Anything Else :-

Slip1 Q1
 Q1. Create a Simple Application which shows the Life Cycle of Activity.
MainActivity.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:orientation="vertical"
  android:gravity="center"
  android:padding="20dp">

  <TextView
         android:id="@+id/textView"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Activity Lifecycle"
      android:textSize="20sp"
         android:padding="10dp"/>

 </LinearLayout>
```

(res->values->string.xml)
String.xml

```
<resources>
  <string name="onCreate_text">onCreate called</string>
  <string name="onStart_text">onStart called</string>
  <string name="onResume_text">onResume called</string>
  <string name="onPause_text">onPause called</string>
  <string name="onStop_text">onStop called</string>
  <string name="onDestroy_text">onDestroy called</string>
  <string name="app_name" />
 </resources>
```

****
MainActivity.java

```
package com.example.s1a;

 import android.app.Activity;
 import android.os.Bundle;
 import android.util.Log;
 import android.widget.TextView;

 public class MainActivity extends Activity {

  private static final String TAG = "ActivityLifecycle";
  private TextView tv;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
         super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      tv = findViewById(R.id.textView);

      tv.setText(getString(R.string.onCreate_text));
      Log.d(TAG, "onCreate called");
  }

  @Override
  protected void onStart() {
      super.onStart();
      tv.setText(getString(R.string.onStart_text));
      Log.d(TAG, "onStart called");
  }

  @Override
  protected void onResume() {
      super.onResume();
      tv.setText(getString(R.string.onResume_text));
      Log.d(TAG, "onResume called");
  }

  @Override
  protected void onPause() {
      super.onPause();
      tv.setText(getString(R.string.onPause_text));
      Log.d(TAG, "onPause called");
  }

  @Override
  protected void onStop() {
      super.onStop();
      tv.setText(getString(R.string.onStop_text));
      Log.d(TAG, "onStop called");

      // Explicitly finish the activity to trigger onDestroy()
      finish();
  }

  @Override
  protected void onDestroy() {
      super.onDestroy();
      tv.setText(getString(R.string.onDestroy_text));
      Log.d(TAG, "onDestroy called");
      Log.d(TAG, "Activity is destroyed");  // This should now be logged
  }
 }
```

****
Slip 1 Q2B
Q2. Create an Android Application that demonstrate DatePicker and DatePickerDailog. MainActivity.xml

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

```
    android:layout_height="match_parent"
    android:orientation="vertical"
  android:gravity="center"
  android:padding="20dp">

  <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
      android:text="Selected Date"
      android:textSize="20sp"
      android:padding="10dp"/>

  <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
      android:text="Pick a Date"/>

 </LinearLayout>

**************************************************8
MainActivity.java

package com.example.s1b;

 import android.app.Activity;
 import android.app.DatePickerDialog;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.Button;
 import android.widget.DatePicker;
 import android.widget.TextView;

 import java.util.Calendar;

 public class MainActivity extends Activity {

  private TextView textView;
  private Button button;
  private Calendar calendar;
  private int year, month, day;

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

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

      calendar = Calendar.getInstance();
      year = calendar.get(Calendar.YEAR);
      month = calendar.get(Calendar.MONTH);
      day = calendar.get(Calendar.DAY_OF_MONTH);

      button.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              DatePickerDialog datePickerDialog = new DatePickerDialog(
                        MainActivity.this,
                      new DatePickerDialog.OnDateSetListener() {
                          @Override
                          public void onDateSet(DatePicker view, int selectedYear, int selectedMonth, int selectedDay) {
                                textView.setText(selectedDay + "/" + (selectedMonth + 1) + "/" + selectedYear);
                          }
                      },
                      year, month, day);
              datePickerDialog.show();
          }
      });
 }
 }


*********************************************************************************
Slip2 Q1
Q1. Create a Simple Application, which reads a positive number from the user and display its factorial value in another activity.
MainActivity.xml
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp">

  <EditText
        android:id="@+id/editTextNumber"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="@string/enter_a_positive_number"
        android:inputType="number"
      android:importantForAccessibility="yes" />

