Android Slips Solutions 1-10

Slip 1:

Q1 **Create a Simple Application which shows the Life Cycle of Activity**

Ans : XML file:

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<TextView

android:id="@+id/text\_view"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerInParent="true"

android:textSize="18sp"

android:textColor="#000" />

</RelativeLayout>

Java file:

import android.os.Bundle;

import android.util.Log;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private static final String TAG = "MainActivity";

private TextView textView;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

textView = findViewById(R.id.text\_view);

logLifecycle("onCreate");

}

@Override

protected void onStart() {

super.onStart();

logLifecycle("onStart");

}

@Override

protected void onResume() {

super.onResume();

logLifecycle("onResume");

}

@Override

protected void onPause() {

super.onPause();

logLifecycle("onPause");

}

@Override

protected void onStop() {

super.onStop();

logLifecycle("onStop");

}

@Override

protected void onDestroy() {

super.onDestroy();

logLifecycle("onDestroy");

}

@Override

protected void onRestart() {

super.onRestart();

logLifecycle("onRestart");

}

private void logLifecycle(String lifecycleEvent) {

Log.d(TAG, lifecycleEvent);

String currentText = textView.getText().toString();

currentText += lifecycleEvent + "\n";

textView.setText(currentText);

}

}

**Q2. Create an Android Application that demonstrate DatePicker and DatePickerDailog.**

Ans:

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<Button

android:id="@+id/btn\_pick\_date"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Pick Date"

android:layout\_centerInParent="true" />

</RelativeLayout>

import android.app.DatePickerDialog;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.DatePicker;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

import java.util.Calendar;

public class MainActivity extends AppCompatActivity {

private Button pickDateButton;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

pickDateButton = findViewById(R.id.btn\_pick\_date);

pickDateButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

showDatePickerDialog();

}

});

}

private void showDatePickerDialog() {

// Get current date

final Calendar calendar = Calendar.getInstance();

int year = calendar.get(Calendar.YEAR);

int month = calendar.get(Calendar.MONTH);

int dayOfMonth = calendar.get(Calendar.DAY\_OF\_MONTH);

// Create DatePickerDialog and set listener

DatePickerDialog datePickerDialog = new DatePickerDialog(this,

new DatePickerDialog.OnDateSetListener() {

@Override

public void onDateSet(DatePicker view, int year, int month, int dayOfMonth) {

// Display the selected date

String selectedDate = dayOfMonth + "/" + (month + 1) + "/" + year;

Toast.makeText(MainActivity.this, "Selected Date: " + selectedDate, Toast.LENGTH\_SHORT).show();

}

}, year, month, dayOfMonth);

// Show the dialog

datePickerDialog.show();

}

}

Slip 2

Q1. **Create a Simple Application, which reads a positive number from the user and display its factorial value in another activity**

.**Design the Layout for Number Input Activity (activity\_input\_number.xml)**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".InputNumberActivity">

<EditText

android:id="@+id/edit\_text\_number"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="50dp"

android:inputType="number"

android:hint="Enter a positive number" />

<Button

android:id="@+id/btn\_submit"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layoutbelow="@id/edit\_text\_number"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="20dp"

android:text="Submit" />

</RelativeLayout>

**Design the Layout for Factorial Display Activity (activity\_display\_factorial.xml)**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".DisplayFactorialActivity">

<TextView

android:id="@+id/text\_view\_factorial"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerInParent="true"

android:textSize="18sp"

android:textColor="#000" />

</RelativeLayout>

**Implement the Input Number Activity (InputNumberActivity.java)**

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import androidx.appcompat.app.AppCompatActivity;

public class InputNumberActivity extends AppCompatActivity {

private EditText editTextNumber;

private Button btnSubmit;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_input\_number);

editTextNumber = findViewById(R.id.edit\_text\_number);

btnSubmit = findViewById(R.id.btn\_submit);

btnSubmit.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String numberStr = editTextNumber.getText().toString().trim();

if (!numberStr.isEmpty()) {

int number = Integer.parseInt(numberStr);

if (number > 0) {

// Start DisplayFactorialActivity and pass the number

Intent intent = new Intent(InputNumberActivity.this, DisplayFactorialActivity.class);

intent.putExtra("number", number);

startActivity(intent);

} else {

editTextNumber.setError("Please enter a positive number");

}

} else {

editTextNumber.setError("Please enter a number");

}

}

});

