



DEPARTMENT OF
COMPUTER SCIENCE AND ENGINEERING

Title: Android Intent

MOBILE APPLICATION DEVELOPMENT
CSE 402



GREEN UNIVERSITY OF BANGLADESH

1 Objective(s)

- To implement Intent for switching from one activity to another in an application.
- To be able to implement simple mathematical logic on user input.

2 Problem analysis

The android applications are not confined in only one activity. Activities are android component and they dictate the UI and handle the user interaction to the smart phone screen. . An activity is the single screen in android. It is like window or frame of Java. Activity helps to place all the UI components or widgets in a single screen. In an android application one need to go from one activity to another to perform the intended tasks. This is done with the help of intent. Intents are used to signal to the Android system that a certain event has occurred. Intents often describe the action which should be performed and provide data upon which such an action should be done. To start an activity, use the method `startActivity(intent)`. This method is defined on the Context object which Activity extends. Android supports explicit and implicit intents. In this experiment, we will learn about how to move among different activities of same application with the use of Intent.

3 Implementation of Android Explicit Intent

3.1 XML Code for Login UI

```
1 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
2     xmlns:app="http://schemas.android.com/apk/res-auto"
3     xmlns:tools="http://schemas.android.com/tools"
4     android:layout_width="match_parent"
5     android:layout_height="match_parent"
6     android:background="@android:color/system_notification_accent_color"
7     android:orientation="vertical"
8     tools:context=".MainActivity">
9
10    <TextView
11        android:id="@+id/textView3"
12        android:layout_width="match_parent"
13        android:layout_height="wrap_content"
14        android:text="Log-in Page"
15        android:textAlignment="center"
16        android:textSize="40dp"
17        android:textColor="@color/colorPrimaryDark"
18    />
19    <LinearLayout
20        android:layout_width="match_parent"
21        android:layout_height="wrap_content">
22        <TextView
23            android:id="@+id/textView4"
24            android:layout_width="wrap_content"
25            android:layout_height="wrap_content"
26            android:text="Enter Name"
27        />
28
29        <EditText
30            android:id="@+id/etName"
31            android:layout_width="match_parent"
32            android:layout_height="wrap_content"
33            android:ems="10"
34            android:inputType="textPersonName"
35            android:paddingLeft="10dp"
```

```

36         android:layout_margin="10dp"
37         android:hint="Enter Name Here" />
38 </LinearLayout>
39
40 <LinearLayout
41     android:layout_width="match_parent"
42     android:layout_height="wrap_content">
43     <TextView
44         android:id="@+id/textView5"
45         android:layout_width="wrap_content"
46         android:layout_height="wrap_content"
47         android:text="Enter Password"
48     />
49
50     <EditText
51         android:id="@+id/etPass"
52         android:layout_width="match_parent"
53         android:layout_height="wrap_content"
54         android:ems="10"
55         android:inputType="textPassword"
56         android:hint="Enter Password Here"/>
57 </LinearLayout>
58 <LinearLayout
59     android:layout_width="wrap_content"
60     android:layout_height="wrap_content"
61     android:orientation="horizontal">
62     <Button
63         android:id="@+id/btnOk"
64         android:layout_width="match_parent"
65         android:layout_height="wrap_content"
66         android:text="Ok" />
67
68     <Button
69         android:id="@+id/btnReset"
70         android:layout_width="match_parent"
71         android:layout_height="wrap_content"
72         android:text="Reset" />
73
74 </LinearLayout>
75 </LinearLayout>

```

3.2 Creating New Activity

app -> new -> activity -> empty activity -> temperatureTransformationApplication -> OK

3.3 Java Code for Implementing Intent

```

1  // Code for Intent to switch from login activity to a new activity
2  package com.example.login;
3
4  import androidx.appcompat.app.AppCompatActivity;
5
6  import android.content.Intent;
7  import android.os.Bundle;
8  import android.view.View;
9  import android.widget.Button;
10 import android.widget.EditText;

```

```

11 import android.widget.Toast;
12
13 public class MainActivity extends AppCompatActivity {
14
15     EditText ET1, ET2;
16     Button B1, B2;
17
18
19     @Override
20     protected void onCreate(Bundle savedInstanceState) {
21         super.onCreate(savedInstanceState);
22         setContentView(R.layout.activity_main);
23         //Referencing
24         ET1=(EditText) findViewById(R.id.etName);
25         ET2=( EditText) findViewById(R.id.etPass);
26
27         B1=(Button) findViewById(R.id.btnOk);
28         B2=(Button) findViewById(R.id.btnReset);
29
30         B1.setOnClickListener(new View.OnClickListener() {
31             @Override
32             public void onClick(View v) {
33                 Toast.makeText(getApplicationContext(),"Login Button Selected.",
34                     Toast.LENGTH_LONG).show();
35                 String textN=ET1.getText().toString();
36                 String textP=ET2.getText().toString();
37                 if((textN.equals("ABC")) && (textP.equals("123"))){
38                     Intent intent = new Intent(getApplicationContext(),
39                         temperatureTransformationApplication.class);
40                     startActivity(intent);
41                 }
42             });
43
44         B2.setOnClickListener(new View.OnClickListener() {
45             public void onClick(View v) {
46                 Toast.makeText(getApplicationContext(),"Reset Button Selected.",
47                     Toast.LENGTH_LONG).show();
48             } });
49     }
50 }

