

ANDROID SLIPS SOLUTIONS 1-20

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.and
roid.com/apk/res/android"
```

```
xmlns:tools="http://schemas.androi
d.com/tools"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="match_pare
nt"
```

```
tools:context=".MainActivity">
```

```
<TextView
```

```
android:id="@+id/text_view"
```

```
android:layout_width="wrap_conte
nt"
```

```
android:layout_height="wrap_conte
nt"
```

```
android:layout_centerInParent="tru
e"
```

```
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.AppComp
atActivity;
```

```
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_m
ain);
```

```
        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 DatePickerDialog.

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_m
ain);

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_MO
NTH);

// 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:layout_below="@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.AppComp  
atActivity;
```

```
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 not be 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.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_m
ain);
```

```
// 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_butto
n"

```

```

    android:layout_width="wrap_conte
nt"

```

```

    android:layout_height="wrap_conte
nt"

```

```

        android:text="Stop Audio Service"

```

```

    android:onClick="stopAudioService"
/>

```

Sllip3

Q1. Create an Android Application that will change color of the College Name on click of Push

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_m
ain);
```

```
        collegeNameTextView =
findViewById(R.id.text_college_nam
e);
```

```
        changeColorButton =
findViewById(R.id.btn_change_color
);
```

```
changeColorButton.setOnClickListener(
new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```

```
        collegeNameTextView.setTextColor(
getResources().getColorStateList(R.c
olor.text_color_selector));
```

```
        collegeNameTextView.setTextSize(3
0); // Change font size to 30sp
```

```
        collegeNameTextView.setTypeface(n
ull, Typeface.ITALIC); // Change font
style to italic
```

```
    }
```

```
});
```

```
}
```

```
}
```

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

```
public class MainActivity extends
AppCompatActivity {

    @Override

    protected void onCreate(Bundle
savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_m
ain);

    // 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_toTop  
Of="@+id/textView3"
```

```
app:layout_constraintEnd_toEndOf=  
"parent"
```

```
app:layout_constraintHorizontal_bia  
s="0.5"
```

```
app:layout_constraintStart_toStartO  
f="parent"
```

```
app:layout_constraintTop_toBottom  
Of="@+id/editTextNumber1" />
```

```
<Button
```

```
    android:id="@+id/buttonAdd"
```

```
    android:layout_width="wrap_conte  
nt"
```

```
    android:layout_height="wrap_conte  
nt"
```

```
    android:text="Add"
```

```
app:layout_constraintEnd_toEndOf=  
"parent"
```

```
app:layout_constraintStart_toStartO  
f="parent"
```

```
app:layout_constraintTop_toBottom  
Of="@+id/editTextNumber2" />
```

```
<Button
```

```
    android:id="@+id/buttonSubtract"
```

```
    android:layout_width="wrap_conte  
nt"
```

```
    android:layout_height="wrap_conte  
nt"
```

```
    android:text="Subtract"
```

```
app:layout_constraintEnd_toEndOf=  
"parent"
```

```
app:layout_constraintStart_toStartO  
f="parent"
```

```
app:layout_constraintTop_toBottom  
Of="@+id/buttonAdd" />
```

```
<Button
```

```
    android:id="@+id/buttonMultiply"
```

```
    android:layout_width="wrap_conte  
nt"
```

```
    android:layout_height="wrap_conte  
nt"
```

```
    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_toTop  
Of="@+id/editTextNumber2"
```

```
app:layout_constraintHorizontal_bia  
s="0.5"
```

```
app:layout_constraintEnd_toEndOf=  
"parent"
```

```
app:layout_constraintStart_toStartO  
f="parent"
```

```
app:layout_constraintHorizontal_bia  
s="0.5"
```

```
app:layout_constraintTop_toBottom  
Of="@+id/buttonDivide" />
```

```
app:layout_constraintStart_toStartO  
f="parent"
```

```
</androidx.constraintlayout.widget.  
ConstraintLayout>
```

```
app:layout_constraintTop_toBottom  
Of="@+id/textView2" />
```

Java file

```
<TextView
```

```
package  
com.example.arithmeticoperations;
```

```
android:id="@+id/textViewResult"
```

```
import  
androidx.appcompat.app.AppComp  
atActivity;
```

```
android:layout_width="wrap_conte  
nt"
```

```
import android.os.Bundle;
```

```
android:layout_height="wrap_conte  
nt"
```

```
import android.view.View;
```

```
android:text="Result"
```

```
import android.widget.Button;
```

```
import android.widget.EditText;
```

```
import android.widget.TextView;
```

```
app:layout_constraintBottom_toTop  
Of="@+id/buttonAdd"
```

```
public class MainActivity extends  
AppCompatActivity {
```

```
app:layout_constraintEnd_toEndOf=  
"parent"
```

```
    EditText editTextNumber1,  
    editTextNumber2;
```

```

    TextView textViewResult;

    @Override
    protected void onCreate(Bundle
savedInstanceState) {

        super.onCreate(savedInstanceState);

```

```

        setContentView(R.layout.activity_m
ain);

```

```

        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(n
ew View.OnClickListener() {

```

```

            @Override

            public void onClick(View v) {
                performOperation('-');
            }
        });

```

```

        buttonMultiply.setOnClickListener(n
ew View.OnClickListener() {

```

```

            @Override

            public void onClick(View v) {
                performOperation('*');
            }
        });

```

```

        buttonDivide.setOnClickListener(ne
w 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_m
ain);


            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_descripti
on);

```

```
        int importance =  
NotificationManager.IMPORTANCE_  
DEFAULT;
```

```
        NotificationChannel channel  
= new  
NotificationChannel(CHANNEL_ID,  
name, importance);
```

```
channel.setDescription(description);
```

```
        NotificationManager  
notificationManager =  
getSystemService(NotificationMana  
ger.class);
```

```
notificationManager.createNotificati  
onChannel(channel);
```

```
    }
```

```
}
```

```
    private void sendNotification() {  
        Intent intent = new Intent(this,  
NotificationActivity.class);
```

```
intent.setFlags(Intent.FLAG_ACTIVIT  
Y_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_notifica  
tion)
```

```
.setContentTitle(getString(R.string.n  
otification_title))
```

```
.setContentText(getString(R.string.n  
otification_message))
```

```
.setPriority(NotificationCompat.PRI  
ORITY_DEFAULT)
```

```
.setContentIntent(pendingIntent)
```

```
.setAutoCancel(true);
```

```
        NotificationManagerCompat  
notificationManager =  
NotificationManagerCompat.from(t  
his);
```

```
notificationManager.notify(NOTIFIC  
ATION_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_no
tification);

    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.and
roid.com/apk/res/android"
```

```
xmlns:tools="http://schemas.androi
d.com/tools"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="match_pare
nt"
```

```
tools:context=".MainActivity">
```

```
<Button
```

```
android:id="@+id/button"
```

```
android:layout_width="wrap_conte
nt"
```

```
android:layout_height="wrap_conte
nt"
```

```
android:text="Send
Notification"
```

```
android:layout_centerInParent="tru
e"/>
```

```
</RelativeLayout>
```

activity_notification.xml (NotificationActivity layout)

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

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

```
xmlns:tools="http://schemas.androi
d.com/tools"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="match_pare
nt"
```

```
tools:context=".NotificationActivity"
>
```

```
<TextView
```

```
android:id="@+id/textViewMessage
"
```

```
android:layout_width="wrap_conte
nt"
```

```
android:layout_height="wrap_conte
nt"
```

```
android:text=""
```

```
android:layout_centerInParent="tru
e"/>
```

```
</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_m  
ain);
```

```
    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(editTextNumbe  
r1.getText().toString());
```

```
        double num2 =  
        Double.parseDouble(editTextNumbe  
r2.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_re
sult);

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

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

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

textViewPowerResult.setText("Powe
r Result: " + powerResult);

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

textViewAverageResult.setText("Ave
rage Result: " + averageResult);

```

```

    }
}

activity_main.xml (activity_main
layout)

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

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

xmlns:tools="http://schemas.androi
d.com/tools"

android:layout_width="match_pare
nt"

android:layout_height="match_pare
nt"

tools:context=".MainActivity">

    <EditText

android:id="@+id/editTextNumber1
"

android:layout_width="match_pare
nt"

android:layout_height="wrap_conte
nt"

        android:hint="Enter number 1"

```

```
android:inputType="numberDecima  
l" />
```

```
<EditText
```

```
android:id="@+id/editTextNumber2  
"
```

```
android:layout_width="match_pare  
nt"
```

```
android:layout_height="wrap_conte  
nt"
```

```
android:layout_below="@id/editTex  
tNumber1"
```

```
android:hint="Enter number 2"
```

```
android:inputType="numberDecima  
l" />
```

```
<Button
```

```
android:id="@+id/buttonCalculate"
```

```
android:layout_width="wrap_conte  
nt"
```

```
android:layout_height="wrap_conte  
nt"
```

```
android:layout_below="@id/editTex  
tNumber2"
```

```
android:layout_centerHorizontal="tr  
ue"
```

```
android:text="Calculate" />
```

```
</RelativeLayout>
```

activity_result.xml (activity_result
layout)

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

```
<RelativeLayout
```

```
xmlns:android="http://schemas.and  
roid.com/apk/res/android"
```

```
xmlns:tools="http://schemas.androi  
d.com/tools"
```

```
android:layout_width="match_pare  
nt"
```

```
android:layout_height="match_pare  
nt"
```

```
tools:context=".ResultActivity">
```

```
<TextView
```

```
android:id="@+id/textViewPowerRe  
sult"
```

```
android:layout_width="wrap_conte  
nt"
```

```
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_m
        aps);

```

```

        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(ne
        w View.OnClickListener() {