  <Button
        android:id="@+id/buttonCalculate"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/calculate_factorial" />

 </LinearLayout>

Mainactivity.java
package com.example.myapplication;
```

```
 import android.content.Intent;
 import android.os.Bundle;
 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 {

  private EditText editTextNumber;
  private Button buttonCalculate;

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

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

         buttonCalculate.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              String input = editTextNumber.getText().toString();
              if (input.isEmpty()) {
                  Toast.makeText(MainActivity.this, "Please enter a number", Toast.LENGTH_SHORT).show();
              } else {
                  int number = Integer.parseInt(input);
                  if (number >= 0) {
                      Intent intent = new Intent(MainActivity.this, MainActivity2.class);
                         intent.putExtra("number", number);
                         startActivity(intent);
                  } else {
                      Toast.makeText(MainActivity.this, "Please enter a positive number", Toast.LENGTH_SHORT).show();
                  }
              }
          }
      });
  }
 }
SecondActivity.xml
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp">

  <TextView
         android:id="@+id/textViewResult"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:text="@string/factorial"
         android:textSize="18sp"/>

  <Button
      android:id="@+id/buttonBack"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:text="@string/back_to_input" />
 </LinearLayout>
SecondActivity.java
package com.example.myapplication;


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

 public class MainActivity2 extends AppCompatActivity {

  private TextView textViewResult;
  private Button buttonBack;

  @Override
  protected void onCreate(Bundle savedInstanceState) {
         super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main2);

      textViewResult = findViewById(R.id.textViewResult);
      buttonBack = findViewById(R.id.buttonBack);

      // Get the number from the intent
      int number = getIntent().getIntExtra("number", 0);

      // Calculate the factorial
      long factorial = calculateFactorial(number);
         textViewResult.setText("Factorial of " + number + " is: " + factorial);

      buttonBack.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              finish();  // Close the ResultActivity and return to MainActivity
          }
      });
  }

  private long calculateFactorial(int number) {
      long result = 1;
      for (int i = 1; i <= number; i++) {
          result *= i;
      }
      return result;
```

```
  }
 }
```

Slip 2 Q2A

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

Create BackgroundSoundService.java

```
import android.app.Service;
import android.content.Intent;
import android.media.MediaPlayer;
import android.os.IBinder;
import android.widget.Toast;
import androidx.annotation.Nullable;

public class BackgroundSoundService extends Service {
    MediaPlayer mediaPlayer;

    @Nullable
    @Override
    public IBinder onBind(Intent intent) {
        return null;
    }

    @Override
    public void onCreate() {
        super.onCreate();
        mediaPlayer = MediaPlayer.create(this, R.raw.background_music);
        mediaPlayer.setLooping(true); // Set to loop indefinitely
    }

    @Override
    public int onStartCommand(Intent intent, int flags, int startId) {
        mediaPlayer.start();
        Toast.makeText(this, "Background music started", Toast.LENGTH_SHORT).show();
        return START_STICKY;
    }

    @Override
    public void onDestroy() {
        mediaPlayer.stop();
        mediaPlayer.release();
        Toast.makeText(this, "Background music stopped", Toast.LENGTH_SHORT).show();
        super.onDestroy();
    }
}
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center_horizontal"
    android:orientation="vertical"
    android:padding="16dp">

    <Button
        android:id="@+id/btn_start"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Start Background Music"
        android:onClick="startBackgroundSound" />

    <Button
        android:id="@+id/btn_stop"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Stop Background Music"
        android:onClick="stopBackgroundSound"
        android:layout_marginTop="16dp" />

    <Button
        android:id="@+id/btn_second_activity"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Open Second Activity"
        android:onClick="openSecondActivity"
        android:layout_marginTop="16dp" />

