

# **CSE2200: Software Development Lab- III**

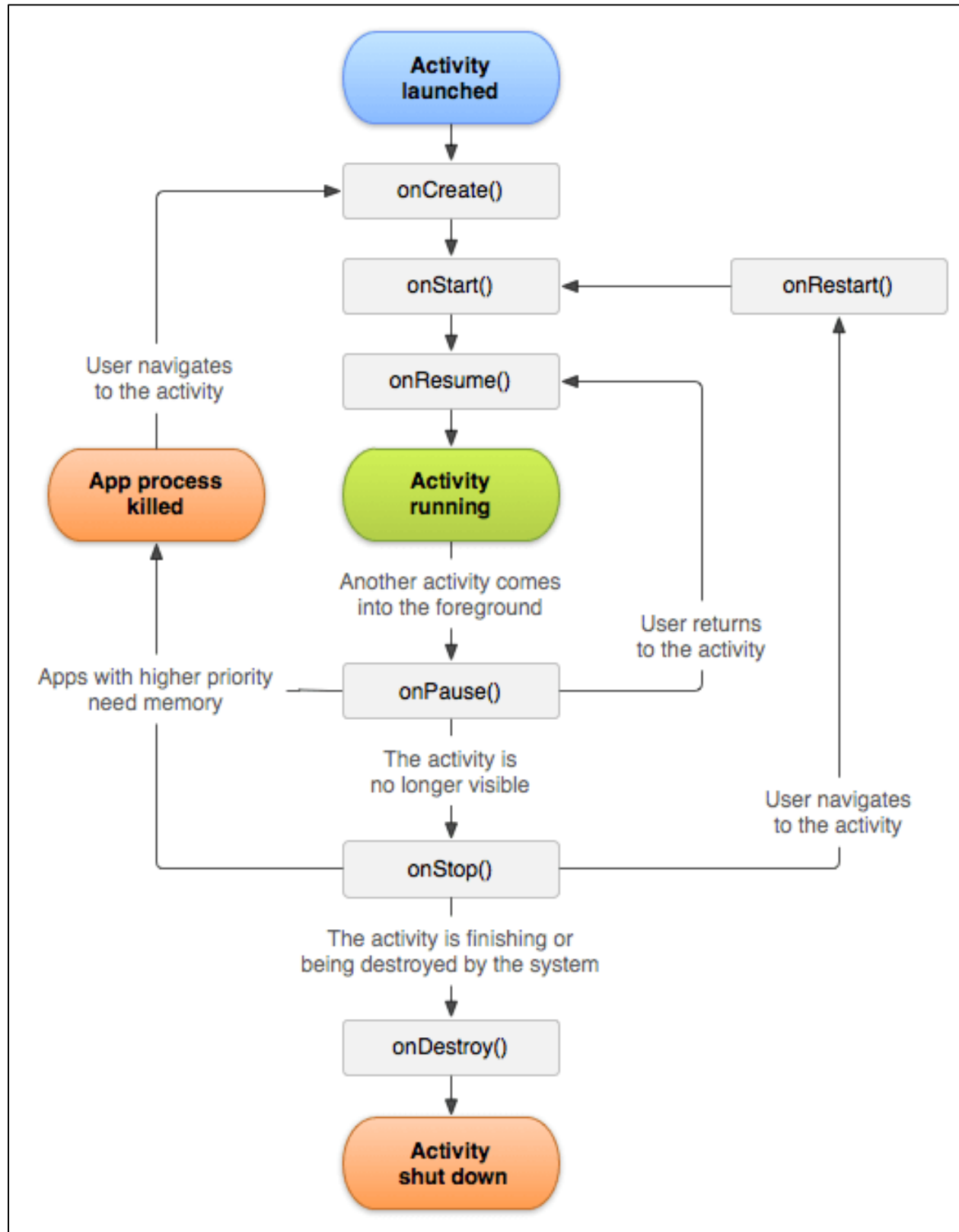
## **Lab 3**

### ❖ Android Activity

An Android activity is one screen of the Android app's user interface.