        @Override
        public void onClick(View v) {

```

```

        if (mMap != null) {

        mMap.animateCamera(CameraUpd
        ateFactory.zoomIn());

        }

        }

        });

```

```

        zoomOutButton.setOnClickListener(
        new View.OnClickListener() {

```

```

        @Override
        public void onClick(View v) {

        if (mMap != null) {

        mMap.animateCamera(CameraUpd
        ateFactory.zoomOut());

        }

        }

        });

        }

```

```

        @Override
        public void
        onMapReady(GoogleMap
        googleMap) {

```

```

        mMap = googleMap;

```

```

        mMap.setMapType(GoogleMap.MA
        P_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(CameraUpdate  
Factory.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 another with 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_m
ain);

        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.AppComp
atActivity;

public class DisplayMessageActivity
extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle
savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_di
splay_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.and
roid.com/apk/res/android"

```

```

xmlns:tools="http://schemas.androi
d.com/tools"

```

```

android:layout_width="match_pare
nt"

```

```

android:layout_height="match_pare
nt"

```

```

tools:context=".MainActivity">

```

```

<ListView

```

```

    android:id="@+id/listView"

```

```

android:layout_width="match_pare
nt"

```

```

android:layout_height="match_pare
nt" />

```

```

</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.AppComp
atActivity;

```

```

public class MainActivity extends
AppCompatActivity {

```

```

    private RadioGroup radioGroup;

```

```

    @Override

```

```

        protected void onCreate(Bundle
savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_m
ain);

```

```

        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.and
roid.com/apk/res/android"

xmlns:tools="http://schemas.androi
d.com/tools"

android:layout_width="match_pare
nt"

android:layout_height="match_pare
nt"

tools:context=".MainActivity">

        <RadioGroup

                android:id="@+id/radioGroup"

android:layout_width="wrap_conte
nt"

android:layout_height="wrap_conte
nt"

```

```
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_m  
ain);
```

```
    wifiManager = (WifiManager)  
getApplicationContext().getSystemS  
ervice(Context.WIFI_SERVICE);
```

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

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

```
buttonTurnOn.setOnClickListener(ne  
w View.OnClickListener() {
```

```
    @Override  
    public void onClick(View v) {  
        turnOnWifi();  
    }  
});
```

```
buttonTurnOff.setOnClickListener(ne  
w 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.and  
roid.com/apk/res/android"
```

```
xmlns:tools="http://schemas.androi  
d.com/tools"
```

```
android:layout_width="match_pare  
nt"
```

```
android:layout_height="match_pare  
nt"
```

```

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_m
        ain);

```

```

        editTextUsername =
        findViewById(R.id.editTextUsernam
        e);

        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_ne
xt);
```

```
    }
```

```
}
```

activity_main.xml

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

```
<LinearLayout
xmlns:android="http://schemas.and
roid.com/apk/res/android"
```

```
    android:layout_width="match_pare
nt"
```

```
    android:layout_height="match_pare
nt"
```

```
        android:gravity="center"
```

```
        android:orientation="vertical">
```

```
        <TableLayout
```

```
            android:layout_width="match_pare
nt"
```

```
            android:layout_height="wrap_conte
nt"
```

```
            android:layout_margin="16dp">
```


<pre> <TableRow> <TextView android:layout_width="wrap_conte nt" android:layout_height="wrap_conte nt" android:text="Username:" /> <EditText android:id="@+id/editTextUsernam e" android:layout_width="0dp" android:layout_height="wrap_conte nt" android:layout_weight="1" android:hint="Enter username" /> </TableRow> <TableRow> <TextView </pre>	<pre> android:layout_height="wrap_conte nt" android:text="Password:" /> <EditText android:id="@+id/editTextPassword " android:layout_width="0dp" android:layout_height="wrap_conte nt" android:layout_weight="1" android:inputType="textPassword" android:hint="Enter password" /> </TableRow> <TableRow> <Button android:id="@+id/buttonLogin" android:layout_width="wrap_conte nt" android:layout_height="wrap_conte nt" </pre>
---	--

```

        android:text="Login" />
    </TableRow>
</TableLayout>

</LinearLayout>

activity_next.xml (NextActivity
layout)

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

<LinearLayout
xmlns:android="http://schemas.and
roid.com/apk/res/android"

    android:layout_width="match_pare
nt"

    android:layout_height="match_pare
nt"

        android:gravity="center"
        android:orientation="vertical">

        <TextView

            android:layout_width="wrap_conte
nt"

            android:layout_height="wrap_conte
nt"

                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.conte
nt.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_m
ain);

```

```

                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.getExternalStorage
        eDirectory(), "example.txt");

        // Get the URI of the file using
        FileProvider

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

        // Grant read permission to the
        URI

```

```

emailIntent.addFlags(Intent.FLAG_G
RANT_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(getPack
        ageManager()) != null) {

```

```

        startActivityForResult(Intent.createC
        hooser(emailIntent, "Send Email"),
        EMAIL_REQUEST_CODE);

```

```

        }
    }
}

```

activity_main.xml

```

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

```

```

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

```

```

xmlns:tools="http://schemas.androi
d.com/tools"

```

```

android:layout_width="match_pare
nt"

```

```
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 of the 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_m
    ain);

    textViewLocationDetails =
    findViewById(R.id.textViewLocation
    Details);

    fusedLocationProviderClient =
    LocationServices.getFusedLocationP
    roviderClient(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(Location
        Request.PRIORITY_HIGH_ACCURACY
        );

        locationRequest.setInterval(10000);
        // 10 seconds

        fusedLocationProviderClient.request
        LocationUpdates(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(det
ails);

        }

    } catch (IOException e) {

        e.printStackTrace();

    }
}

```

```

    }

    @Override
    protected void onPause() {

        super.onPause();

        fusedLocationProviderClient.remove
LocationUpdates(locationCallback);

    }

}

activity_main.xml

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

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

xmlns:tools="http://schemas.androi
d.com/tools"

android:layout_width="match_pare
nt"

android:layout_height="match_pare
nt"

tools:context=".MainActivity">

    <TextView

        android:id="@+id/textViewLocation
Details"

```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:layout_centerInParent="true"
```

```
    android:padding="16dp"
```

```
    android:text=""
```

```
    android:textSize="16sp"/>
```

```
</RelativeLayout>
```

```
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);
```

Slip 10

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

MainActivity.java

```
import android.os.Bundle;
```

```
import android.view.View;
```

```
switchButton.setOnCheckedChangeListener(  
new  
CompoundButton.OnCheckedChangeListener() {
```

```

        @Override
        public void
onCheckedChanged(CompoundButt
on 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(ne
w 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.and
roid.com/apk/res/android"

```

```

xmlns:tools="http://schemas.androi
d.com/tools"

```

```

android:layout_width="match_pare
nt"

```

```

android:layout_height="match_pare
nt"

```

```

tools:context=".MainActivity">

```

```

<Switch

```

```

android:id="@+id/switchButton"

```

```

android:layout_width="wrap_conte
nt"

```

```

android:layout_height="wrap_conte
nt"

```

```

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.and
roid.com/apk/res/android"
```

```
xmlns:tools="http://schemas.androi
d.com/tools"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="match_pare
nt"
```

```
tools:context=".MainActivity">
```

```
<ListView
```

```
android:id="@+id/listViewFruits"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="match_pare
nt"/>
```

```
</RelativeLayout>
```

Slip11

Q.1 Create android application to change Font Size, Color and Font Family of String

Xml file

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

```
<androidx.constraintlayout.widget.C
onstraintLayout
```

```
xmlns:android="http://schemas.and
roid.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"

android:background="@color/colorAccent">

<TextView

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Hello TYBCA!"

android:fontFamily="cursive"

android:textSize="70dp"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintLeft_toLeftOf="parent"

app:layout_constraintRight_toRightOf="parent"

app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

```

Q.2 Create First Activity to accept information like Student First Name, Middle Name, Last Name,

Date of birth, Address, Email ID and display all information on Second Activity when user click on the Submit button.

FirstActivity.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 FirstActivity extends AppCompatActivity {

    EditText firstNameEditText,
        middleNameEditText,
        lastNameEditText, dobEditText,
        addressEditText, emailEditText;

    Button submitButton;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_first);

        // Initialize views

        firstNameEditText =
            findViewById(R.id.firstNameEditText);

```

```

        middleNameEditText =
findViewById(R.id.middleNameEditT
ext);

        lastNameEditText =
findViewById(R.id.lastNameEditText)
;

        dobEditText =
findViewById(R.id.dobEditText);

        addressEditText =
findViewById(R.id.addressEditText);

        emailEditText =
findViewById(R.id.emailEditText);

        submitButton =
findViewById(R.id.submitButton);

submitButton.setOnClickListener(ne
w View.OnClickListener() {

    @Override

    public void onClick(View v) {

        // Get user input

        String firstName =
firstNameEditText.getText().toString(
);

        String middleName =
middleNameEditText.getText().toStri
ng();

        String lastName =
lastNameEditText.getText().toString(
);

        String dob =
dobEditText.getText().toString();

        String address =
addressEditText.getText().toString();

```

```

        String email =
emailEditText.getText().toString();

        // Create Intent to pass data to
SecondActivity

        Intent intent = new
Intent(FirstActivity.this,
SecondActivity.class);

        intent.putExtra("firstName",
firstName);

        intent.putExtra("middleName",
middleName);

        intent.putExtra("lastName",
lastName);

        intent.putExtra("dob",
dob);

        intent.putExtra("address",
address);

        intent.putExtra("email",
email);

        // Start SecondActivity

        startActivity(intent);

    }

});

}

}

```

activity_first.xml

<!-- activity_first.xml -->


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