</LinearLayout>
```

MainActivity.java

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

public class MainActivity extends AppCompatActivity {

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

    public void startBackgroundSound(View view) {
        Intent intent = new Intent(this, BackgroundSoundService.class);
        startService(intent);
    }

    public void stopBackgroundSound(View view) {
        Intent intent = new Intent(this, BackgroundSoundService.class);
        stopService(intent);
    }

    public void openSecondActivity(View view) {
        Intent intent = new Intent(this, SecondActivity.class);
        startActivity(intent);
    }
```

```
}
```
SecondActivity.java
```
import android.os.Bundle;
import androidx.appcompat.app.AppCompatActivity;

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"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:gravity="center"
    android:orientation="vertical"
    android:padding="16dp">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="This is the second activity"
        android:textSize="24sp" />

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

    <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/Theme.BackgroundMusic">
        <activity android:name=".SecondActivity" />
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
        <service android:name=".BackgroundSoundService" />
    </application>

</manifest>
```

Slip3 Q1

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 xm

MainActivity.xml
```
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
  android:layout_height="match_parent"
     android:orientation="vertical"
  android:gravity="center"
  android:padding="20dp">

  <TextView
         android:id="@+id/collegeName"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="My College Name"
      android:textSize="20sp"
         android:textColor="#000000"
         android:padding="10dp"/>

  <Button
         android:id="@+id/changeStyleButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Change Style"/>

 </LinearLayout>
```

MainActivity.java
```
package com.example.s3a;

 import android.app.Activity;
 import android.graphics.Color;
 import android.graphics.Typeface;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.Button;
 import android.widget.TextView;

 public class MainActivity extends Activity {
  private TextView collegeName;
  private Button changeStyleButton;
  private int styleIndex = 0;  // 0: normal, 1: bold, 2: italic

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

      collegeName = findViewById(R.id.collegeName);
      changeStyleButton = findViewById(R.id.changeStyleButton);

         changeStyleButton.setOnClickListener(new View.OnClickListener() {
          @Override
```

```
          public void onClick(View v) {
              // Change text color to red
                 collegeName.setTextColor(Color.RED);

              // Toggle between normal, bold, and italic styles
              switch (styleIndex) {
                  case 0:
                         collegeName.setTypeface(Typeface.DEFAULT, Typeface.NORMAL);  // Normal style
                         collegeName.setTextSize(16);
                      styleIndex = 1;
                      break;
                  case 1:
                         collegeName.setTypeface(Typeface.DEFAULT_BOLD);  // Bold style
                         collegeName.setTextSize(24);
                      styleIndex = 2;
                      break;
                  case 2:
                         collegeName.setTypeface(Typeface.create("sans-serif", Typeface.ITALIC));  // Italic style
                         collegeName.setTextSize(24);
                      styleIndex = 0;
                      break;
              }
          }
      });
  }
 }
**********************************

Slip3 Q2A
Q2. Create an Android Application to find the factorial of a number and Display the Result on Alert Box.
MainActivity.xml
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:gravity="center"
  android:padding="20dp">

  <EditText
         android:id="@+id/numberInput"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:hint="@string/enter_a_number1"
         android:inputType="number"
         android:padding="10dp"
         android:textSize="18sp"/>

  <Button
         android:id="@+id/calculateButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Calculate Factorial"
      android:padding="10dp"
         android:layout_marginTop="10dp"/>

 </LinearLayout>
**********************************************
MainActivity.java
package com.example.s3a;
 import android.app.Activity;
 import android.app.AlertDialog;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.Button;
 import android.widget.EditText;

 public class MainActivity extends Activity {
  private EditText numberInput;
  private Button calculateButton;

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

      numberInput = findViewById(R.id.numberInput);
      calculateButton = findViewById(R.id.calculateButton);

         calculateButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              int num = Integer.parseInt(numberInput.getText().toString());
              long fact = factorial(num);

              new AlertDialog.Builder(MainActivity.this)
                         .setTitle("Factorial Result")
                         .setMessage("Factorial of " + num + " is " + fact)
                     .setPositiveButton("OK", null)
                     .show();
          }
      });
  }

  private long factorial(int n) {
      long result = 1;
      for (int i = 1; i <= n; i++) {
          result *= i;
      }
      return result;
  }
 }



Slip4 Q1
```