## ❖ Android Activity Life Cycle



- I) Create a new Project.
- II) Go to MainActivity.java
- III) Copy the following methods in the *MainActivity* class.

### onCreate() Method

```
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main);  
  
    Toast.makeText(MainActivity.this, "onCreate", Toast.LENGTH_SHORT).show();  
}
```

### onStart() Method

```
protected void onStart() {  
    super.onStart();  
    Toast.makeText(MainActivity.this, "onStart", Toast.LENGTH_SHORT).show();  
}
```

### onResume() Method

```
protected void onResume() {  
    super.onResume();  
    Toast.makeText(MainActivity.this, "onResume", Toast.LENGTH_SHORT).show();  
}
```

1) When Application starts, 3 of the methods are called.

☐ onCreate()

☐ onStart()

☐ onResume()

2) When you pause the activity and go to home or in any other activity, 2 methods are called.

☐ onPause()

☐ onStop()

### onPause() Method

```
protected void onPause() {  
    super.onPause();  
    Toast.makeText(MainActivity.this, "onPause", Toast.LENGTH_SHORT).show();  
}
```

### onStop() Method

```
protected void onStop() {  
    super.onStop();  
    Toast.makeText(MainActivity.this, "onStop", Toast.LENGTH_SHORT).show();  
}
```

3) When you reopen the app, 3 methods are called.

☐onRestart()

☐onStart()

☐onResume()

### onRestart() Method

```
protected void onRestart() {  
    super.onRestart();  
    Toast.makeText(MainActivity.this, "onRestart", Toast.LENGTH_SHORT).show();  
}
```

4) When you click back button or close the app, 3 methods are called.

☐onStop()

☐onPause()

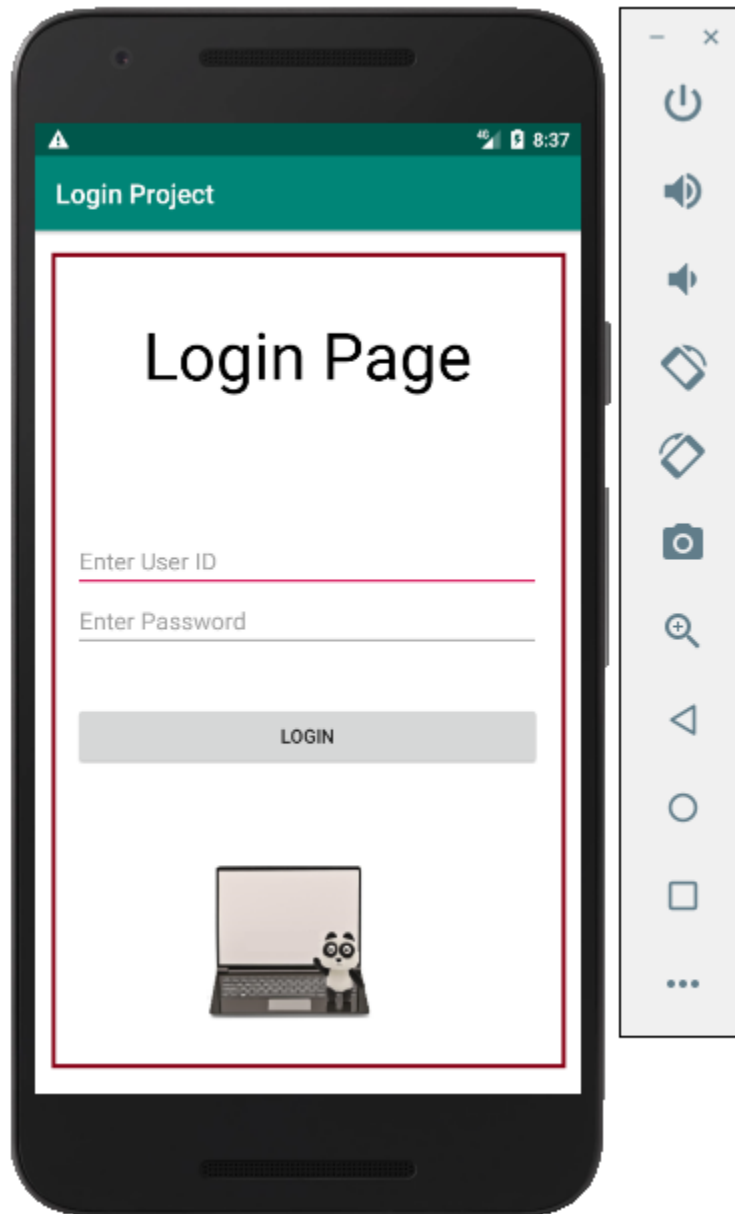
☐onDestroy()