```
xmlns:tools="http://schemas.androi
d.com/tools"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="match_pare
nt"
```

```
tools:context=".FirstActivity">
```

```
<!-- Input fields for student
information -->
```

```
<!-- Add EditText fields and labels
for each input, and a Button for
submission -->
```

```
</RelativeLayout>
```

SecondActivity.java

```
import android.os.Bundle;
import android.widget.TextView;
import
androidx.appcompat.app.AppComp
atActivity;
```

```
public class SecondActivity extends
AppCompatActivity {
```

```
    TextView displayTextView;
```

```
    @Override
```

```
    protected void onCreate(Bundle
savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_se
cond);
```

```
        // Initialize views
```

```
        displayTextView =
findViewById(R.id.displayTextView);
```

```
        // Get data from Intent
```

```
        String firstName =
getIntent().getStringExtra("firstNam
e");
```

```
        String middleName =
getIntent().getStringExtra("middleN
ame");
```

```
        String lastName =
getIntent().getStringExtra("lastNam
e");
```

```
        String dob =
getIntent().getStringExtra("dob");
```

```
        String address =
getIntent().getStringExtra("address"
);
```

```
        String email =
getIntent().getStringExtra("email");
```

```
        // Display data
```

```
        String displayText = "Name: " +
firstName + " " + middleName + " "
+ lastName + "\n" +
```

```
        "Date of Birth: " + dob +
"\n" +
```

```
        "Address: " + address +
"\n" +
```

```
        "Email: " + email;
```

```
displayTextView.setText(displayText)
;
    }
}
```

activity_second.xml:

```
<!-- activity_second.xml -->

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

xmlns:tools="http://schemas.androi
d.com/tools"

android:layout_width="match_pare
nt"

android:layout_height="match_pare
nt"

    tools:context=".SecondActivity">

    <!-- TextView to display student
information -->

</RelativeLayout>
```

Slip no – 12

Q1.Create a Simple Application Which Send —Hi|| message from one activity to another with help of Button (Use Intent).

🔗 Open your AndroidManifest.xml file and add the ResultActivity declaration within code.

```
<application
```

```
<!-- Other application
configurations -->
```

```
<activity
android:name=".ResultActivity"/>

</application>
```

activity_main.xml

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

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

xmlns:tools="http://schemas.androi
d.com/tools"

android:layout_width="match_pare
nt"

android:layout_height="match_pare
nt"

    tools:context=".MainActivity">

<Button

    android:id="@+id/sendButton"

    android:layout_width="wrap_conte
nt"

    android:layout_height="wrap_conte
nt"

    android:text="Send Hi Message"
```

```
android:layout_centerInParent="true"/>
```

```
</RelativeLayout
```

MainActivity.java

```
package
com.example.activitylifecycle;

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_m
ain);

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

    sendButton.setOnClickListener(new
View.OnClickListener() {

        @Override

        public void onClick(View v) {

            // Create an Intent to start the
SecondActivity
```

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

```
// Put extra data (message) with
the intent
```

```
intent.putExtra("message", "Hi");
```

```
// Start the SecondActivity
```

```
startActivity(intent);
```

```
}
```

```
});
```

```
}
```

```
}
```

ResultActivity.java

```
package
com.example.activitylifecycle;

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_re
sult);

// Get the message from the intent
```

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

// Display the message in TextView

TextView messageTextView =
findViewById(R.id.messageTextView
);
messageTextView.setText(message);
}
}
```

activity_result.xml

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

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

```
xmlns:tools="http://schemas.androi
d.com/tools"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="match_pare
nt"
```

```
tools:context=".ResultActivity">
```

```
<TextView
```

```
android:id="@+id/messageTextView
"
```

```
android:layout_width="wrap_conte
nt"
```

```
android:layout_height="wrap_conte
nt"
```

```
android:textSize="24sp"
```

```
android:layout_centerInParent="tru
e"/>
```

```
</RelativeLayout>
```

Q2. Create a custom "Contact" layout to hold multiple pieces of information, including:

Photo, Name, Contact Number, E-mail id.

contact_item.xml

```
<LinearLayout
xmlns:android="http://schemas.and
roid.com/apk/res/android"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="wrap_conte
nt"
```

```
android:orientation="horizontal"
```

```
android:padding="16dp">
```

```
<!-- Photo -->
```

```
<ImageView
```

```
android:id="@+id/contactPhotoImageView"
```

```
    android:layout_width="80dp"
```

```
    android:layout_height="80dp"
```

```
android:src="@drawable/default_contact_image" />
```

```
<!-- Contact information -->
```

```
<LinearLayout
```

```
    android:layout_width="0dp"
```

```
android:layout_height="wrap_content"
```

```
    android:layout_weight="1"
```

```
    android:orientation="vertical"
```

```
android:layout_marginStart="16dp">
```

```
<!-- Name -->
```

```
<TextView
```

```
android:id="@+id/contactNameTextView"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
    android:text="Name"
```

```
    android:textSize="18sp"
```

```
    android:textStyle="bold" />
```

```
<!-- Contact number -->
```

```
<TextView
```

```
android:id="@+id/contactNumberTextView"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
    android:text="Contact Number"
```

```
    android:textSize="16sp" />
```

```
<!-- Email -->
```

```
<TextView
```

```
android:id="@+id/contactEmailTextView"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
    android:text="Email"
```

```
    android:textSize="16sp" />
```

</LinearLayout>

</LinearLayout>

Java file

```
import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.ImageView;
import android.widget.TextView;
import androidx.annotation.NonNull;
import androidx.recyclerview.widget.RecyclerView;
import java.util.List;
```

```
public class ContactAdapter extends
RecyclerView.Adapter<ContactAdapter.ContactViewHolder> {
```

```
    private List<Contact> contactList;
```

```
    private Context context;
```

```
    public
ContactAdapter(List<Contact>
contactList, Context context) {
        this.contactList = contactList;
```

```
        this.context = context;
    }
```

```
    @NonNull
```

```
    @Override
```

```
    public ContactViewHolder
onCreateViewHolder(@NonNull
ViewGroup parent, int viewType) {
        View view =
LayoutInflater.from(parent.getContext()).inflate(R.layout.contact_item,
parent, false);
        return new
ContactViewHolder(view);
    }
```

```
    @Override
```

```
    public void
onBindViewHolder(@NonNull
ContactViewHolder holder, int
position) {
```

```
        Contact contact =
contactList.get(position);
```

```
        holder.contactNameTextView.setText(
contact.getName());
```

```
        holder.contactNumberTextView.setText(
contact.getPhoneNumber());
```

```
        holder.contactEmailTextView.setText(
contact.getEmail());
```

```

        // Set photo here if you have
        photo data in your Contact object
    }

```

```

@Override

```

```

public int getItemCount() {
    return contactList.size();
}

```

```

public static class
ContactViewHolder extends
RecyclerView.ViewHolder {

```

```

    ImageView
    contactPhotoImageView;

```

```

    TextView
    contactNameTextView;

```

```

    TextView
    contactNumberTextView;

```

```

    TextView
    contactEmailTextView;

```

```

    public
    ContactViewHolder(@NonNull View
    itemView) {

```

```

        super(itemView);

        contactPhotoImageView =
        itemView.findViewById(R.id.contact
        PhotoImageView);

```

```

        contactNameTextView =
        itemView.findViewById(R.id.contact
        NameTextView);

```

```

        contactNumberTextView =
        itemView.findViewById(R.id.contact
        NumberTextView);

```

```

        contactEmailTextView =
        itemView.findViewById(R.id.contact
        EmailTextView);

```

```

    }

```

```

    }

```

```

}

```

Slip13 (Scroll view)

Q1. Create following Vertical Scroll View Creation in Android.

```

//Activity_Main.java

```

```

package com.example.slip22_1;

```

```

import
androidx.appcompat.app.AppCompatActivity;

```

```

import android.os.Bundle;

```

```

public class MainActivity extends
AppCompatActivity {

```

```

@Override

```

```

protected void onCreate(Bundle
savedInstanceState) {

```

```

    super.onCreate(savedInstanceState);

```

```

    setContentView(R.layout.activity_m
    ain);

```

```

}

```

```

}

```

```

//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">

<ScrollView

android:layout_width="match_parent"

android:layout_height="match_parent">

<LinearLayout

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:orientation="vertical">

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

```

```

android:text="Button 1" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 2" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 3" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 4" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 5" />

<Button

```


android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

By: Shivarkar S.Y. Page 28

android:text="Button 6" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 7" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 10" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 8" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 9" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 11" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 12" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

android:text="Button 13" />

<Button

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:layout_gravity="center"

```

android:text="Button 14" />
<Button
android:layout_width="wrap_conte
nt"
android:layout_height="wrap_conte
nt"
By: Shivarkar S.Y. Page 29
android:layout_gravity="center"
android:text="Button 15" />
<Button
android:layout_width="fill_parent"
android:layout_height="wrap_conte
nt"
android:text="Button 16" />
<Button
android:layout_width="wrap_conte
nt"
android:layout_height="wrap_conte
nt"
android:layout_gravity="center"
android:text="Button 17" />
<Button
android:layout_width="wrap_conte
nt"
android:layout_height="wrap_conte
nt"
android:layout_gravity="center"
android:text="Button 18" />
<Button

```

```

android:layout_width="wrap_conte
nt"
android:layout_height="wrap_conte
nt"
android:layout_gravity="center"
android:text="Button 19" />
<Button
android:layout_width="wrap_conte
nt"
android:layout_height="wrap_conte
nt"
android:layout_gravity="center"
android:text="Button 20" />
</LinearLayout>
</ScrollView>
</androidx.constraintlayout.widget.
ConstraintLayout>

```

Q2. Write an application to accept a teacher name from user and display the names of students along with subjects to whom they are teaching.

Create table Student (sno , s_name,s_class,s_addr)

Teacher (tno, t_name, qualification, experience)

Student-Teacher has Many to Many relationship.

Java file