```

4 Input/Output

Run the code and observe the output in the virtual device. If login matches then the application will take one to the next activity.

5 Temperature Transformation Code Implementation in Java

5.1 XML code for Temperature Transformation Activity

```

1 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
2   xmlns:app="http://schemas.android.com/apk/res-auto"
3   xmlns:tools="http://schemas.android.com/tools"
4   android:layout_width="match_parent"
5   android:layout_height="match_parent"
6   android:orientation="vertical"
7   tools:context=".pageTwo">
8
9   <TextView
10     android:id="@+id/textView"
11     android:layout_width="match_parent"
12     android:layout_height="wrap_content"
13     android:text="Temperature Converter"
14     android:textSize="30dp"
15     android:textColor="@android:color/holo_red_dark"
16     android:layout_marginTop="40dp"/>
17
18   <EditText
19     android:id="@+id/enterTemp"
20     android:layout_width="match_parent"
21     android:layout_height="wrap_content"
22     android:ems="10"
23     android:inputType="numberDecimal"
24     android:hint="Enter Temperature"
25     android:textSize="28dp"
26     android:layout_marginTop="30dp"/>
27
28   <Button
29     android:id="@+id/cToF"
30     android:layout_width="wrap_content"
31     android:layout_height="wrap_content"
32     android:text="Celcius to fahrenheit"
33     android:background="@android:color/holo_orange_light"
34     android:layout_gravity="center"
35     android:textAlignment="center"
36     android:layout_marginTop="30dp"
37     android:layout_marginBottom="10dp"
38     />
39
40   <TextView
41     android:id="@+id/result"
42     android:layout_width="match_parent"
43     android:layout_height="wrap_content"
44     android:text="'?' degrees"
45     android:textAlignment="center"
46     android:textSize="30dp"/>
47
48 </LinearLayout>

```

5.2 JAVA code for Implementing Temperature Transformation

```

1 package com.example.login;
2
3 import androidx.appcompat.app.AppCompatActivity;
4
5 import android.content.Intent;
6 import android.os.Bundle;

```

```

7 import android.view.View;
8 import android.widget.Button;
9 import android.widget.EditText;
10 import android.widget.TextView;
11
12 public class pageTwo extends AppCompatActivity {
13
14     private Button cToF;
15     private TextView result;
16     private EditText enterTemp;
17
18     double result1;
19     @Override
20     protected void onCreate(Bundle savedInstanceState) {
21         super.onCreate(savedInstanceState);
22         setContentView(R.layout.activity_page_two);
23
24         //referencing
25         cToF=findViewById(R.id.cToF);
26
27         result=findViewById(R.id.result);
28         enterTemp=findViewById(R.id.enterTemp);
29
30         cToF.setOnClickListener(new View.OnClickListener() {
31             @Override
32             public void onClick(View v) {
33                 //type converter decimal to double
34                 double temp= Double.parseDouble(enterTemp.getText().toString());
35                 //to change input from Celsius Scale to Fahrenheit Scale
36                 result1=(temp * 1.8)+32;
37                 //to show the result in Fahrenheit in UI
38                 result.setText(String.valueOf(result1));
39             }
40         });
41
42     }
43 }

```

6 Input/Output

Run the code and observe the output in the virtual device.

7 Discussion & Conclusion

From this experiment, we learnt about switching from one activity to another by using event listener on buttons. This experiment implements a simple arithmetic task to convert a temperature input from the user into Fahrenheit from Celsius for a better understanding of how to do simple operations using user inputs.

8 Lab Task (Please implement yourself and show the output to the instructor)

1. Add another button to change temperature from Fahrenheit to Celsius.
2. Add a button to return to the first login activity.

8.1 Problem analysis

Create new Buttons for the tasks and link them up with the Java code. Setup event listeners for these Buttons. Write necessary logic in the intended sections to perform the task of temperature conversion and activity switching.

9 Lab Exercise (Submit as a report)

- Add another button in your application to implement Implicit Intent.
- Write necessary codes for cellphone's back button to return to the previous Activity

10 Policy

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