### onDestroy() Method

```
protected void onDestroy() {  
    super.onDestroy();  
    Toast.makeText(MainActivity.this, "onDestroy", Toast.LENGTH_SHORT).show();  
}
```

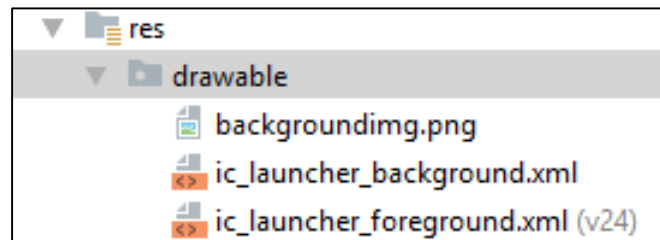
## ❖ Adding Activities to the Application

- I) Create another project.
- II) Let's Create a Login Activity Page.



### III) Adding Image

Copy image file from your computer and paste it in the project folder: res -> drawable

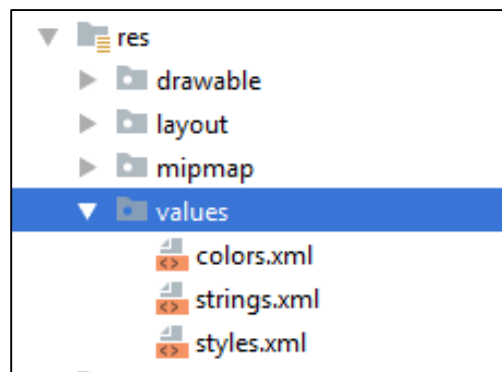


### IV) Adding colors

Go to res -> values -> colors.xml folder and paste the following color code.

```
<color name="colorBlack">#000000</color>
```

This creates a color named colorBlack with the code of black color.



```
1  <?xml version="1.0" encoding="utf-8"?>
2  <resources>
3      <color name="colorPrimary">#008577</color>
4      <color name="colorPrimaryDark">#00574B</color>
5      <color name="colorAccent">#D81B60</color>
6      <color name="colorBlack">#000000</color>
7  </resources>
```

V) Go to activity\_main.xml and paste the following code to create the view.

```
<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:padding="30dp"
    android:orientation="vertical"
    android:background="@drawable/backgroundimg"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:textColor="@color/colorBlack"
        android:text="Login Page"
        android:textSize="50dp"
        android:layout_marginTop="30dp"
        android:layout_marginBottom="100dp"/>

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center"
        android:orientation="vertical">

        <EditText
            android:id="@+id/userIdText"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:textColor="@color/colorBlack"
            android:hint="@string/userIdString"
            />

        <EditText
            android:id="@+id/editText"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:textColor="@color/colorBlack"
            android:hint="@string/userPasswordString"
            android:inputType="textPassword" />

        <Button
            android:id="@+id/loginButton"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginTop="40dp"
            android:text="Login"
            />
    </LinearLayout>
</LinearLayout>
```