```

import android.content.Context;

import
android.database.sqlite.SQLiteDatabase;

import
android.database.sqlite.SQLiteOpenHelper;

public class DatabaseHelper extends
SQLiteOpenHelper {

    private static final String
DATABASE_NAME = "school.db";

    private static final int
DATABASE_VERSION = 1;

    // Table names

    public static final String
TABLE_STUDENT = "Student";

    public static final String
TABLE_TEACHER = "Teacher";

    public static final String
TABLE_TEACHING_ASSIGNMENT =
"TeachingAssignment";

    // Common column names

    public static final String
COLUMN_ID = "id";

    // Student table - column names

    public static final String
COLUMN_S_NAME = "s_name";

```

```

    public static final String
COLUMN_S_CLASS = "s_class";

    public static final String
COLUMN_S_ADDR = "s_addr";

    // Teacher table - column names

    public static final String
COLUMN_T_NAME = "t_name";

    public static final String
COLUMN_QUALIFICATION =
"qualification";

    public static final String
COLUMN_EXPERIENCE =
"experience";

    // TeachingAssignment table -
column names

    public static final String
COLUMN_STUDENT_ID =
"student_id";

    public static final String
COLUMN_TEACHER_ID =
"teacher_id";

    // Create table statements

    private static final String
CREATE_TABLE_STUDENT = "CREATE
TABLE " + TABLE_STUDENT + "(" +

        COLUMN_ID + " INTEGER
PRIMARY KEY AUTOINCREMENT," +

        COLUMN_S_NAME + " TEXT,"
+

```

```

        COLUMN_S_CLASS + " TEXT,"
+
        COLUMN_S_ADDR + " TEXT"
+ "));

```

```

        private static final String
CREATE_TABLE_TEACHER = "CREATE
TABLE " + TABLE_TEACHER + "(" +
        COLUMN_ID + " INTEGER
PRIMARY KEY AUTOINCREMENT," +
        COLUMN_T_NAME + " TEXT,"
+
        COLUMN_QUALIFICATION + "
TEXT," +
        COLUMN_EXPERIENCE + "
TEXT" + "));

```

```

        private static final String
CREATE_TABLE_TEACHING_ASSIGN
MENT = "CREATE TABLE " +
TABLE_TEACHING_ASSIGNMENT +
"(" +
        COLUMN_ID + " INTEGER
PRIMARY KEY AUTOINCREMENT," +
        COLUMN_STUDENT_ID + "
INTEGER," +
        COLUMN_TEACHER_ID + "
INTEGER," +
        "FOREIGN KEY(" +
COLUMN_STUDENT_ID + ")
REFERENCES " + TABLE_STUDENT +
"(" + COLUMN_ID + ")," +
        "FOREIGN KEY(" +
COLUMN_TEACHER_ID + ")

```

```

REFERENCES " + TABLE_TEACHER +
"(" + COLUMN_ID + "));

```

```

        public DatabaseHelper(Context
context) {

```

```

            super(context,
DATABASE_NAME, null,
DATABASE_VERSION);
        }

```

```

        @Override

```

```

        public void
onCreate(SQLiteDatabase db) {

```

```

            // Creating required tables

```

```

            db.execSQL(CREATE_TABLE_STUDEN
T);

```

```

            db.execSQL(CREATE_TABLE_TEACHE
R);

```

```

            db.execSQL(CREATE_TABLE_TEACHI
NG_ASSIGNMENT);
        }

```

```

        @Override

```

```

        public void
onUpgrade(SQLiteDatabase db, int
oldVersion, int newVersion) {

```

```

            // Drop older tables if existed

```

```

            db.execSQL("DROP TABLE IF
EXISTS " + TABLE_STUDENT);

```

```

        db.execSQL("DROP TABLE IF EXISTS " + TABLE_TEACHER);

        db.execSQL("DROP TABLE IF EXISTS " +
TABLE_TEACHING_ASSIGNMENT);

        // Create tables again
        onCreate(db);
    }
}

```

Slip14

Q1. Create a Simple Application which shows Life Cycle of Activity. [10 Marks]

{Use log}.

MainActivity.java:

```

import android.os.Bundle;
import android.util.Log;
import
androidx.appcompat.app.AppCompatActivity;

```

```

public class MainActivity extends
AppCompatActivity {

```

```

    private static final String TAG =
"MainActivity";

```

@Override

```

        protected void onCreate(Bundle
savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_m
ain);

        Log.d(TAG, "onCreate");
    }

```

@Override

```

protected void onStart() {
    super.onStart();
    Log.d(TAG, "onStart");
}

```

@Override

```

protected void onResume() {
    super.onResume();
    Log.d(TAG, "onResume");
}

```

@Override

```

protected void onPause() {
    super.onPause();
    Log.d(TAG, "onPause");
}

```

@Override

```

protected void onStop() {
    super.onStop();
    Log.d(TAG, "onStop");
}

@Override
protected void onDestroy() {
    super.onDestroy();
    Log.d(TAG, "onDestroy");
}

@Override
protected void onRestart() {
    super.onRestart();
    Log.d(TAG, "onRestart");
}
}

```

activity_main.xml:

```

<!-- 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/textView"

        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

        android:text="Lifecycle events
will be displayed here"
        android:textSize="18sp"

        android:layout_centerInParent="true"/>

```

```

</RelativeLayout>

```

Manifest.xml:

```

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

    package="com.example.lifecycle">

    <application
        android:allowBackup="true"

```

```
android:icon="@mipmap/ic_launcher"
```

```
android:label="@string/app_name"
```

```
android:roundIcon="@mipmap/ic_launcher_round"
```

```
    android:supportsRtl="true"
```

```
android:theme="@style/AppTheme">
```

```
    <activity  
    android:name=".MainActivity">
```

```
        <intent-filter>
```

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

```
                <category  
                android:name="android.intent.category.LAUNCHER" />
```

```
        </intent-filter>
```

```
    </activity>
```

```
</application>
```

```
</manifest>
```

Q2. Create an Android application to send email.

MainActivity.java:

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

```
import android.net.Uri;
```

```
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 sendEmailButton =  
findViewById(R.id.sendEmailButton)  
;
```

```
        sendEmailButton.setOnClickListener(  
new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
```

```
                composeEmail();
```

```
            }
```

```
        });
```

```

    }

    public void composeEmail() {

        String[] recipients =
{"recipient@example.com"}; //
Change this to the recipient's email
address

        Intent intent = new
Intent(Intent.ACTION_SENDTO);

intent.setData(Uri.parse("mailto:"));

intent.putExtra(Intent.EXTRA_EMAIL
, recipients);

intent.putExtra(Intent.EXTRA_SUBJE
CT, "Subject of the Email");

intent.putExtra(Intent.EXTRA_TEXT,
"Body of the Email");

        if
(intent.resolveActivity(getPackageM
anager()) != null) {
            startActivity(intent);
        }
    }
}

```

activity_main.xml:

```

<!-- activity_main.xml -->

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

```

```

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

```

```

xmlns:tools="http://schemas.androi
d.com/tools"

```

```

android:layout_width="match_pare
nt"

```

```

android:layout_height="match_pare
nt"

```

```

tools:context=".MainActivity">

```

```

<Button

```

```

android:id="@+id/sendEmailButton
"

```

```

android:layout_width="wrap_conte
nt"

```

```

android:layout_height="wrap_conte
nt"

```

```

android:text="Send Email"

```

```

android:layout_centerInParent="tru
e"/>

```

```

</RelativeLayout>

```

AndroidManifest.xml:


```
<manifest
xmlns:android="http://schemas.and
roid.com/apk/res/android"
```

```
package="com.example.sendemail"
>
```

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

```
<application
```

```
    android:allowBackup="true"
```

```
    android:icon="@mipmap/ic_launch
er"
```

```
    android:label="@string/app_name"
```

```
    android:roundIcon="@mipmap/ic_l
auncher_round"
```

```
    android:supportsRtl="true"
```

```
    android:theme="@style/AppTheme
">
```

```
        <activity
```

```
        android:name=".MainActivity">
```

```
            <intent-filter>
```

```
                <action
```

```
                android:name="android.intent.actio
n.MAIN" />
```

```
                <category
                android:name="android.intent.cate
                gory.LAUNCHER" />
```

```
            </intent-filter>
```

```
        </activity>
```

```
    </application>
```

```
</manifest>
```

Slip15

Q1.Create Hello_world application that will display Hello world in middle of the screen in blue color

with white background with border

//activity_main.xml

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

```
<RelativeLayout
```

```
xmlns:android="http://schemas.and
roid.
```

```
com/apk/res/android"
```

```
xmlns:app="http://schemas.android
.com/
```

```
apk/res-auto"
```

```
xmlns:tools="http://schemas.androi
d.co
```

```
m/tools"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="match_parent"
```

```
android:background="#000000"
```

```
android:padding="10dp"
```

```
tools:context=".MainActivity">
```

```
<LinearLayout
```

```
android:layout_width="match_parent"
```

```
android:layout_height="match_parent"
```

```
android:orientation="horizontal"
```

```
android:background="@drawable/border">
```

```
<TextView
```

```
android:layout_width="fill_parent"
```

```
android:layout_height="fill_parent"
```

```
android:gravity="center_vertical|center
```

```
horizontal"
```

```
android:text="Hello World!"
```

```
android:background="#A00000FF"
```

```
android:textColor="#ffffff"
```

```
android:textSize="40sp" />
```

```
</LinearLayout>
```

```
</RelativeLayout>
```

```
//border.xml
```

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

```
<shape
```

```
xmlns:android="http://schemas.android.
```

```
com/apk/res/android"
```

```
By: Shivarkar S.Y. Page 42
```

```
android:shape="rectangle">
```

```
<stroke
```

```
android:width="20dp"
```

```
android:color="#ffffff"></stroke>
```

```
</shape>
```

```
slip15
```

```
Q2
```

```
//ActivityMain.java
```

```
package com.example.slip3_2;
```

```
import
```

```
androidx.appcompat.app.AppCompatActivity;
```

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