}

}**Implement the Factorial Display Activity (DisplayFactorialActivity.java)**

import android.os.Bundle;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class DisplayFactorialActivity extends AppCompatActivity {

private TextView textViewFactorial;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_display\_factorial);

textViewFactorial = findViewById(R.id.text\_view\_factorial);

// Retrieve the number passed from InputNumberActivity

int number = getIntent().getIntExtra("number", 0);

// Calculate factorial

long factorial = calculateFactorial(number);

// Display factorial

textViewFactorial.setText("Factorial of " + number + " is " + factorial);

}

private long calculateFactorial(int n) {

if (n == 0)

return 1;

else

return n \* calculateFactorial(n - 1);

}

}

**Declare Activities in Manifest**: Open **AndroidManifest.xml**

<activity android:name=".InputNumberActivity" />

<activity android:name=".DisplayFactorialActivity" />

Q2. **Create an Android application that plays an audio(song) in the background. Audio will notbe stopped even if you switch to another activity. To stop the audio, you need to stop the service.**

import android.app.Service;

import android.content.Intent; import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

// Start the AudioService

startService(new Intent(this, AudioService.class));

}

// Method to stop the service (called when a button is clicked, for example)

public void stopAudioService(View view) {

stopService(new Intent(this, AudioService.class));

}

}

import android.media.MediaPlayer;

import android.os.IBinder;

import androidx.annotation.Nullable;

public class AudioService extends Service {

private MediaPlayer mediaPlayer;

@Override

public void onCreate() {

super.onCreate();

mediaPlayer = MediaPlayer.create(this, R.raw.song);

mediaPlayer.setLooping(true); // Loop the audio

mediaPlayer.start(); // Start playing the audio

}

@Override

public int onStartCommand(Intent intent, int flags, int startId) {

return START\_STICKY;

}

@Override

public void onDestroy() {

super.onDestroy();

if (mediaPlayer != null) {

mediaPlayer.stop(); // Stop the audio when the service is destroyed

mediaPlayer.release();

}

}

@Nullable

@Override

public IBinder onBind(Intent intent) {

return null;

}

}

// Open **AndroidManifest.xml** and declare the **AudioService** inside the **<application>**

<service android:name=".AudioService" />

**Add a Button to Stop the Service**:

<Button

android:id="@+id/stop\_audio\_button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Stop Audio Service"

android:onClick="stopAudioService" />

Sllip3

Q1. **Create an Android Application that will change color of the College Name on click ofPush Button and change the font size, font style of text view using xml.**

* Open **activity\_main.xml** from the **res/layout** directory.

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:padding="16dp">

<TextView

android:id="@+id/text\_college\_name"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="My College"

android:textSize="24sp"

android:textStyle="bold"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="50dp" />

<Button

android:id="@+id/btn\_change\_color"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Change Color"

android:layout\_below="@id/text\_college\_name"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="20dp" />

</RelativeLayout>

Create a new XML file (**text\_color\_selector.xml**)

<selector xmlns:android="http://schemas.android.com/apk/res/android">

<item android:state\_pressed="true" android:color="@android:color/holo\_blue\_dark" />

<item android:color="@android:color/black" />

</selector>

**Open MainActivity.java**

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private TextView collegeNameTextView;

private Button changeColorButton;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

collegeNameTextView = findViewById(R.id.text\_college\_name);

changeColorButton = findViewById(R.id.btn\_change\_color);

changeColorButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

collegeNameTextView.setTextColor(getResources().getColorStateList(R.color.text\_color\_selector));

collegeNameTextView.setTextSize(30); // Change font size to 30sp

collegeNameTextView.setTypeface(null, Typeface.ITALIC); // Change font style to italic

}

});

}

}

**Q2. Create an Android Application to find the factorial of a number and Display the Resulton Alert Box**

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

// Call the method to calculate factorial and display result

int number = 5; // Example: Factorial of 5

int factorial = calculateFactorial(number);

displayResult(factorial);

}

private int calculateFactorial(int n) {

if (n == 0) {

return 1;

}

int factorial = 1;

for (int i = 1; i <= n; i++) {

factorial \*= i;

}

return factorial;

}

private void displayResult(int factorial) {

AlertDialog.Builder builder = new AlertDialog.Builder(this);

builder.setTitle("Factorial Result");

builder.setMessage("The factorial of the number is: " + factorial);

builder.setPositiveButton("OK", new DialogInterface.OnClickListener() {

@Override

public void onClick(DialogInterface dialog, int which) {

// Close the dialog if needed

dialog.dismiss();