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

MainActivity.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <android.support.constraint.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"
     xmlns:app="http://schemas.android.com/apk/res-auto"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:padding="20dp">

  <EditText
         android:id="@+id/numberInput1"
         android:layout_width="0dp"
         android:layout_height="wrap_content"
         android:hint="@string/enter_first_number"
      android:inputType="numberDecimal"
         android:layout_marginTop="20dp"
         app:layout_constraintTop_toTopOf="parent"
         app:layout_constraintStart_toStartOf="parent"
         app:layout_constraintEnd_toEndOf="parent"/>

  <EditText
         android:id="@+id/numberInput2"
         android:layout_width="0dp"
         android:layout_height="wrap_content"
         android:hint="@string/enter_second_number"
         android:inputType="numberDecimal"
         android:layout_marginTop="10dp"
      app:layout_constraintTop_toBottomOf="@id/numberInput1"
         app:layout_constraintStart_toStartOf="parent"
         app:layout_constraintEnd_toEndOf="parent"/>

  <Button
         android:id="@+id/addButton"
         android:layout_width="0dp"
         android:layout_height="wrap_content"
         android:text="@string/add"
         app:layout_constraintTop_toBottomOf="@id/numberInput2"
         app:layout_constraintStart_toStartOf="parent"
         app:layout_constraintEnd_toEndOf="parent"
         android:layout_marginTop="10dp"/>

  <Button
         android:id="@+id/subtractButton"
         android:layout_width="0dp"
         android:layout_height="wrap_content"
         android:text="@string/subtract"
         app:layout_constraintTop_toBottomOf="@id/addButton"
         app:layout_constraintStart_toStartOf="parent"
         app:layout_constraintEnd_toEndOf="parent"
         android:layout_marginTop="10dp"/>

  <Button
         android:id="@+id/multiplyButton"
         android:layout_width="0dp"
         android:layout_height="wrap_content"
         android:text="@string/multiply"
         app:layout_constraintTop_toBottomOf="@id/subtractButton"
         app:layout_constraintStart_toStartOf="parent"
         app:layout_constraintEnd_toEndOf="parent"
         android:layout_marginTop="10dp"/>

  <Button
         android:id="@+id/divideButton"
         android:layout_width="0dp"
         android:layout_height="wrap_content"
         android:text="@string/divide"
         app:layout_constraintTop_toBottomOf="@id/multiplyButton"
      app:layout_constraintStart_toStartOf="parent"
         app:layout_constraintEnd_toEndOf="parent"
         android:layout_marginTop="10dp"/>

 </android.support.constraint.ConstraintLayout>
```

MainActivity.java

```
package com.example.s4a;

 import android.app.Activity;
 import android.app.AlertDialog;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.Button;
 import android.widget.EditText;

 public class MainActivity extends Activity {
  private EditText numberInput1, numberInput2;
  private Button addButton, subtractButton, multiplyButton, divideButton;

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

      numberInput1 = findViewById(R.id.numberInput1);
      numberInput2 = findViewById(R.id.numberInput2);
      addButton = findViewById(R.id.addButton);
      subtractButton = findViewById(R.id.subtractButton);
      multiplyButton = findViewById(R.id.multiplyButton);
      divideButton = findViewById(R.id.divideButton);

      addButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              performOperation("Addition", '+');
          }
      });

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

```
        @Override
        public void onClick(View v) {
                performOperation("Subtraction", '-');
            }
      });

         multiplyButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
                performOperation("Multiplication", '*');
            }
      });

      divideButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
                performOperation("Division", '/');
            }
      });
  }

  private void performOperation(String operation, char operator) {
      double num1 = Double.parseDouble(numberInput1.getText().toString());
      double num2 = Double.parseDouble(numberInput2.getText().toString());
      double result = 0;

      switch (operator) {
          case '+': result = num1 + num2; break;
          case '-': result = num1 - num2; break;
          case '*': result = num1 * num2; break;
          case '/':
              if (num2 != 0) {
                  result = num1 / num2;
              } else {
                     showAlert("Error", "Cannot divide by zero");
                  return;
              }
              break;
      }

      showAlert(operation + " Result", "Result: " + result);
  }

  private void showAlert(String title, String message) {
      new AlertDialog.Builder(MainActivity.this)
              .setTitle(title)
              .setMessage(message)
                 .setPositiveButton("OK", null)
              .show();
 }
 }
```