```
import android.os.Bundle;
```

```

import android.view.View;
import android.widget.Button;
import android.widget.EditText;
public class MainActivity extends
AppCompatActivity {
@Override

protected void onCreate(Bundle
savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_m
ain);

final EditText editText =
findViewById(R.id.name);

final EditText
text2=findViewById(R.id.sname);

final EditText
text3=findViewById(R.id.marks);


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

button.setOnClickListener(new
View.OnClickListener() {
@Override

public void onClick(View v) {

String name =
editText.getText().toString().trim();

String
sname=text2.getText().toString().tri
m();

String marks =
text3.getText().toString().trim();

```

```

Bundle bundle = new Bundle();
bundle.putString("value1",name);
bundle.putString("value2",sname);
bundle.putString("value3",marks);
Intent intent = new
Intent(MainActivity.this,
SecondActivirt.class);
intent.putExtras(bundle);
startActivity(intent);
}
});
}
}

```

//main_activity.xml

```

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

<LinearLayout

xmlns:android="http://schemas.and
roid.com/apk/res/android"

xmlns:app="http://schemas.android
.com/apk/res-auto"

xmlns:tools="http://schemas.androi
d.com/tools"

android:layout_width="match_pare
nt"

android:layout_height="match_pare
nt"

android:orientation="vertical"

tools:context=".MainActivity">

<EditText

```

```

android:id = "@+id/name"
android:layout_width =
"match_parent"
android:layout_height =
"wrap_content"
android:layout_gravity = "center"
android:hint = "Enter name"
android:inputType = "text" />
<EditText
android:id = "@+id/sname"
android:layout_width =
"match_parent"
android:layout_height =
"wrap_content"
android:layout_gravity = "center"
android:hint = "Enter surname"
android:inputType = "text" />
<EditText
android:id = "@+id/marks"
android:layout_width =
"match_parent"
android:layout_height =
"wrap_content"
android:layout_gravity = "center"
android:hint = "Enter marks"
android:inputType = "text" />
<Button
android:id = "@+id/button"
android:layout_width =
"wrap_content"

```

```

android:layout_height =
"wrap_content"
android:layout_gravity = "center"
android:layout_marginTop = "16dp"
android:text = "Next" />
</LinearLayout>
//SecondActivity.java
package com.example.slip3_2;
import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;
import
androidx.appcompat.app.AppCompatActivity;
public class SecondActivirt extends
AppCompatActivity {
@Override
protected void onCreate(Bundle
savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_se
cond);
Bundle bundle =
getIntent().getExtras();
if (bundle!= null) {
String value =
bundle.getString("value1");
String value2 =
bundle.getString("value2");
String value3 =
bundle.getString("value3");

```

```

TextView textView =
findViewById(R.id.text_view);

TextView textView2 =
findViewById(R.id.texttryr);

TextView textView3 =
findViewById(R.id.textcollection);

textView.setText(value);
textView2.setText(value2);
textView3.setText(value3);
}
}
}

```

//activity_second.xml

```

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

<LinearLayout

xmlns:android="http://schemas.and
roid.com/apk/res/android"

android:orientation="vertical"

android:layout_width="match_pare
nt"

android:layout_height="match_pare
nt">

<TextView

android:id = "@+id/text_view"

android:layout_width =
"match_parent"

android:layout_height =
"wrap_content"

android:layout_gravity = "center" />

```

```

<TextView

android:id = "@+id/texttryr"

android:layout_width =
"match_parent"

android:layout_height =
"wrap_content"

android:layout_gravity = "center" />

<TextView

android:id = "@+id/textcollection"

android:layout_width =
"match_parent"

android:layout_height =
"wrap_content"

android:layout_gravity = "center" />

</LinearLayout>

```

Slip 16

Q1. Create an Android App, it reads the Students Details (Name, Surname, Class, Gender, Hobbies, Marks) and

display the all information in another activity in table format on click of Submit button.

🔗 Open your AndroidManifest.xml file and add the ResultActivity declaration

within code.

```

<application

<!-- Other application
configurations -->

```

```
<activity
android:name=".ResultActivity"/>
</application>
```

activity_main.xml

```
<!-- activity_main.xml -->
```

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

```
xmlns:tools="http://schemas.androi
d.com/tools"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="match_pare
nt"
```

```
tools:context=".MainActivity">
```

```
<!-- Name EditText -->
```

```
<EditText
```

```
android:id="@+id/editTextName"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="wrap_conte
nt"
```

```
android:hint="Name"
```

```
android:layout_margin="16dp" />
```

```
<!-- Surname EditText -->
```

```
<EditText
```

```
android:id="@+id/editTextSurname
"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="wrap_conte
nt"
```

```
android:hint="Surname"
```

```
android:layout_below="@id/editTex
tName"
```

```
android:layout_margin="16dp" />
```

```
<!-- Class EditText -->
```

```
<EditText
```

```
android:id="@+id/editTextClass"
```

```
android:layout_width="match_pare
nt"
```

```
android:layout_height="wrap_conte
nt"
```

```
android:hint="Class"
```

```
android:layout_below="@id/editTex
tSurname"
```

```
android:layout_margin="16dp" />
```

```
<!-- Gender EditText -->
```

```
<EditText
```

```
android:id="@+id/editTextGender"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
android:hint="Gender"
```

```
android:layout_below="@id/editTextClass"
```

```
android:layout_margin="16dp" />
```

```
<!-- Hobbies EditText -->
```

```
<EditText
```

```
android:id="@+id/editTextHobbies"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
android:hint="Hobbies"
```

```
android:layout_below="@id/editTextGender"
```

```
android:layout_margin="16dp" />
```

```
<!-- Marks EditText -->
```

```
<EditText
```

```
android:id="@+id/editTextMarks"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
android:hint="Marks"
```

```
android:layout_below="@id/editTextHobbies"
```

```
android:layout_margin="16dp" />
```

```
<!-- Submit Button -->
```

```
<Button
```

```
android:id="@+id/buttonSubmit"
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:layout_below="@id/editTextMarks"
```

```
android:layout_alignParentEnd="true"
```

```
android:layout_marginTop="41dp"
```

```
android:layout_marginEnd="162dp"
```

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

```
</RelativeLayout>
```

MainActivity.java

```
package
```

```
com.example.activitylifecycle;
```

```
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 {

    private EditText editName,
editSurname, editClass,
editGender,

editHobbies, editMarks;

    private Button buttonSubmit;

    @Override

    protected void onCreate(Bundle
savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_m
ain);

// Initialize views

editName =
findViewById(R.id.editName);

editSurname =
findViewById(R.id.editSurname)
;

editClass =
findViewById(R.id.editClass);

editGender =
findViewById(R.id.editGender);

```

```

editHobbies =
findViewById(R.id.editHobbies);

editMarks =
findViewById(R.id.editMarks);

buttonSubmit =
findViewById(R.id.buttonSubmit);

// Set click listener for submit
button

buttonSubmit.setOnClickListener(ne
w View.OnClickListener() {

    @Override

    public void onClick(View v) {

// Get student details

String name =
editName.getText().toString();

String surname =
editSurname.getText().toString()
;

String studentClass =
editClass.getText().toString();

String gender =
editGender.getText().toString();

String hobbies =
editHobbies.getText().toString();

String marks =
editMarks.getText().toString();

// Start DisplayDetailsActivity and
pass student details

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

intent.putExtra("name", name);

```



```

intent.putExtra("surname",
surname);

intent.putExtra("class",
studentClass);

intent.putExtra("gender", gender);

intent.putExtra("hobbies",
hobbies);

intent.putExtra("marks", marks);
startActivity(intent);
}
});
}
}

```

ResultActivity.java

```

package
com.example.activitylifecycle;

import android.os.Bundle;
import android.widget.TableLayout;
import android.widget.TableRow;
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_re
sult);

// Retrieve student details from
intent

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

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

String studentClass =
getIntent().getStringExtra("class");

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

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

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

// Find TableLayout in the layout

TableLayout tableLayout =
findViewById(R.id.tableLayout);

// Add rows to the TableLayout
dynamically

addRow(tableLayout, "Name : ",
name);

addRow(tableLayout, "Surname : ",
surname);

addRow(tableLayout, "Class : ",
studentClass);

addRow(tableLayout, "Gender : ",
gender);

```

```

        addRow(tableLayout, "Hobbies : ",
        hobbies);

        addRow(tableLayout, "Marks : ",
        marks);

    }

    // Method to add a row to the
    TableLayout

    private void addRow(TableLayout
    tableLayout, String label, String
    value) {

        // Create a new row

        TableRow row = new
        TableRow(this);

        // Create text views for label and
        value

        TextView labelTextView = new
        TextView(this);

        labelTextView.setText(label);

        TextView valueTextView = new
        TextView(this);

        valueTextView.setText(value);

        // Add text views to the row

        row.addView(labelTextView);
        row.addView(valueTextView);

        // Add the row to the TableLayout

        tableLayout.addView(row);