- VI) Create a new Activity named SecondActivity.
- VII) Now go to MainActivity.java and write the following code

```
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity implements
View.OnClickListener{

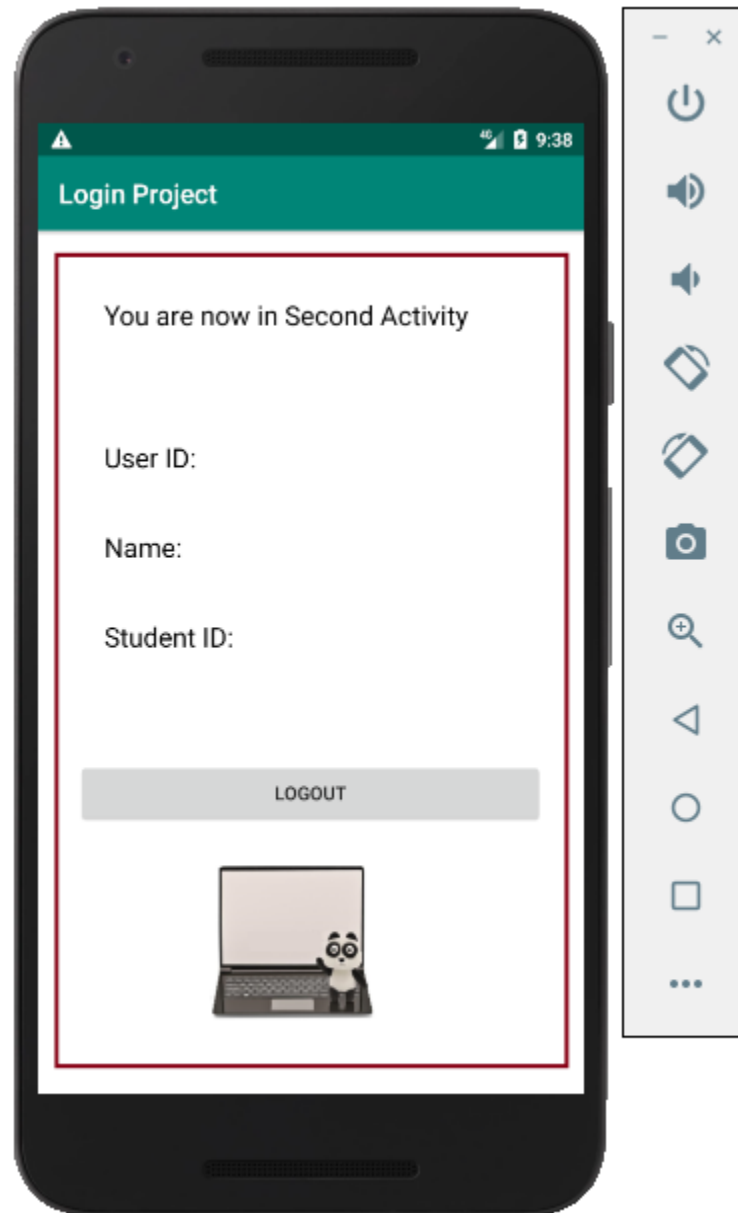
    Button enterNewActivityButton;

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

        enterNewActivityButton = (Button) findViewById(R.id.loginButton);
        enterNewActivityButton.setOnClickListener(this);
    }

    @Override
    public void onClick(View v) {
        Intent loginIntent = new Intent(MainActivity.this, SecondActivity.class);
        startActivity(loginIntent);
    }
}
```

VIII) Let's design the SecondActivity.