}

});

builder.show();

}

}

Slip 4

Q1. **Create a Simple Application, that performs Arithmetic Operations. (Use constraint layout)**

<!-- activity\_main.xml -->

<?xml version="1.0" encoding="utf-8"?>

<androidx.constraintlayout.widget.ConstraintLayout 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"

tools:context=".MainActivity">

<EditText

android:id="@+id/editTextNumber1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="number"

app:layout\_constraintBottom\_toTopOf="@+id/textView2"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.5"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

<EditText

android:id="@+id/editTextNumber2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="number"

app:layout\_constraintBottom\_toTopOf="@+id/textView3"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.5"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/editTextNumber1" />

<Button

android:id="@+id/buttonAdd"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Add"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/editTextNumber2" />

<Button

android:id="@+id/buttonSubtract"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Subtract"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/buttonAdd" />

<Button

android:id="@+id/buttonMultiply"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Multiply"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/buttonSubtract" />

<Button

android:id="@+id/buttonDivide"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Divide"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/buttonMultiply" />

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Number 1"

app:layout\_constraintBottom\_toTopOf="@+id/editTextNumber1"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.5"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

<TextView

android:id="@+id/textView3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Number 2"

app:layout\_constraintBottom\_toTopOf="@+id/editTextNumber2"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.5"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/textView2" />

<TextView

android:id="@+id/textViewResult"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Result"

app:layout\_constraintBottom\_toTopOf="@+id/buttonAdd"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.5"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toBottomOf="@+id/buttonDivide" />

</androidx.constraintlayout.widget.ConstraintLayout>

Java file

package com.example.arithmeticoperations;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

EditText editTextNumber1, editTextNumber2;

TextView textViewResult;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

editTextNumber1 = findViewById(R.id.editTextNumber1);

editTextNumber2 = findViewById(R.id.editTextNumber2);

textViewResult = findViewById(R.id.textViewResult);

Button buttonAdd = findViewById(R.id.buttonAdd);

Button buttonSubtract = findViewById(R.id.buttonSubtract);

Button buttonMultiply = findViewById(R.id.buttonMultiply);

Button buttonDivide = findViewById(R.id.buttonDivide);

buttonAdd.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

performOperation('+');

}

});

buttonSubtract.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

performOperation('-');

}

});

buttonMultiply.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

performOperation('\*');

}

});

buttonDivide.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

performOperation('/');

}

});

}

private void performOperation(char operation) {

String num1Str = editTextNumber1.getText().toString();

String num2Str = editTextNumber2.getText().toString();

if (num1Str.isEmpty() || num2Str.isEmpty()) {

textViewResult.setText("Please enter both numbers.");

return;

}

double num1 = Double.parseDouble(num1Str);

double num2 = Double.parseDouble(num2Str);

double result = 0;

switch (operation) {

case '+':

result = num1 + num2;

break;

case '-':

result = num1 - num2;

break;

case '\*':

result = num1 \* num2;

break;

case '/':

if (num2 == 0) {

textViewResult.setText("Cannot divide by zero.");

return;

}

result = num1 / num2;

break;

}

textViewResult.setText("Result: " + result);

}

}

Q2. **Create an Android Application that sends the Notification on click of the button and displays the notification message on the second activity**

**MainActivity.java**

import android.app.NotificationChannel;

import android.app.NotificationManager;

import android.app.PendingIntent;

import android.content.Context;

import android.content.Intent;

import android.os.Build;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import androidx.appcompat.app.AppCompatActivity;

import androidx.core.app.NotificationCompat;

import androidx.core.app.NotificationManagerCompat;

public class MainActivity extends AppCompatActivity {

private static final String CHANNEL\_ID = "notification\_channel";

private static final int NOTIFICATION\_ID = 101;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

createNotificationChannel();

Button button = findViewById(R.id.button);

button.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

sendNotification();

}

});

}

private void createNotificationChannel() {

if (Build.VERSION.SDK\_INT >= Build.VERSION\_CODES.O) {

CharSequence name = getString(R.string.channel\_name);

String description = getString(R.string.channel\_description);

int importance = NotificationManager.IMPORTANCE\_DEFAULT;

NotificationChannel channel = new NotificationChannel(CHANNEL\_ID, name, importance);

channel.setDescription(description);

NotificationManager notificationManager = getSystemService(NotificationManager.class);

notificationManager.createNotificationChannel(channel);