    }
}

```

activity_result.xml

```
<!-- activity_display_details.xml -->
```

```

<ScrollView
xmlns:android="http://schemas.and
roid.com/apk/res/android"

    android:layout_width="match_pare
    nt"

    android:layout_height="match_pare
    nt">

    <TableLayout

        android:id="@+id/tableLayout"

        android:layout_width="match_pare
        nt"

        android:layout_height="wrap_conte
        nt"

        android:padding="16dp">

        <!-- Table rows will be added
        dynamically -->

        </TableLayout>

    </ScrollView>

```

Q2. Create an Android Application that Demonstrate TimePicker and display Selected Time on TextView.

MainActivity.java

```

package com.example.timedemo;

import
androidx.appcompat.app.AppComp
atActivity;

import android.os.Bundle;

```

```

import android.view.View;
import android.widget.DatePicker;
import android.widget.TimePicker;
import android.widget.Toast;

public class MainActivity extends
    AppCompatActivity {

    TimePicker tp;
    DatePicker dp;

    @Override

    protected void onCreate(Bundle
        savedInstanceState) {

        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_m
            ain);

        tp=(TimePicker)findViewById(R.id.ti
            mePicker);

        // tp.setIs24HourView(true);

        dp=(DatePicker)findViewById(R.id.d
            atePicker);

    }

    public void onClick(View view) {
        Toast.makeText(getBaseContext(),
            "Time
            Selected"+tp.getHour()+":"+tp.getM
            inute(),
            Toast.LENGTH_SHORT).show();
    }

    public void showDate(View view) {
        Toast.makeText(getBaseContext(),
            "date selected"+(dp.getMonth()+1)+

```

```

"/"+dp.getDayOfMonth()+
"/"+dp.getYear(),
        Toast.LENGTH_SHORT).show();
    }
}

```

activity_main.xml

```

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

<LinearLayout

    xmlns:android="http://schemas.and
roid.com/apk/res/android"

    xmlns:app="http://schemas.android
.com/apk/res-auto"

    xmlns:tools="http://schemas.androi
d.com/tools"

    android:layout_width="match_pare
nt"

    android:layout_height="match_pare
nt"

    android:orientation="vertical"

    tools:context=".MainActivity">

    <TimePicker

        android:id="@+id/timePicker"

        android:layout_width="wrap_conte
nt"

        android:layout_height="238dp" />

    <Button

        android:id="@+id/btnSet"

        android:layout_width="70dp"

        android:layout_height="31dp"

```

```
    android:onClick="onClick"
    tools:layout_editor_absoluteX="174
dp"
    tools:layout_editor_absoluteY="193
dp" />
<DatePicker
    android:id="@+id/datePicker"
    android:layout_width="wrap_conte
nt"
    android:layout_height="238dp" />
<Button
    android:id="@+id/btndt"
    android:layout_width="70dp"
    android:layout_height="31dp"
    android:onClick="showDate"
    tools:layout_editor_absoluteX="174
dp"
    tools:layout_editor_absoluteY="193
dp" />
</LinearLayout>
```

Slip17

Q1. Write an android code to make phone call using Intent.

Phone Dialer

//MainActivity.java

```
package com.example.intentdemo;

import
androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends
AppCompatActivity {

    Button b1;

    @Override

    protected void onCreate(Bundle
savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_m
ain);

        b1=(Button)findViewById(R.id.butto
n1);

        b1.setOnClickListener(new
View.OnClickListener() {

            @Override

            public void onClick(View v) {

                Intent i=new
                Intent(Intent.ACTION_DIAL,
```

```
                Uri.parse("tel:+9860539978"));

                startActivity(i);

            }

        });

    }

    @Override

    public void onBackPressed() {

        super.onBackPressed();

        Intent i=new
        Intent(this,SecondActivity.class);

        startActivity(i);

    }

}

//activity_main.xml

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

<LinearLayout

    xmlns:android="http://schemas.and
roid.com/apk/res/android"

    xmlns:app="http://schemas.android
.com/apk/res-auto"

    xmlns:tools="http://schemas.androi
d.com/tools"

    android:layout_width="match_pare
nt"

    android:layout_height="match_pare
nt"

    tools:context=".MainActivity">

    <TextView
```

```

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:text="Hello World!"

app:layout_constraintBottom_toBottomOf="parent"

app:layout_constraintLeft_toLeftOf="parent"

app:layout_constraintRight_toRightOf="parent"

app:layout_constraintTop_toTopOf="parent" />

<Button

android:layout_width="match_parent"

android:layout_height="wrap_content"

android:id="@+id/button1"

android:text="Contact"

/>

</LinearLayout>

```

//SecondActivity.java

```

package com.example.intentdemo;

import
androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class SecondActivity extends
AppCompatActivity {

@Override

```

```

protected void onCreate(Bundle
savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_second);

}

}

```

//activity_second.xml

```

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

<LinearLayout

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

xmlns:app="http://schemas.android.com/apk/res-auto"

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

android:layout_width="match_parent"

android:layout_height="match_parent"

android:orientation="vertical"

tools:context=".SecondActivity">

<TextView

android:layout_width="wrap_content"

android:layout_height="wrap_content"

android:id="@+id/text1"

android:text="Second Activity">

```

By: Shivarkar S.Y. Page 83

```
</TextView>
```

```
</LinearLayout>
```

Q2. Construct an Android Application to accept a number and calculate Factorial and Sum of Digits of a given number using Context Menu.

Create a new Android project in Android Studio with an Empty Activity.

activity_main.xml:

```
<!-- 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/numberEditText"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
android:hint="Enter a number"
```

```
android:inputType="number"/>
```

```
<Button
```

```
android:id="@+id/showContextMenuButton"
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:text="Show Context Menu"
```

```
android:layout_below="@id/numberEditText"
```

```
android:layout_centerHorizontal="true"/>
```

```
</RelativeLayout>
```

MainActivity.java:

```
import android.os.Bundle;
```

```
import android.view.ContextMenu;
import android.view.MenuItem;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import
androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends
AppCompatActivity {
```

```
    EditText numberEditText;
```

```
    @Override
```

```
    protected void onCreate(Bundle
savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_m
ain);
```

```
        numberEditText =
findViewById(R.id.numberEditText);
```

```
        Button
showContextMenuButton =
findViewById(R.id.showContextMen
uButton);
```

```
        registerContextMenu(showConte
xtMenuButton);
```

```
        showContextMenuButton.setOnClic
kListener(new
View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
                openContextMenu(v);
```

```
            }
```

```
        });
```

```
    }
```

```
    @Override
```

```
    public void
onCreateContextMenu(ContextMen
u menu, View v,
ContextMenu.ContextMenuInfo
menuInfo) {
```

```
        super.onCreateContextMenu(menu,
v, menuInfo);
```

```
        getMenuInflater().inflate(R.menu.co
ntext_menu, menu);
```

```
    }
```

```
    @Override
```

```
    public boolean
onContextItemSelected(MenuItem
item) {
```



```

        int id = item.getItemId();
        if (id == R.id.menuFactorial) {
            calculateFactorial();
            return true;
        } else if (id ==
R.id.menuSumOfDigits) {
            calculateSumOfDigits();
            return true;
        }
        return
super.onContextItemSelected(item);
    }

```

```

private void calculateFactorial() {
    try {
        int number =
Integer.parseInt(numberEditText.get
Text().toString());

        int factorial = 1;
        for (int i = 1; i <= number; i++)
        {
            factorial *= i;
        }

        Toast.makeText(this,
"Factorial: " + factorial,
Toast.LENGTH_SHORT).show();

    } catch
(NumberFormatException e) {
        Toast.makeText(this, "Please
enter a valid number",
Toast.LENGTH_SHORT).show();
    }
}

```

```

    }

    private void
calculateSumOfDigits() {
        try {
            int number =
Integer.parseInt(numberEditText.get
Text().toString());

            int sum = 0;
            while (number > 0) {
                sum += number % 10;
                number /= 10;
            }

            Toast.makeText(this, "Sum of
digits: " + sum,
Toast.LENGTH_SHORT).show();

        } catch
(NumberFormatException e) {
            Toast.makeText(this, "Please
enter a valid number",
Toast.LENGTH_SHORT).show();
        }
    }
}

```

context_menu.xml:

```

<!-- context_menu.xml -->

<menu
xmlns:android="http://schemas.and
roid.com/apk/res/android">

    <item

```

```

android:id="@+id/menuFactorial"
    android:title="Factorial" />
</item>

android:id="@+id/menuSumOfDigits"
    android:title="Sum of Digits" />
</menu>

```

Slip no – 18

Q1. Create an Android Application that Demonstrate Alert Dialog Box

activity_main.xml

```

<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/showDialogButton"

```

```

    android:layout_width="wrap_content"

    android:layout_height="wrap_content"

    android:text="Show Dialog"

    android:layout_centerInParent="true" />
</RelativeLayout>

```

MainActivity.java

```

package
com.example.activitylifecycle;

import
androidx.appcompat.app.AlertDialog;

import
androidx.appcompat.app.AppCompatActivity;

import
android.content.DialogInterface;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

public class MainActivity extends
AppCompatActivity {

    @Override

    protected void onCreate(Bundle
savedInstanceState) {

        super.onCreate(savedInstanceState);

```

```
setContentView(R.layout.activity_main);
```

```
Button showDialogButton =  
findViewById(R.id.showDialogButton);
```

```
showDialogButton.setOnClickListener(  
new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```

```
        // Show the alert dialog
```

```
        showAlert();
```

```
    }
```

```
});
```

```
}
```

```
private void showAlert() {
```

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

```
    builder.setTitle("Alert Dialog");
```

```
    builder.setMessage("This is a demo  
of Alert Dialog Box.");
```

```
    builder.setPositiveButton("OK",  
new
```

```
DialogInterface.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(DialogInterface  
dialog, int which) {
```

```
        // Do something when the OK  
button is clicked
```

```
    }
```

```
});
```

```
    builder.setNegativeButton("Cancel",  
new
```

```
DialogInterface.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(DialogInterface  
dialog, int which) {
```

```
        // Do something when the Cancel  
button is clicked
```

```
    }
```

```
});
```

```
AlertDialog dialog = builder
```

```
.create();
```

```
dialog
```

```
.show();
```

```
}
```

```
}
```

Q2 Create an Android Application to accept two numbers and find power and Average. Display

the result on the next activity using Context Menu.