Slip 4 :Q2A

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

main.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:gravity="center"
     android:orientation="vertical">

  <Button
        android:id="@+id/btnNotify"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
      android:text="Send Notification" />
 </LinearLayout>
```

Main.java

```
import android.app.Notification;
 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.support.v7.app.AppCompatActivity;
 import android.widget.Button;
 public class MainActivity extends AppCompatActivity {
  private static final int NOTIFICATION_ID = 1;
  private static final String CHANNEL_ID = "my_channel_01"; // Must match with created channel
  @Override
  protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      // Create Notification Channel
      createNotificationChannel();
      Button btnNotify = findViewById(R.id.btnNotify);
      btnNotify.setOnClickListener(v -> sendNotification());
  }

  private void sendNotification() {
      Intent intent = new Intent(this, SecondActivity.class);
      intent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK | Intent.FLAG_ACTIVITY_CLEAR_TASK);

      int flags = PendingIntent.FLAG_UPDATE_CURRENT;
      if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
          flags |= PendingIntent.FLAG_IMMUTABLE; // Required for API 23+
      }

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

      NotificationManager notificationManager = (NotificationManager) getSystemService(Context.NOTIFICATION_SERVICE);
```

```
      Notification notification;

      if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
          notification = new Notification.Builder(this, CHANNEL_ID)
                     .setSmallIcon(R.drawable.ic_launcher_foreground)
                  .setContentTitle("New Notification")
                  .setContentText("Click to view the message.")
                     .setContentIntent(pendingIntent)
                  .setAutoCancel(true)
                  .build();
      } else {
          notification = new Notification.Builder(this)
                     .setSmallIcon(R.drawable.ic_launcher_foreground)
                  .setContentTitle("New Notification")
                  .setContentText("Click to view the message.")
                     .setContentIntent(pendingIntent)
                  .setAutoCancel(true)
                  .build();
      }

      notificationManager.notify(NOTIFICATION_ID, notification);
  }


  private void createNotificationChannel() {
      if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
          CharSequence name = "My Notification Channel";
          String description = "Channel for sending notifications";
          int importance = NotificationManager.IMPORTANCE_DEFAULT;

          NotificationChannel channel = new NotificationChannel(CHANNEL_ID, name, importance);
             channel.setDescription(description);

          NotificationManager notificationManager = getSystemService(NotificationManager.class);
          if (notificationManager != null) {
                notificationManager.createNotificationChannel(channel);
          }
      }

  }
 }
Explanation:
Notification → Used to create a notification.
NotificationChannel → Required for Android 8.0 (API 26+) to create a notification channel.
NotificationManager → Manages and displays notifications.
PendingIntent → Allows launching an activity when the user taps the notification.
Context, Intent, Bundle → Used to start activities and handle application context.
Build → Helps check the Android version.
AppCompatActivity → Base class for the main activity.


public class MainActivity extends AppCompatActivity {
    private static final int NOTIFICATION_ID = 1;
    private static final String CHANNEL_ID = "my_channel_01"; // Must match the created channel
NOTIFICATION_ID → Unique ID for the notification.
CHANNEL_ID → Used to create and manage the notification channel.
createNotificationChannel(); → Ensures a notification channel exists (for Android 8.0+).
Finds the Button (btnNotify) and sets a Click Listener → When clicked, calls sendNotification().

sendNotification() Method
private void sendNotification() {
 Intent intent = new Intent(this, SecondActivity.class);
    intent.setFlags(Intent.FLAG_ACTIVITY_NEW_TASK | Intent.FLAG_ACTIVITY_CLEAR_TASK);
Creates an Intent → When the notification is clicked, SecondActivity opens.
Flags Explanation:
FLAG_ACTIVITY_NEW_TASK → Starts the activity as a new task.
FLAG_ACTIVITY_CLEAR_TASK → Clears any existing tasks related to this activity.

