exercise 1 – App: Hello You

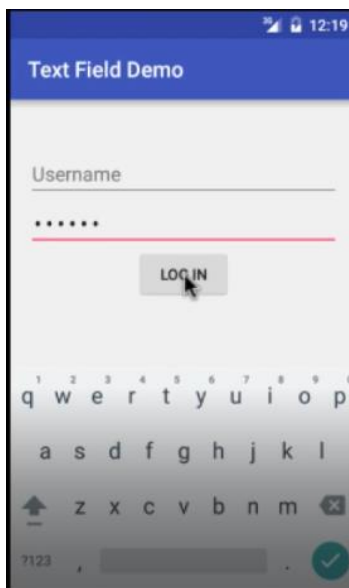
- Creating a new app with the interface as below.



- Functionality: “Hello You”
 - o users enter his/ her name then click button “Click me!”,
 - o system displays a Toast message “Hello” + his/ her name

Exercise 2 – App: Log me in

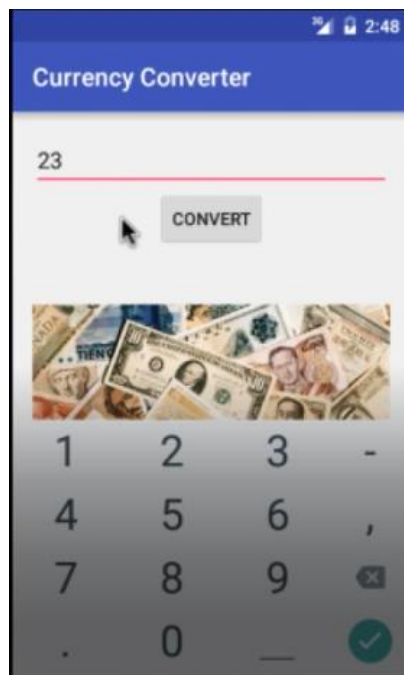
- Creating a new app with the interface as below. Note: use suitable input type.



- Functionality: “Welcome back”
 - users enter username & password then click button “Log in”
 - system displays a Toast message “Welcome back!” only if user entered admin/ admin or else displays “Incorrect username or password!”

Exercise 3 – App: Currency Converter App

- Creating a new app with the interface as below.
- Functionality: “USD to VND”
 - user enters a number of USD then click button “Convert”
 - system converts it into VND then displays a Toast message



About the image, you may find yourself how to use it. Hint:

- image file need to be saved in folder res/raw
- component: `ImageView`
- attributes:
 - `srcCompat`: path name to the image file
 - `scaleType`: fit/ center... the image into the container

If you finish them all...

If you finish all the exercises, you can improve the apps above or your apps (with better input styles, images, handing exceptions...)

Posting them on our Facebook group with [#I'm_Android_developer](#) for discussion mark. **Note:** feel free if it somehow not so special – you know, we are all beginners :D

Good bye!