}

}

private void sendNotification() {

Intent intent = new Intent(this, NotificationActivity.class);

intent.setFlags(Intent.FLAG\_ACTIVITY\_NEW\_TASK | Intent.FLAG\_ACTIVITY\_CLEAR\_TASK);

PendingIntent pendingIntent = PendingIntent.getActivity(this, 0, intent, 0);

NotificationCompat.Builder builder = new NotificationCompat.Builder(this, CHANNEL\_ID)

.setSmallIcon(R.drawable.ic\_notification)

.setContentTitle(getString(R.string.notification\_title))

.setContentText(getString(R.string.notification\_message))

.setPriority(NotificationCompat.PRIORITY\_DEFAULT)

.setContentIntent(pendingIntent)

.setAutoCancel(true);

NotificationManagerCompat notificationManager = NotificationManagerCompat.from(this);

notificationManager.notify(NOTIFICATION\_ID, builder.build());

}

}

**NotificationActivity.java**

import android.os.Bundle;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class NotificationActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_notification);

String message = getIntent().getStringExtra("message");

TextView textViewMessage = findViewById(R.id.textViewMessage);

textViewMessage.setText(message);

}

}

**activity\_main.xml (MainActivity layout)**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<Button

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Send Notification"

android:layout\_centerInParent="true"/>

</RelativeLayout>

**activity\_notification.xml (NotificationActivity layout)**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".NotificationActivity">

<TextView

android:id="@+id/textViewMessage"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text=""

android:layout\_centerInParent="true"/>

</RelativeLayout>

**Slip 5**

**Q1. Create an Android Application to accept two numbers and find power and Average. Display the result on the next activity on Button click**

**MainActivity.java**

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

EditText editTextNumber1, editTextNumber2;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

editTextNumber1 = findViewById(R.id.editTextNumber1);

editTextNumber2 = findViewById(R.id.editTextNumber2);

Button buttonCalculate = findViewById(R.id.buttonCalculate);

buttonCalculate.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

calculateAndDisplay();

}

});

}

private void calculateAndDisplay() {

double num1 = Double.parseDouble(editTextNumber1.getText().toString());

double num2 = Double.parseDouble(editTextNumber2.getText().toString());

// Calculate power

double powerResult = Math.pow(num1, num2);

// Calculate average

double averageResult = (num1 + num2) / 2;

Intent intent = new Intent(this, ResultActivity.class);

intent.putExtra("powerResult", powerResult);

intent.putExtra("averageResult", averageResult);

startActivity(intent);

}

}  
**ResultActivity.java**

import android.os.Bundle;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class ResultActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_result);

double powerResult = getIntent().getDoubleExtra("powerResult", 0);

double averageResult = getIntent().getDoubleExtra("averageResult", 0);

TextView textViewPowerResult = findViewById(R.id.textViewPowerResult);

textViewPowerResult.setText("Power Result: " + powerResult);

TextView textViewAverageResult = findViewById(R.id.textViewAverageResult);

textViewAverageResult.setText("Average Result: " + averageResult);

}

}

**activity\_main.xml (activity\_main layout)**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<EditText

android:id="@+id/editTextNumber1"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter number 1"

android:inputType="numberDecimal" />

<EditText

android:id="@+id/editTextNumber2"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_below="@id/editTextNumber1"

android:hint="Enter number 2"

android:inputType="numberDecimal" />

<Button

android:id="@+id/buttonCalculate"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/editTextNumber2"

android:layout\_centerHorizontal="true"

android:text="Calculate" />

</RelativeLayout>

**activity\_result.xml (activity\_result layout)**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".ResultActivity">

<TextView

android:id="@+id/textViewPowerResult"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text=""

android:layout\_centerInParent="true"/>

<TextView

android:id="@+id/textViewAverageResult"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/textViewPowerResult"

android:text=""

android:layout\_centerHorizontal="true"/>

</RelativeLayout>

**Q2. Create an Android Application to perform Zoom In, Zoom Out operation and display Satellite view, on Google Map.**

**Add Google Play Services Dependency**

**build.gradle** file.

implementation 'com.google.android.gms:play-services-maps:20.1.0'

**Create Layout File (activity\_maps.xml)**

<!-- activity\_maps.xml -->

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MapsActivity">

<com.google.android.gms.maps.MapView

android:id="@+id/mapView"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:apiKey="@string/google\_maps\_key" />