IX) Write the following code in activity\_second.xml

```
<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:padding="30dp"
    android:orientation="vertical"
    android:background="@drawable/backgroundimg"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="You are now in Second Activity"
        android:textColor="@color/colorBlack"
        android:padding="20dp"
        android:textSize="20dp"
        android:layout_marginBottom="40dp"/>

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal">

        <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="User ID: "
            android:textColor="@color/colorBlack"
            android:padding="20dp"
            android:textSize="20dp"/>

        <TextView
            android:id="@+id/userIDShow"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:textColor="@color/colorBlack"
            android:padding="20dp"
            android:textSize="20dp"/>

    </LinearLayout>

    <LinearLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:orientation="horizontal">
```

```
<TextView
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Name: "
    android:textColor="@color/colorBlack"
    android:padding="20dp"
    android:textSize="20dp"/>

<TextView
    android:id="@+id/name"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textColor="@color/colorBlack"
    android:padding="20dp"
    android:textSize="20dp"/>

</LinearLayout>

<LinearLayout
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:orientation="horizontal">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Student ID: "
        android:textColor="@color/colorBlack"
        android:padding="20dp"
        android:textSize="20dp"/>

    <TextView
        android:id="@+id/StudentID"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textColor="@color/colorBlack"
        android:padding="20dp"
        android:textSize="20dp"/>

</LinearLayout>

<Button
    android:id="@+id/logoutButton"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginTop="60dp"
    android:text="Logout"
/>
</LinearLayout>
```

x) Go to SecondActivity.java and write the following code.

```
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;

public class SecondActivity extends AppCompatActivity implements
View.OnClickListener{

    Button backToMainActivityButton;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);

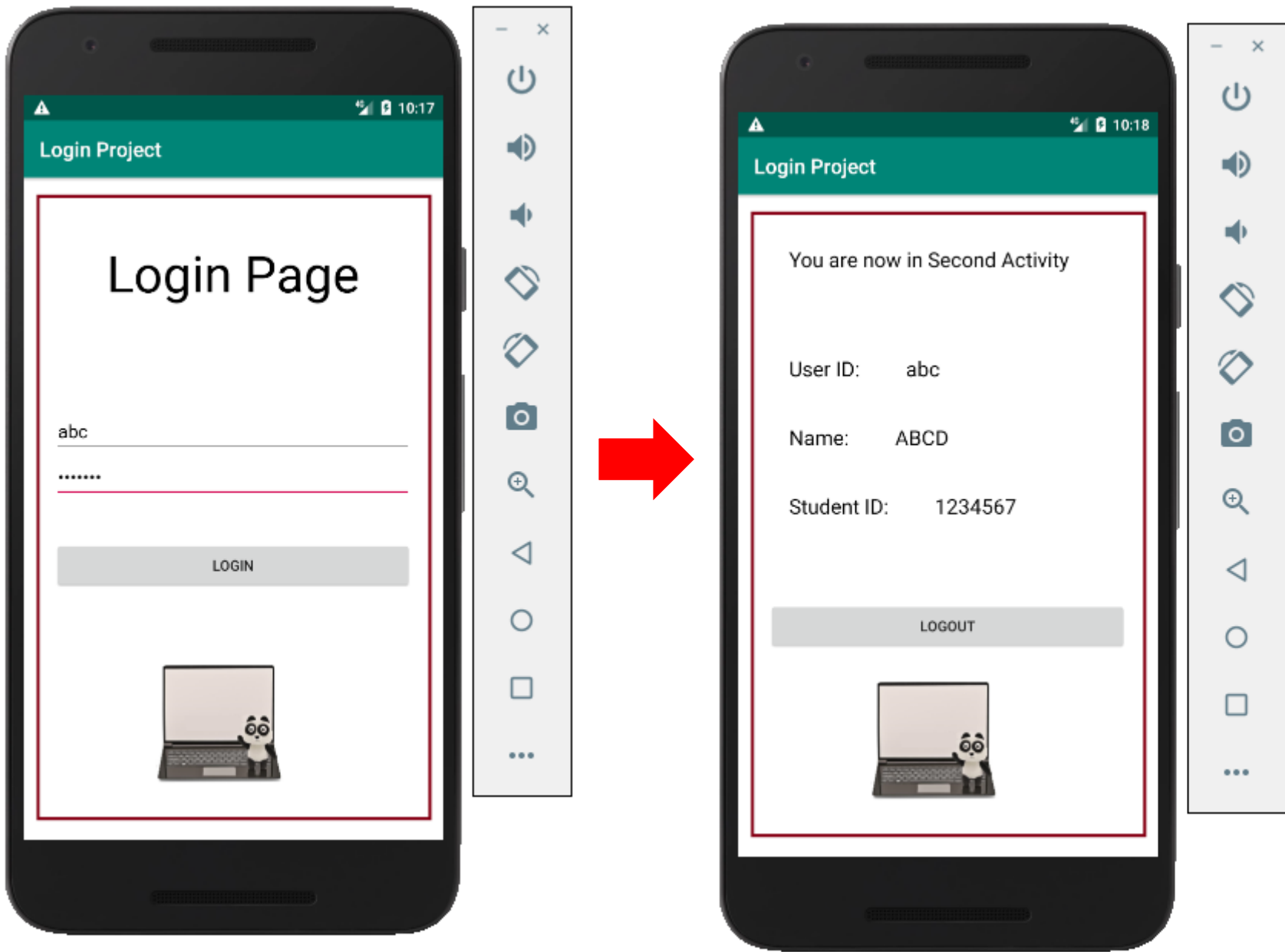
        Toast.makeText(SecondActivity.this, "Login Successful", Toast.LENGTH_SHORT).show();

        backToMainActivityButton = (Button) findViewById(R.id.logoutButton);
        backToMainActivityButton.setOnClickListener(this);

    }

    @Override
    public void onClick(View v) {
        Intent logoutIntent = new Intent(SecondActivity.this, MainActivity.class);
        startActivity(logoutIntent);
    }
}
```

