

# 1. ANDROID STUDIO

Android Studio is the official integrated development environment (IDE) for Android app development. It provides a comprehensive set of tools and features to streamline the app development process. Android apps can be written using Kotlin, Java, and C++ languages. Some steps to create an android app:

- Step 1: Install Android Studio
- Step 2: Set up Android Studio
- Step 3: Create a New Project
- Step 4: Configure the Project Details
- Step 5: Select Activity Template
- Step 6: Configure Activity Details

Here's the explanation of the code and its components:

## 1.1. AndroidManifest.xml:

The AndroidManifest.xml file is an important configuration file in an Android application. It defines essential information about the application, such as the package name, permissions required, activities, and services. In this code snippet, it declares three activities: RegisterActivity, LoginActivity, and MainActivity. The LoginActivity is set as the launcher activity, which means it will be the entry point of the application.

- <manifest>: The root element of the manifest file.
- <application>: Specifies the application component and its attributes.
- <activity>: Defines an activity (screen) within the application.
- android:name: Specifies the name of the activity.
- android:exported: Indicates whether the activity can be accessed by components outside the application.

## Code of AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools">

    <application
        android:allowBackup="true"
        android:dataExtractionRules="@xml/data_extraction_rules"
        android:fullBackupContent="@xml/backup_rules"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.Project"
        tools:targetApi="31">
        <activity
            android:name=".RegisterActivity"
            android:exported="false" />
        <activity
            android:name=".LoginActivity"
            android:exported="true">
            <intent-filter>
```

```

        <action android:name="android.intent.action.MAIN" />

        <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
</activity>

    <activity
        android:name=".MainActivity"
        android:exported="false">
    </activity>
</application>
</manifest>

```

## 1.2. LoginActivity.java:

This is the Java file for the LoginActivity class, which extends the AppCompatActivity class. It sets the layout by calling setContentView() and linking it to the activity\_login.xml layout file. It initializes and handles the click event of the "Register" button to navigate to the RegisterActivity.

- onCreate(): The method called when the activity is created. It initializes the UI components and sets a click listener on the "Register" button.

### Code of LoginActivity.java

```

package com.ocem.project;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class LoginActivity extends AppCompatActivity {

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

        Button btRegister = findViewById(R.id.btRegister);
        btRegister.setOnClickListener(new View.OnClickListener() {

            @Override
            public void onClick(View view) {
                Intent i = new Intent(LoginActivity.this,
RegisterActivity.class);
                startActivity(i);
            }
        });
    }
}

```

## 1.3. activity\_login.xml:

This XML layout file defines the UI for the login screen. It uses a LinearLayout with vertical orientation to organize the views. The file includes TextViews, EditTexts, and Buttons.

- <LinearLayout>: A vertical layout container that holds the UI components.
- <TextView>: Displays the "Login" text.

- <EditText>: Allows the user to enter a username and password.
- <Button>: Represents the login button.
- android:layout\_width and android:layout\_height: Specifies the width and height of the UI components.
- android:layout\_marginStart and android:layout\_marginTop: Sets the margin on the start and top sides of the UI components.

### Code of activity\_login.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    >
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="LogIn"
        android:textSize="30dp"
        android:layout_marginStart="16dp"
        android:layout_marginTop="24dp"
        />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Username"
        android:layout_marginStart="16dp"
        android:layout_marginTop="24dp"
        />

    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter Username"
        android:layout_marginHorizontal="16dp"
        />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Password"
        android:layout_marginStart="16dp"
        android:layout_marginTop="24dp"
        />

    <EditText
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginHorizontal="16dp"
        android:hint="Enter password"
        />

    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Login"
        android:layout_marginHorizontal="16dp"
        android:layout_marginTop="24dp"
        />
</LinearLayout>
```

```

        />

        <TextView
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Don't have an account?"
            android:textAlignment="center"
        />

        <Button
            android:id="@+id/btRegister"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:text="Register here"
            android:layout_marginHorizontal="16dp"
        />
    </LinearLayout>

```

## 1.4. RegisterActivity.java:

This is the Java file for the RegisterActivity class, which also extends the AppCompatActivity class. It sets the layout by calling setContentView() and linking it to the activity\_register.xml layout file. It initializes and handles the click event of the "Login" button to navigate back to the LoginActivity.