</RelativeLayout>

**Set Up Google Maps in Activity (MapsActivity.java)**

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;

import com.google.android.gms.maps.CameraUpdateFactory;

import com.google.android.gms.maps.GoogleMap;

import com.google.android.gms.maps.MapView;

import com.google.android.gms.maps.OnMapReadyCallback;

import com.google.android.gms.maps.SupportMapFragment;

import com.google.android.gms.maps.model.LatLng;

public class MapsActivity extends AppCompatActivity implements OnMapReadyCallback {

private GoogleMap mMap;

private MapView mMapView;

private Button zoomInButton, zoomOutButton;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_maps);

mMapView = findViewById(R.id.mapView);

zoomInButton = findViewById(R.id.zoomInButton);

zoomOutButton = findViewById(R.id.zoomOutButton);

mMapView.onCreate(savedInstanceState);

mMapView.onResume();

mMapView.getMapAsync(this);

zoomInButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

if (mMap != null) {

mMap.animateCamera(CameraUpdateFactory.zoomIn());

}

}

});

zoomOutButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

if (mMap != null) {

mMap.animateCamera(CameraUpdateFactory.zoomOut());

}

}

});

}

@Override

public void onMapReady(GoogleMap googleMap) {

mMap = googleMap;

mMap.setMapType(GoogleMap.MAP\_TYPE\_SATELLITE); // Set map type to satellite

// Add a marker in your preferred location

LatLng location = new LatLng(40.7128, -74.0060); // Example: New York City

mMap.moveCamera(CameraUpdateFactory.newLatLngZoom(location, 12)); // Zoom level 12

}

@Override

public void onResume() {

super.onResume();

mMapView.onResume();

}

@Override

public void onPause() {

super.onPause();

mMapView.onPause();

}

@Override

public void onDestroy() {

super.onDestroy();

mMapView.onDestroy();

}

@Override

public void onLowMemory() {

super.onLowMemory();

mMapView.onLowMemory();

}

}

**Slip 6**

**Q1.**

**Create a Simple Application Which Send ―Hello! message from one activity to anotherwith help of Button (Use Intent)**

**MainActivity.java**  
import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

Button sendButton = findViewById(R.id.sendButton);

sendButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

sendMessage();

}

});

}

private void sendMessage() {

Intent intent = new Intent(this, DisplayMessageActivity.class);

intent.putExtra("message", "Hello!");

startActivity(intent);

}

}

**DisplayMessageActivity.java**

import android.content.Intent;

import android.os.Bundle;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class DisplayMessageActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_display\_message);

Intent intent = getIntent();

String message = intent.getStringExtra("message");

TextView textViewMessage = findViewById(R.id.textViewMessage);

textViewMessage.setText(message);

}

}

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<Button

android:id="@+id/sendButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerInParent="true"

android:text="Send Message" />

</RelativeLayout>

**activity\_display\_message.xml**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".DisplayMessageActivity">

<TextView

android:id="@+id/textViewMessage"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text=""

android:layout\_centerInParent="true"/>

</RelativeLayout>

**Q2.**

**Create an Android Application that Demonstrates ListView and Onclick of List Displaythe Toast**.

**MainActivity.java**

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.ListView;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private ListView listView;

private String[] items = {"Item 1", "Item 2", "Item 3", "Item 4", "Item 5"};

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

listView = findViewById(R.id.listView);

ArrayAdapter<String> adapter = new ArrayAdapter<>(this,

android.R.layout.simple\_list\_item\_1, android.R.id.text1, items);

listView.setAdapter(adapter);

listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {

@Override

public void onItemClick(AdapterView<?> parent, View view, int position, long id) {

String selectedItem = (String) parent.getItemAtPosition(position);

showToast(selectedItem);

}

});

}

private void showToast(String message) {

Toast.makeText(this, "You clicked: " + message, Toast.LENGTH\_SHORT).show();

}

}

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<ListView

android:id="@+id/listView"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent" />

</RelativeLayout>

Slip 7

Q1.