 Create a PendingIntent
 int flags = PendingIntent.FLAG_UPDATE_CURRENT;
 if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.M) {
     flags |= PendingIntent.FLAG_IMMUTABLE; // Required for Android 6.0+ (API 23+)
 }

 PendingIntent pendingIntent = PendingIntent.getActivity(this, 0, intent, flags);
PendingIntent is needed so the app can run SecondActivity when the user taps the notification.
FLAG_UPDATE_CURRENT → Updates the intent if it already exists.
FLAG_IMMUTABLE → Required for API 23+ (Android 6.0).

Get NotificationManager
 NotificationManager notificationManager = (NotificationManager) getSystemService(Context.NOTIFICATION_SERVICE);
NotificationManager is needed to send notifications.

 Create the Notification
 Notification notification;
 if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
     notification = new Notification.Builder(this, CHANNEL_ID)
                .setSmallIcon(R.drawable.ic_launcher_foreground)
             .setContentTitle("New Notification")
             .setContentText("Click to view the message.")
                .setContentIntent(pendingIntent)
             .setAutoCancel(true)
             .build();
 } else {
     notification = new Notification.Builder(this)
                .setSmallIcon(R.drawable.ic_launcher_foreground)
             .setContentTitle("New Notification")
             .setContentText("Click to view the message.")
                .setContentIntent(pendingIntent)
             .setAutoCancel(true)
             .build();
 }
For Android 8.0+ (API 26+)
Uses Notification.Builder(this, CHANNEL_ID).
Requires a notification channel.
```

```
For Android versions below 8.0
Uses Notification.Builder(this).
Works without a channel.
Common Features in Both Versions
setSmallIcon(R.drawable.ic_launcher_foreground) → Sets an icon for the notification.
setContentTitle("New Notification") → Title of the notification.
setContentText("Click to view the message.") → Short description.
setContentIntent(pendingIntent) → Opens SecondActivity on click.
setAutoCancel(true) → Dismisses notification when clicked.

 Send the Notification
 notificationManager.notify(NOTIFICATION_ID, notification);
}
notify(NOTIFICATION_ID, notification) → Displays the notification.

createNotificationChannel() Method
private void createNotificationChannel() {
 if (Build.VERSION.SDK_INT >= Build.VERSION_CODES.O) {
     CharSequence name = "My Notification Channel";
     String description = "Channel for sending notifications";
     int importance = NotificationManager.IMPORTANCE_DEFAULT;

     NotificationChannel channel = new NotificationChannel(CHANNEL_ID, name, importance);
     channel.setDescription(description);

     NotificationManager notificationManager = getSystemService(NotificationManager.class);
     if (notificationManager != null) {
           notificationManager.createNotificationChannel(channel);
     }
 }
}
For Android 8.0+ (API 26+)
Creates a Notification Channel.
Name: "My Notification Channel"
Description: "Channel for sending notifications"
Importance: IMPORTANCE_DEFAULT (shows notifications normally).
Calls createNotificationChannel(channel) to register the channel.


SecondActivity.xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:gravity="center"
     android:orientation="vertical">

  <TextView
        android:id="@+id/txtMessage"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
      android:text="Message will appear here."
      android:textSize="18sp" />
 </LinearLayout>

Second Activity.java
import android.support.v7.app.AppCompatActivity;
 import android.os.Bundle;
 import android.widget.TextView;

 public class SecondActivity extends AppCompatActivity {

  @Override
  protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_second);
      TextView txtMessage = findViewById(R.id.txtMessage);
      txtMessage.setText("You clicked the notification!");
  }
 }

slip 5 Q1
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.xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp">

  <EditText
      android:id="@+id/num1"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Enter first number"
         android:inputType="number"/>