- onCreate(): The method called when the activity is created. It initializes the UI components and sets a click listener on the "Login" button.

### Code of RegisterActivity.java

```

package com.ocem.project;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;

public class RegisterActivity extends AppCompatActivity {

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

        Button btLogin = findViewById(R.id.btLogin);
        btLogin.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Intent i = new Intent(RegisterActivity.this,
com.ocem.project.LoginActivity.class);
                startActivity(i);
            }
        });
    }
}

```

## 1.5. activity\_registration.xml:

This XML layout file represents the UI for the registration screen. It uses a ScrollView to allow scrolling when the content exceeds the screen height. Inside the ScrollView, there is a LinearLayout with vertical orientation that holds the various views.

- <ScrollView>: Enables scrolling when the content exceeds the screen height.
- <LinearLayout>: A vertical layout container that holds the UI components.
- <TextView>: Displays the "Registration Form" text.
- <EditText>: Allows the user to enter their details.
- <RadioGroup>: Contains radio buttons for gender selection.
- <RadioButton>: Represents a single radio button option.

### Code of activity\_register.xml

```
<?xml version="1.0" encoding="utf-8"?>
<ScrollView
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:fillViewport="false"
    >
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:background="#FFE6FA"
        >

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Registration Form"
            android:textSize="30dp"
            android:layout_marginStart="16dp"
            android:layout_marginTop="24dp"
            />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Fullname"
            android:layout_marginStart="16dp"
            android:layout_marginTop="20dp"
            android:textSize="16dp"
            />

        <EditText
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:hint="Enter Fullname"
            android:layout_marginHorizontal="16dp"
            android:id="@+id/etName"
            />

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Email"
```

```

        android:layout_marginStart="16dp"
        android:layout_marginTop="24dp"
        android:textSize="16dp"
    />

    <EditText
        android:id="@+id/etEmail"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="abc@gmail.com"
        android:layout_marginHorizontal="16dp"
    />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Phone no"
        android:layout_marginStart="16dp"
        android:layout_marginTop="24dp"
        android:textSize="16dp"
    />

    <EditText
        android:id="@+id/etPhone"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="+977-9800000000"
        android:layout_marginHorizontal="16dp"
    />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Gender"
        android:layout_marginStart="16dp"
        android:layout_marginTop="24dp"
        android:textSize="16dp"
    />

    <RadioGroup
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:orientation="horizontal"
        android:layout_marginHorizontal="16dp"
    >

        <RadioButton
            android:id="@+id/rbMale"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:text="Male"
        />

        <RadioButton
            android:id="@+id/rbFemale"
            android:layout_width="wrap_content"
            android:layout_height="match_parent"
            android:text="Female"
        />

    </RadioGroup>

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Username"
        android:layout_marginHorizontal="16dp"

```

```

        android:layout_marginTop="16dp"
    />

    <EditText
        android:id="@+id/etUsername"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter your username"
        android:layout_marginHorizontal="16dp"
    />

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Password"
        android:layout_marginHorizontal="16dp"
        android:layout_marginTop="16dp"
    />

    <EditText
        android:id="@+id/etPassword"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter your Password"
        android:layout_marginHorizontal="16dp"
    />

    <Button
        android:id="@+id/btRegisters"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Register"
        android:layout_marginHorizontal="16dp"
        android:layout_marginTop="16dp"
    />

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Already have an account?"
        android:textAlignment="center"
    />

    <Button
        android:id="@+id/btLogin"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="Login here"
        android:layout_marginHorizontal="16dp"
    />

</LinearLayout>
</ScrollView>

```

Overall, the code represents a basic login and registration functionality in an Android application. It consists of two activities (LoginActivity and RegisterActivity) and their corresponding layout files (activity\_login.xml and activity\_register.xml). The LoginActivity handles user login, while the RegisterActivity handles user registration