**Create an Android Application that Demonstrate Radio Button.**

**MainActivity.java**

import android.os.Bundle;

import android.widget.RadioButton;

import android.widget.RadioGroup;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private RadioGroup radioGroup;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

radioGroup = findViewById(R.id.radioGroup);

radioGroup.setOnCheckedChangeListener(new RadioGroup.OnCheckedChangeListener() {

@Override

public void onCheckedChanged(RadioGroup group, int checkedId) {

RadioButton radioButton = findViewById(checkedId);

if (radioButton != null) {

String text = radioButton.getText().toString();

showToast("You selected: " + text);

}

}

});

}

private void showToast(String message) {

Toast.makeText(this, message, Toast.LENGTH\_SHORT).show();

}

}

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<RadioGroup

android:id="@+id/radioGroup"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerInParent="true"

android:orientation="vertical">

<RadioButton

android:id="@+id/radioButtonOption1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Option 1" />

<RadioButton

android:id="@+id/radioButtonOption2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Option 2" />

<RadioButton

android:id="@+id/radioButtonOption3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Option 3" />

</RadioGroup>

</RelativeLayout>

Q2. **Write an android code to turn ON /OFF the Wi-Fi**

import android.content.Context;

import android.net.wifi.WifiManager;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private WifiManager wifiManager;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

wifiManager = (WifiManager) getApplicationContext().getSystemService(Context.WIFI\_SERVICE);

Button buttonTurnOn = findViewById(R.id.buttonTurnOn);

Button buttonTurnOff = findViewById(R.id.buttonTurnOff);

buttonTurnOn.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

turnOnWifi();

}

});

buttonTurnOff.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

turnOffWifi();

}

});

}

private void turnOnWifi() {

if (!wifiManager.isWifiEnabled()) {

wifiManager.setWifiEnabled(true);

}

}

private void turnOffWifi() {

if (wifiManager.isWifiEnabled()) {

wifiManager.setWifiEnabled(false);

}

}

}

**activity\_main.xml**  
<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<Button

android:id="@+id/buttonTurnOn"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Turn On Wi-Fi"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="50dp"/>

<Button

android:id="@+id/buttonTurnOff"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Turn Off Wi-Fi"

android:layout\_below="@id/buttonTurnOn"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="20dp"/>

</RelativeLayout>

Make sure to add the following permissions to your AndroidManifest.xml file:

<uses-permission android:name="android.permission.CHANGE\_WIFI\_STATE" />

<uses-permission android:name="android.permission.ACCESS\_WIFI\_STATE" />

Slip 8

Q1. **Create an Android App with Login Screen. On successful login, gives message go to next Activity (Without Using Database& use Table Layout).**

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private EditText editTextUsername, editTextPassword;

private Button buttonLogin;

// Hardcoded username and password for demonstration

private static final String USERNAME = "admin";

private static final String PASSWORD = "admin123";

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

editTextUsername = findViewById(R.id.editTextUsername);

editTextPassword = findViewById(R.id.editTextPassword);

buttonLogin = findViewById(R.id.buttonLogin);

buttonLogin.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

login();

}

});

}

private void login() {

String username = editTextUsername.getText().toString().trim();

String password = editTextPassword.getText().toString().trim();

if (username.equals(USERNAME) && password.equals(PASSWORD)) {

Toast.makeText(this, "Login successful!", Toast.LENGTH\_SHORT).show();

openNextActivity();

} else {

Toast.makeText(this, "Invalid username or password!", Toast.LENGTH\_SHORT).show();

}

}

private void openNextActivity() {

Intent intent = new Intent(this, NextActivity.class);

startActivity(intent);

finish();

}

}

**NextActivity.java**

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

public class NextActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_next);

}

}

**activity\_main.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:gravity="center"

android:orientation="vertical">

<TableLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_margin="16dp">

<TableRow>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Username:" />

<EditText

android:id="@+id/editTextUsername"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:hint="Enter username" />

</TableRow>

<TableRow>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Password:" />

<EditText

android:id="@+id/editTextPassword"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:inputType="textPassword"

android:hint="Enter password" />

</TableRow>

<TableRow>

<Button

android:id="@+id/buttonLogin"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Login" />

</TableRow>

</TableLayout>

</LinearLayout>

**activity\_next.xml (NextActivity layout)**

<?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:gravity="center"

android:orientation="vertical">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Welcome to Next Activity!"