Create a new Android project in Android Studio with an Empty Activity.

activity_main.xml:

```
<!-- 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/number1EditText"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
android:hint="Enter number 1"
```

```
android:inputType="number"/>
```

```
<EditText
```

```
android:id="@+id/number2EditText"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
android:layout_below="@id/number1EditText"
```

```
android:hint="Enter number 2"
```

```
android:inputType="number"/>
```

```
<Button
```

```
android:id="@+id/calculateButton"
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
    android:text="Calculate"
```

```
android:layout_below="@id/number2EditText"
```

```
android:layout_centerHorizontal="true"/>
```

```
</RelativeLayout>
```

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 number1EditText,  
    number2EditText;
```

```
    @Override
```

```
    protected void onCreate(Bundle  
savedInstanceState) {
```

```
        super.onCreate(savedInstanceState);
```

```
        setContentView(R.layout.activity_main);
```

```
        number1EditText =  
        findViewById(R.id.number1EditText)  
        ;
```

```
        number2EditText =  
        findViewById(R.id.number2EditText)  
        ;
```

```
        Button calculateButton =  
        findViewById(R.id.calculateButton);
```

```
        calculateButton.setOnClickListener(  
        new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
```

```
                double number1 =  
                Double.parseDouble(number1EditText.getText().toString());
```

```
                double number2 =  
                Double.parseDouble(number2EditText.getText().toString());
```

```
                double power =  
                Math.pow(number1, number2);
```

```
                double average = (number1  
                + number2) / 2;
```

```

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

        intent.putExtra("power",
power);

        intent.putExtra("average",
average);

        startActivity(intent);
    }
});
}
}

```

ResultActivity.java:

```

import android.os.Bundle;
import android.widget.TextView;
import
androidx.appcompat.app.AppComp
atActivity;

```

```

public class ResultActivity extends
AppCompatActivity {

```

```

    @Override

```

```

        protected void onCreate(Bundle
savedInstanceState) {

```

```

super.onCreate(savedInstanceState);

```

```

setContentView(R.layout.activity_re
sult);

```

```

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

```

```

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

```

```

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

```

```

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

```

```

        powerTextView.setText("Power:
" + power);

```

```

        averageTextView.setText("Average: "
+ average);

```

```

    }

```

```

}

```

activity_result.xml:

```

<!-- activity_result.xml -->

```

```

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

```

```

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

```

```

xmlns:tools="http://schemas.androi
d.com/tools"

```

```

android:layout_width="match_pare
nt"

```

```
android:layout_height="match_parent"
```

```
tools:context=".ResultActivity">
```

```
<TextView
```

```
android:id="@+id/powerTextView"
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:text="Power"
```

```
android:textSize="20sp"
```

```
android:layout_centerHorizontal="true"
```

```
android:layout_marginTop="50dp"/>
```

```
<TextView
```

```
android:id="@+id/averageTextView"
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:text="Average"
```

```
android:textSize="20sp"
```

```
android:layout_below="@id/powerTextView"
```

```
android:layout_marginTop="20dp"
```

```
android:layout_centerHorizontal="true"/>
```

```
</RelativeLayout>
```

AndroidManifest.xml:

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

```
package="com.example.calculator">
```

```
<application
```

```
android:allowBackup="true"
```

```
android:icon="@mipmap/ic_launcher"
```

```
android:label="@string/app_name"
```

```
android:roundIcon="@mipmap/ic_launcher_round"
```

```
android:supportRtl="true"
```

```
android:theme="@style/AppTheme">
```

```

        <activity
android:name=".MainActivity">
            <intent-filter>
                <action
android:name="android.intent.action.MAIN" />

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

</manifest>

```

Slip19

Q1. Create an Android Application that on/off the bulb using Toggle Button.

BasicViews(Toggle Button)

//MainActivity.java

```

package com.example.basicviews;

import
androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.Button;

```

```

import android.widget.CheckBox;
import android.widget.RadioButton;
import android.widget.RadioGroup;
import android.widget.Toast;

import
android.widget.ToggleButton;

public class MainActivity extends
AppCompatActivity {

    @Override

    protected void onCreate(Bundle
savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        Button
btsave=(Button)findViewById(R.id.button1);

        btsave.setOnClickListener(new
View.OnClickListener() {

            @Override

            public void onClick(View v) {

                Toast.makeText(getApplicationContext(),"you clicked

                save
                button",Toast.LENGTH_SHORT).show();

            }

        });

        Button
btopen=(Button)findViewById(R.id.button2);

```



```

btopen.setOnClickListener(new
View.OnClickListener() {
@Override
public void onClick(View v) {
Toast.makeText(getBaseContext(),"y
ou clicked
open
button",Toast.LENGTH_SHORT).sho
w());
}
});
final CheckBox
chk=(CheckBox)findViewById(R.id.ch
eckBox);
chk.setOnClickListener(new
View.OnClickListener() {
@Override
public void onClick(View v) {
if (((CheckBox)v).isChecked())
Toast.makeText(getBaseContext(),"y
ou checked
check box1
button",Toast.LENGTH_SHORT).sho
w());
else
Toast.makeText(getBaseContext(),"y
ou
unchecked check box1
button",Toast.LENGTH_SHORT).sho
w());
}
}

```

```

});
RadioGroup
rgb=(RadioGroup)findViewById(R.id.
rdgrp1);
rgb.setOnCheckedChangeListener(n
ew
RadioGroup.OnCheckedChangeListener
ner() {
@Override
public void
onCheckedChanged(RadioGroup
group, int
checkedId) {
RadioButton rb1=
(RadioButton)findViewById(R.id.rd1)
;
if (rb1.isChecked())
{
Toast.makeText(getBaseContext(),"y
ou checked
option1",Toast.LENGTH_SHORT).sho
w();
}
else
{
Toast.makeText(getBaseContext(),"y
ou checked
option2",Toast.LENGTH_SHORT).sho
w();
}
}
}

```

```

});
ToggleButton
tb=(ToggleButton)findViewById(R.id.
toggle1);

tb.setOnClickListener(new
View.OnClickListener() {

@Override

public void onClick(View v) {

if(((ToggleButton)v).isChecked())

{Toast.makeText(getBaseContext(),"t
oggle button

is
on",Toast.LENGTH_SHORT).show();}

else

{Toast.makeText(getBaseContext(),"t
oggle button

is
off",Toast.LENGTH_SHORT).show();}

}

});

}

}

```

//activity_main.xml

```

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

<LinearLayout

xmlns:android="http://schemas.and
roid.com/apk/res/android"

xmlns:app="http://schemas.android
.com/apk/res-auto"

```

```

xmlns:tools="http://schemas.androi
d.com/tools"

android:layout_width="fill_parent"
android:layout_height="fill_parent"
android:orientation="vertical"
tools:context=".MainActivity">

<Button

android:id="@+id/button1"
android:layout_width="fill_parent"
android:layout_height="wrap_conte
nt"

android:text="save" />

<Button

android:id="@+id/button2"
android:layout_width="fill_parent"
android:layout_height="wrap_conte
nt"

android:text="open" />

<ImageButton

android:id="@+id/btnimg"
android:layout_width="fill_parent"
android:layout_height="wrap_conte
nt"

android:src="@mipmap/pic3" />

<TextView

android:id="@+id/text1"
android:layout_width="fill_parent"
android:layout_height="wrap_conte
nt"/>

```

```

<EditText
android:id="@+id/editText"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Name" />
<CheckBox
android:id="@+id/checkBox"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="CheckBox" />
<CheckBox
android:id="@+id/checkBox2"
style="?android:attr/starStyle"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="CheckBox" />
<RadioGroup
android:id="@+id/rdgrp1"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:orientation="vertical" >
<RadioButton
android:id="@+id/rd1"
android:layout_width="fill_parent"

```

```

android:layout_height="wrap_content"
android:text="option1"/>
<RadioButton
android:id="@+id/rd2"
android:layout_width="fill_parent"
android:layout_height="wrap_content"
android:text="option2"/>
</RadioGroup>
<ToggleButton
android:id="@+id/toggle1"
android:layout_width="wrap_content"
android:layout_height="wrap_content" />
</LinearLayout>

```

Q2. Create application to send SMS message. After sending message display delivery report of message.

Java file

```

package com.example.smsdemo;

import
androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import
android.telephony.SmsManager;

import android.view.View;

```

```

import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends
AppCompatActivity {
private EditText txtMobile;
private EditText txtMessage;
private Button btnSms;
@Override
protected void onCreate(Bundle
savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity_m
ain);

txtMobile =
(EditText)findViewById(R.id.mblTxt);
txtMessage =
(EditText)findViewById(R.id.msgTxt);
btnSms =
(Button)findViewById(R.id.btnSend);
btnSms.setOnClickListener(new
View.OnClickListener() {
@Override
public void onClick(View v) {
sendSMS("5556", "hello");
}
}

```

```

private void sendSMS(String
s, String hello) {
try{
SmsManager smgr =
SmsManager.getDefault();

smgr.sendTextMessage(txtMobile.ge
tText().
toString(),null,txtMessage.getText().
toSt
ring(),null,null);
//
smgr.sendTextMessage("986053997
8",null,tx
tMessage.getText().toString(),null,nu
ll);