XI) Now Let's Pass Values from the First Activity to Second Activity.



Do the following edits:

❖ In MainActivity.java add the following highlighted lines.

```
public class MainActivity extends AppCompatActivity implements
View.OnClickListener{

    Button enterNewActivityButton;

    EditText sendUserIDText;

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

        enterNewActivityButton = (Button) findViewById(R.id.loginButton);

        sendUserIDText = (EditText) findViewById(R.id.userIdText);

        enterNewActivityButton.setOnClickListener(this);
    }

    @Override
    public void onClick(View v) {

        String userIDStr = sendUserIDText.getText().toString();

        Intent loginIntent = new Intent(MainActivity.this,
SecondActivity.class);

        loginIntent.putExtra("name", "ABCD");
        loginIntent.putExtra("studentId", "1234567");
        loginIntent.putExtra("user", userIDStr);

        startActivity(loginIntent);
    }
}
```

❖ In SecondActivity.java add the following highlighted lines.

```
public class SecondActivity extends AppCompatActivity implements
View.OnClickListener{

    Button backToMainActivityButton;
    TextView nameTextView, studentIDTextView, userIDTextView;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);

        Toast.makeText(SecondActivity.this, "Login Successful",
        Toast.LENGTH_SHORT).show();

        backToMainActivityButton = (Button)
        findViewById(R.id.logoutButton);
        backToMainActivityButton.setOnClickListener(this);

        nameTextView = (TextView) findViewById(R.id.name);
        studentIDTextView = (TextView) findViewById(R.id.StudentID);
        userIDTextView = (TextView) findViewById(R.id.userIDShow);

        Bundle bundle = getIntent().getExtras();

        if (bundle != null) {

            String name = bundle.getString("name");
            String studentID = bundle.getString("studentId");
            String userID = bundle.getString("user");

            nameTextView.setText(name);
            studentIDTextView.setText(studentID);
            userIDTextView.setText(userID);

        }

    }
}
```