android:textSize="20sp"

android:textStyle="bold"

android:padding="16dp"/>

</LinearLayout>

Q2. **Create application to send email with attachment.**

**AndroidManifest.xml**

<uses-permission android:name="android.permission.INTERNET" />

<uses-permission android:name="android.permission.WRITE\_EXTERNAL\_STORAGE" />

<application

...>

<provider

android:name="androidx.core.content.FileProvider"

android:authorities="${applicationId}.fileprovider"

android:exported="false"

android:grantUriPermissions="true">

<meta-data

android:name="android.support.FILE\_PROVIDER\_PATHS"

android:resource="@xml/file\_paths" />

</provider>

</application>

**res/xml/file\_paths.xml**

<?xml version="1.0" encoding="utf-8"?>

<paths xmlns:android="http://schemas.android.com/apk/res/android">

<external-path name="external\_files" path="."/>

</paths>

**MainActivity.java**

import android.content.Intent;

import android.net.Uri;

import android.os.Bundle;

import android.os.Environment;

import android.view.View;

import android.widget.Button;

import androidx.appcompat.app.AppCompatActivity;

import androidx.core.content.FileProvider;

import java.io.File;

public class MainActivity extends AppCompatActivity {

private static final int EMAIL\_REQUEST\_CODE = 101;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

Button buttonSendEmail = findViewById(R.id.buttonSendEmail);

buttonSendEmail.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

sendEmail();

}

});

}

private void sendEmail() {

Intent emailIntent = new Intent(Intent.ACTION\_SEND);

emailIntent.setType("text/plain");

emailIntent.putExtra(Intent.EXTRA\_EMAIL, new String[]{"recipient@example.com"});

emailIntent.putExtra(Intent.EXTRA\_SUBJECT, "Subject of the Email");

// Get the file path of the attachment

File file = new File(Environment.getExternalStorageDirectory(), "example.txt");

// Get the URI of the file using FileProvider

Uri uri = FileProvider.getUriForFile(this, getApplicationContext().getPackageName() + ".fileprovider", file);

// Grant read permission to the URI

emailIntent.addFlags(Intent.FLAG\_GRANT\_READ\_URI\_PERMISSION);

// Attach the file to the email

emailIntent.putExtra(Intent.EXTRA\_STREAM, uri);

// Verify if there's an app available to handle this intent

if (emailIntent.resolveActivity(getPackageManager()) != null) {

startActivityForResult(Intent.createChooser(emailIntent, "Send Email"), EMAIL\_REQUEST\_CODE);

}

}

}

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<Button

android:id="@+id/buttonSendEmail"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Send Email"

android:layout\_centerInParent="true"/>

</RelativeLayout>

Slip 9

Q1. **Write an Android application to accept two numbers from the user, and display them, but reject input if both numbers are greater than 10 and asks for two new numbers.**

**MainActivity.java**

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private EditText editTextNumber1, editTextNumber2;

private TextView textViewResult;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

editTextNumber1 = findViewById(R.id.editTextNumber1);

editTextNumber2 = findViewById(R.id.editTextNumber2);

textViewResult = findViewById(R.id.textViewResult);

Button buttonSubmit = findViewById(R.id.buttonSubmit);

buttonSubmit.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

validateAndDisplayNumbers();

}

});

}

private void validateAndDisplayNumbers() {

int num1 = Integer.parseInt(editTextNumber1.getText().toString());

int num2 = Integer.parseInt(editTextNumber2.getText().toString());

if (num1 <= 10 && num2 <= 10) {

textViewResult.setText("Number 1: " + num1 + "\nNumber 2: " + num2);

} else {

editTextNumber1.setText("");

editTextNumber2.setText("");

textViewResult.setText("Please enter two numbers less than or equal to 10.");

}

}

}

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<EditText

android:id="@+id/editTextNumber1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="50dp"

android:hint="Enter Number 1"

android:inputType="number"/>

<EditText

android:id="@+id/editTextNumber2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/editTextNumber1"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="20dp"

android:hint="Enter Number 2"

android:inputType="number"/>

<Button

android:id="@+id/buttonSubmit"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/editTextNumber2"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="20dp"

android:text="Submit"/>

<TextView

android:id="@+id/textViewResult"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/buttonSubmit"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="20dp"/>

</RelativeLayout>

**Q2. Write a program to find the specific location of an Android device and display details ofthe place like Address line, city with Geocoding**