Toast.makeText(MainActivity.this,
"SMS
Sent Successfully",
Toast.LENGTH_SHORT).show();
}
catch (Exception e){

Toast.makeText(MainActivity.this,
"SMS
Failed to Send, Please try again",
Toast.LENGTH_SHORT).show();
}
}
}

```

```
});
```

```
}
```

```
}
```

//activity_main.xml

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

```
<LinearLayout
```

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

```
/apk/res/android"
```

```
xmlns:app="http://schemas.android.com/apk
```

```
/res-auto"
```

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

```
ools"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="match_parent"
```

```
android:orientation="vertical"
```

```
tools:context=".MainActivity">
```

```
<TextView
```

```
android:id="@+id/fstTxt"
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:layout_marginLeft="100dp"
```

```
android:layout_marginTop="150dp"
```

```
android:text="Mobile No" />
```

```
<EditText
```

```
android:id="@+id/mbITxt"
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:layout_marginLeft="100dp"
```

```
android:ems="10"/>
```

```
<TextView
```

```
android:id="@+id/secTxt"
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:text="Message"
```

```
android:layout_marginLeft="100dp"
```

```
/>
```

```
<EditText
```

```
android:id="@+id/msgTxt"
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:layout_marginLeft="100dp"
```

```
android:ems="10" />
```

```
<Button
```

```
android:id="@+id/btnSend"
```

```
android:layout_width="wrap_content"
```

```
android:layout_height="wrap_content"
```

```
android:layout_marginLeft="100dp"
```

```
android:text="Send SMS" />
```

```
</LinearLayout>
```

Slip20

Q1. Create Android Program to Change the Image on the Screen.

Create a new Android project in Android Studio with an Empty Activity.

Add Images:

Place some images (e.g., image1.png, image2.png, image3.png) in the drawable folder of your project. These images will be used to change the displayed image.

activity_main.xml:

Design the layout with an ImageView to display the image and a Button to change the image.

xml

Copy 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">
```

```
    <ImageView
```

```
        android:id="@+id/imageView"
```

```
        android:layout_width="match_parent"
```

```
        android:layout_height="match_parent"
```

```
        android:scaleType="centerCrop"
```

```
        android:src="@drawable/image1"
    />
```

```
    <Button
```

```
        android:id="@+id/changeImageButton"
```

```
        android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
```

```
        android:text="Change Image"
```

```
android:layout_centerInParent="true"/>
```

```
</RelativeLayout>
```

MainActivity.java:

Implement the logic to change the image when the button is clicked.

```
java
```

Copy code

```
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private ImageView imageView;

    private int[] images =
    {R.drawable.image1,
    R.drawable.image2,
    R.drawable.image3};

    private int currentIndex = 0;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
```

```
super.onCreate(savedInstanceState);
```

```
setContentView(R.layout.activity_main);
```

```
        imageView =
        findViewById(R.id.imageView);
```

```
        imageView.setImageResource(images[currentIndex]);
```

```
        Button changeImageButton =
        findViewById(R.id.changeImageButton);
```

```
        changeImageButton.setOnClickListener(new View.OnClickListener() {
```

```
            @Override
```

```
            public void onClick(View v) {
```

```
                currentIndex =
                (currentIndex + 1) %
                images.length;
```

```
                imageView.setImageResource(images[currentIndex]);
```

```
            }
```

```
        });
```

```
    }
```

```
}
```

AndroidManifest.xml:

Ensure that MainActivity is declared in the AndroidManifest.xml file.

xml

Copy code

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

```
package="com.example.imagechanger">
```

```
    <application
        android:allowBackup="true"
```

```
        android:icon="@mipmap/ic_launcher"
```

```
        android:label="@string/app_name"
```

```
        android:roundIcon="@mipmap/ic_launcher_round"
```

```
        android:supportRtl="true"
```

```
    <activity
        android:theme="@style/AppTheme">
```

```
        <activity
            android:name=".MainActivity">
```

```
            <intent-filter>
```

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

```
                <category
                    android:name="android.intent.category.LAUNCHER" />
```

```
            </intent-filter>
```

```
        </activity>
```

```
    </application>
```

```
</manifest>
```

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

Create a new Android project in Android Studio with an Empty Activity.

Create a layout file for the list item:

Create a layout file named list_item_country.xml in the res/layout directory. This layout will represent each item in the ListView.

xml

```
<!-- list_item_country.xml -->
```

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

```
    android:id="@android:id/text1"
```

```
    android:layout_width="match_parent"
```

```
android:layout_height="wrap_content"
```

```
android:textAppearance="?android:attr/textAppearanceListItemSmall"
    android:gravity="center_vertical"
```

```
android:paddingStart="?android:attr/listPreferredItemPaddingStart"
```

```
android:paddingEnd="?android:attr/listPreferredItemPaddingEnd"
```

```
android:textColor="@android:color/black"/>
```

activity_main.xml:

Design the layout with a ListView to display the list of countries.

xml

Copy 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">
```

```
<ListView
```

```
    android:id="@+id/listView"
```

```
android:layout_width="match_parent"
```

```
android:layout_height="match_parent" />
```

```
</RelativeLayout>
```

MainActivity.java:

Create an array of country names and use an ArrayAdapter to bind the data to the ListView.

```
import android.os.Bundle;
```

```
import
android.widget.ArrayAdapter;
```

```
import android.widget.ListView;
```

```
import
androidx.appcompat.app.AppCompatActivity;
```

```
public class MainActivity extends
AppCompatActivity {
```

```
    private ListView listView;
```

private String[] countries =
{ "Afghanistan", "Albania", "Algeria",
"Andorra", "Angola", "Antigua and
Barbuda",

"Argentina", "Armenia",
"Australia", "Austria", "Azerbaijan",
"Bahamas", "Bahrain",
"Bangladesh",

"Barbados", "Belarus",
"Belgium", "Belize", "Benin",
"Bhutan", "Bolivia", "Bosnia and
Herzegovina",

"Botswana", "Brazil",
"Brunei", "Bulgaria", "Burkina Faso",
"Burundi", "Cabo Verde",
"Cambodia",

"Cameroon", "Canada",
"Central African Republic", "Chad",
"Chile", "China", "Colombia",
"Comoros",

"Congo", "Costa Rica",
"Croatia", "Cuba", "Cyprus", "Czech
Republic", "Denmark", "Djibouti",

"Dominica", "Dominican
Republic", "East Timor", "Ecuador",
"Egypt", "El Salvador", "Equatorial
Guinea",

"Eritrea", "Estonia",
"Eswatini", "Ethiopia", "Fiji",
"Finland", "France", "Gabon",
"Gambia", "Georgia",

"Germany", "Ghana",
"Greece", "Grenada", "Guatemala",
"Guinea", "Guinea-Bissau",
"Guyana", "Haiti",

"Honduras", "Hungary",
"Iceland", "India", "Indonesia",
"Iran", "Iraq", "Ireland", "Israel",
"Italy",

"Ivory Coast", "Jamaica",
"Japan", "Jordan", "Kazakhstan",
"Kenya", "Kiribati", "Korea, North",

"Korea, South", "Kosovo",
"Kuwait", "Kyrgyzstan", "Laos",
"Latvia", "Lebanon", "Lesotho",
"Liberia",

"Libya", "Liechtenstein",
"Lithuania", "Luxembourg",
"Madagascar", "Malawi",
"Malaysia", "Maldives",

"Mali", "Malta", "Marshall
Islands", "Mauritania", "Mauritius",
"Mexico", "Micronesia", "Moldova",

"Monaco", "Mongolia",
"Montenegro", "Morocco",
"Mozambique", "Myanmar",
"Namibia", "Nauru", "Nepal",

"Netherlands", "New
Zealand", "Nicaragua", "Niger",
"Nigeria", "North Macedonia",
"Norway", "Oman",

"Pakistan", "Palau",
"Palestinian Territories", "Panama",
"Papua New Guinea", "Paraguay",
"Peru",

"Philippines", "Poland",
"Portugal", "Qatar", "Romania",
"Russia", "Rwanda", "Saint Kitts and
Nevis",

"Saint Lucia", "Saint Vincent and the Grenadines", "Samoa", "San Marino", "Sao Tome and Principe",

"Saudi Arabia", "Senegal", "Serbia", "Seychelles", "Sierra Leone", "Singapore", "Slovakia", "Slovenia",

"Solomon Islands", "Somalia", "South Africa", "South Sudan", "Spain", "Sri Lanka", "Sudan", "Suriname",

"Sweden", "Switzerland", "Syria", "Taiwan", "Tajikistan", "Tanzania", "Thailand", "Togo", "Tonga",

"Trinidad and Tobago", "Tunisia", "Turkey", "Turkmenistan", "Tuvalu", "Uganda", "Ukraine",

"United Arab Emirates", "United Kingdom", "United States", "Uruguay", "Uzbekistan", "Vanuatu",

"Vatican City", "Venezuela", "Vietnam", "Yemen", "Zambia", "Zimbabwe"};

@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
, countries);

listView.setAdapter(adapter);

}

}

AndroidManifest.xml:

Ensure that MainActivity is declared in the AndroidManifest.xml file.

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

```
package="com.example.countrylist"  
>
```

```
<application
```

```
    android:allowBackup="true"
```

```
    android:icon="@mipmap/ic_launcher"
```

```
    android:label="@string/app_name"
```

```
    android:roundIcon="@mipmap/ic_launcher_round"
```

```
    android:supportRtl="true"
```

```
android:theme="@style/AppTheme"
">
```

```
    <activity
android:name=".MainActivity">
```

```
        <intent-filter>
```

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

```
            <category
android:name="android.intent.category.LAUNCHER" />
```

```
        </intent-filter>
```

```
    </activity>
```

```
</application>
```

```
</manifest>
```