University of El Oued

Faculty of Exact Sciences		*G 1/2/3*
Department of Computer Science		*TP DEMO*
L3	**TP: Android - Basic UI Desgin**	*Mob_App*

Objective

The objective of this practical work is to take a look at the fundamentals of designing an UI for Android application, namely : **Layout, StartActivityForResult and Android Toast**. By the help of these fundamentals, we can send information from one activity to another and vice-versa, get result from another activity and provide **simple feedback** about an operation in a **small popup** (notification).

1. **Practical Tasks**

   (a) Create a new Android Project in Android Studio with a *Empty Activity*, and call it **TP_Basic_UI_designGXXXX**.

   (b) Open the UI associated with "MainActivity" and (see 1)

      i. Modify the layout type to **"RelativeLayout"**.

      ii. Examine the value of attributes : **" android :layout_width, android :layout_height, android :paddingBottom, android :paddingLeft, android :paddingRight, android :paddingTop "** for this layout to match them with the proper values.

      iii. Drag the following views from the palette : *"TextView", "Button"* with **text attribute values : "Default Message","GetMessage"** respectively.

      iv. Examine the value of attributes : **" android :layout_width, android :layout_height, android :layout_marginTop, android :layout_alignParentTop, android :layout_below, android :layout_centerHorizontal "** for these views to match them with the proper values.

   (c) Open *MainActivity.java* and (see 2) :

      i. Examine the **onCreate() method** for this activity and modify it to make feedback to user, handle the second activity starting event by invoking **startActivityForResult() method** and override the **onActivityResult()** method.

   (d) Create a new **Empty Activity**, and name it as **Second_Activity**.

   (e) Open the UI associated with "SecondActivity" and (see 3)

      i. Modify the layout type to **"LinearLayout"**.

      ii. Examine the value of attributes : **" android :layout_width, android :layout_height, android :paddingLeft, android :paddingRight, android :orientation"** for this layout to match them with the proper values.

      iii. Drag the following views from the palette : *"EditText", "TextView", "Button"* with **text attribute values : "Enter Message :","Submit"** respectively.

      iv. Examine the value of attributes : **" android :layout_width, android :layout_height, android :layout_marginTop, android :gravity, android :layout_gravity "** for these views to match them with the proper values.

(f) Open *Second_Activity.java* and (see 5) :

    i. Examine the **onCreate() method** for this activity and modify it to set result to the Main Activity.

(g) Compile and run the app.

```xml
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout 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:layout_height="match_parent"
    android:paddingBottom="@dimen/activity_vertical_margin"
    android:paddingLeft="@dimen/activity_horizontal_margin"
    android:paddingRight="@dimen/activity_horizontal_margin"
    android:paddingTop="@dimen/activity_vertical_margin"
    tools:context=".MainActivity" >

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignLeft="@+id/button2"
        android:layout_marginTop="48dp"
        android:text="Default Message" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@+id/textView2"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="42dp"
        android:text="GetMessage" />
</RelativeLayout>
```

FIGURE 1: Figure of activity_main.xml

```java
public class MainActivity extends AppCompatActivity {
    TextView textView1;
    Button button1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        CharSequence text = "Hello toast!";
        int duration = Toast.LENGTH_SHORT;
        Toast toast = Toast.makeText(getApplicationContext(), text, duration);
        toast.show();
        textView1 = (TextView) findViewById(R.id.textView2);
        button1 = (Button) findViewById(R.id.button2);
        button1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
                Intent intent = new Intent(MainActivity.this,
SecondActivity.class);
                startActivityForResult(intent, 2);// Activity is started with
requestCode 2
            }
        });
    }

    // Call Back method  to get the Message form other Activity
    @Override
    protected void onActivityResult(int requestCode, int resultCode, Intent data)
{
        super.onActivityResult(requestCode, resultCode, data);
        // check if the request code is same as what is passed  here it is 2
        if (requestCode == 2) {
            String message = data.getStringExtra("MESSAGE");
            textView1.setText(message);
        }
    }
`
```

FIGURE 2: Figure of MainActivity.java

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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:layout_height="match_parent"
    android:paddingLeft="16dp"
    android:paddingRight="16dp"
    android:orientation="vertical"
    tools:context=".SecondActivity">

    <EditText
        android:id="@+id/editText1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="250dp"
        android:gravity="top"
        android:ems="10" />

    <TextView
        android:id="@+id/textView1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter Message:" />

    <Button
        android:id="@+id/button1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"

        android:text="Submit" />
</LinearLayout>
```

FIGURE 3: Figure of Second_Activity.XML

```java
public class SecondActivity extends AppCompatActivity {
    EditText editText1;
    Button button1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);
        editText1=(EditText)findViewById(R.id.editText1);
        button1=(Button)findViewById(R.id.button1);
        button1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
                String message=editText1.getText().toString();
                Intent intent=new Intent();
                intent.putExtra("MESSAGE",message);
                setResult(2,intent);
                finish();//finishing activity
            }
        });
    }
}
```

FIGURE 4: Figure of Second_Activity.java

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <dimen name="activity_vertical_margin">40dp</dimen>
    <dimen name="activity_horizontal_margin">40dp</dimen>
</resources>
```

FIGURE 5: Figure of Dimens.XML