**MainActivity.java**

import android.location.Address;

import android.location.Geocoder;

import android.location.Location;

import android.os.Bundle;

import android.widget.TextView;

import android.widget.Toast;

import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;

import com.google.android.gms.location.FusedLocationProviderClient;

import com.google.android.gms.location.LocationCallback;

import com.google.android.gms.location.LocationRequest;

import com.google.android.gms.location.LocationResult;

import com.google.android.gms.location.LocationServices;

import com.google.android.gms.maps.model.LatLng;

import java.io.IOException;

import java.util.List;

import java.util.Locale;

public class MainActivity extends AppCompatActivity {

private FusedLocationProviderClient fusedLocationProviderClient;

private LocationCallback locationCallback;

private TextView textViewLocationDetails;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

textViewLocationDetails = findViewById(R.id.textViewLocationDetails);

fusedLocationProviderClient = LocationServices.getFusedLocationProviderClient(this);

locationCallback = new LocationCallback() {

@Override

public void onLocationResult(LocationResult locationResult) {

if (locationResult == null) {

return;

}

for (Location location : locationResult.getLocations()) {

showLocationDetails(location);

}

}

};

requestLocationUpdates();

}

private void requestLocationUpdates() {

LocationRequest locationRequest = LocationRequest.create();

locationRequest.setPriority(LocationRequest.PRIORITY\_HIGH\_ACCURACY);

locationRequest.setInterval(10000); // 10 seconds

fusedLocationProviderClient.requestLocationUpdates(locationRequest, locationCallback, null);

}

private void showLocationDetails(Location location) {

Geocoder geocoder = new Geocoder(this, Locale.getDefault());

try {

List<Address> addresses = geocoder.getFromLocation(location.getLatitude(), location.getLongitude(), 1);

if (!addresses.isEmpty()) {

Address address = addresses.get(0);

String addressLine = address.getAddressLine(0);

String city = address.getLocality();

String country = address.getCountryName();

String postalCode = address.getPostalCode();

String details = "Address: " + addressLine + "\nCity: " + city + "\nCountry: " + country + "\nPostal Code: " + postalCode;

textViewLocationDetails.setText(details);

}

} catch (IOException e) {

e.printStackTrace();

}

}

@Override

protected void onPause() {

super.onPause();

fusedLocationProviderClient.removeLocationUpdates(locationCallback);

}

}

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<TextView

android:id="@+id/textViewLocationDetails"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerInParent="true"

android:padding="16dp"

android:text=""

android:textSize="16sp"/>

</RelativeLayout>

**Slip 10**

**Q1. Create an Android Application that Demonstrate Switch and Toggle Button**

**MainActivity.java**

import android.os.Bundle;

import android.view.View;

import android.widget.CompoundButton;

import android.widget.Switch;

import android.widget.Toast;

import android.widget.ToggleButton;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private Switch switchButton;

private ToggleButton toggleButton;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

switchButton = findViewById(R.id.switchButton);

toggleButton = findViewById(R.id.toggleButton);

switchButton.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {

@Override

public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {

if (isChecked) {

Toast.makeText(MainActivity.this, "Switch is ON", Toast.LENGTH\_SHORT).show();

} else {

Toast.makeText(MainActivity.this, "Switch is OFF", Toast.LENGTH\_SHORT).show();

}

}

});

toggleButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

if (toggleButton.isChecked()) {

Toast.makeText(MainActivity.this, "Toggle Button is ON", Toast.LENGTH\_SHORT).show();

} else {

Toast.makeText(MainActivity.this, "Toggle Button is OFF", Toast.LENGTH\_SHORT).show();

}

}

});

}

}

**activity\_main.xml**  
<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<Switch

android:id="@+id/switchButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Switch"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="50dp"/>

<ToggleButton

android:id="@+id/toggleButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Toggle Button"

android:layout\_below="@id/switchButton"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="50dp"/>

</RelativeLayout>

**Q2. Demonstrate Array Adapter using List View to display list of fruits.**

**MainActivity.java**  
import android.os.Bundle;

import android.widget.ArrayAdapter;

import android.widget.ListView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private ListView listViewFruits;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

listViewFruits = findViewById(R.id.listViewFruits);

// Array of fruits

String[] fruits = {"Apple", "Banana", "Orange", "Mango", "Grapes", "Strawberry", "Pineapple", "Watermelon", "Kiwi", "Peach"};

// Create an ArrayAdapter

ArrayAdapter<String> adapter = new ArrayAdapter<>(this, android.R.layout.simple\_list\_item\_1, fruits);

// Set the ArrayAdapter on the ListView

listViewFruits.setAdapter(adapter);

}

}

**activity\_main.xml**

<?xml version="1.0" encoding="utf-8"?>

<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"

xmlns:tools="http://schemas.android.com/tools"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<ListView

android:id="@+id/listViewFruits"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"/>

</RelativeLayout>