  <EditText
      android:id="@+id/num2"
      android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Enter second number"
         android:inputType="number"/>

  <Button
        android:id="@+id/calculate"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Calculate"/>

 </LinearLayout>
Mainactivity.java
package com.example.s5q1;

 import android.app.Activity;
 import android.content.Intent;
 import android.os.Bundle;
```

```
 import android.view.View;
 import android.widget.Button;
 import android.widget.EditText;

 public class MainActivity extends Activity {
  EditText num1, num2;
  Button calculate;

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

      num1 = findViewById(R.id.num1);
      num2 = findViewById(R.id.num2);
      calculate = findViewById(R.id.calculate);

      calculate.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              int number1 = Integer.parseInt(num1.getText().toString());
              int number2 = Integer.parseInt(num2.getText().toString());
              double power = Math.pow(number1, number2);
              double average = (number1 + number2) / 2.0;

              Intent intent = new Intent(MainActivity.this, SecondActivity.class);
                 intent.putExtra("power", power);
                 intent.putExtra("average", average);
              startActivity(intent);
          }
      });
  }
 }
SecondActivity.xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp">

  <TextView
         android:id="@+id/result"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
         android:textSize="18sp"/>
 </LinearLayout>

SecondActivity.java
package com.example.s5q1;

 import android.app.Activity;
 import android.os.Bundle;
 import android.widget.TextView;

 import com.example.s5q1.R;

 public class SecondActivity extends Activity {
  TextView result;

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

      result = findViewById(R.id.result);

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

      result.setText("Power: " + power + "\nAverage: " + average);
 }
 }
************************************


Slip 5 Q2A
Q2. Create an Android application that creates a custom Alert Dialog containing Friends Name and onClick of Friend Name Button greet accordingly
MainActivity.xml
<?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:gravity="center"
  android:padding="20dp">

  <Button
         android:id="@+id/showDialogButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Show Friends List"
         android:layout_centerInParent="true"/>

 </RelativeLayout>
*****************************************
MainActivity.java
package com.example.s5a;

 import android.app.Activity;
 import android.app.AlertDialog;
 import android.content.DialogInterface;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.Button;
 import android.widget.Toast;

 public class MainActivity extends Activity {
```

```
  private Button showDialogButton;

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

      showDialogButton = findViewById(R.id.showDialogButton);

         showDialogButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              showCustomDialog();
          }
      });
  }

  private void showCustomDialog() {
      final String[] friends = {"Alice", "Bob", "Charlie", "David"};

      AlertDialog.Builder builder = new AlertDialog.Builder(this);
      builder.setTitle("Select a Friend");

      builder.setItems(friends, new DialogInterface.OnClickListener() {
          @Override
          public void onClick(DialogInterface dialog, int which) {
              String friendName = friends[which];
              Toast.makeText(MainActivity.this, "Hello, " + friendName + "!", Toast.LENGTH_SHORT).show();
          }
      });

         builder.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {
          @Override
          public void onClick(DialogInterface dialog, int which) {
              dialog.dismiss();
          }
      });

      AlertDialog dialog = builder.create();
      dialog.show();
  }
 }
```

Slip6Q1:
Q1. Create a Simple Application Which Send Hello! message from one activity to another with help of Button (Use Intent).
MainActivity.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp">

  <Button
         android:id="@+id/sendMessage"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Send Message"/>

 </LinearLayout>
```

MainAcitivity.java

```
package com.example.s6a;

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

 public class MainActivity extends Activity {
  Button sendMessage;

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

      sendMessage = findViewById(R.id.sendMessage);

         sendMessage.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              Intent intent = new Intent(MainActivity.this, SecondActivity.class);
                 intent.putExtra("message", "Hello!");
              startActivity(intent);
          }
    });
 }
 }
```

SecondActivity.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp">

  <TextView
         android:id="@+id/displayMessage"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
         android:textSize="18sp"/>
 </LinearLayout>
```

secondActivity.java

```
package com.example.s6a;

 import android.app.Activity;
```

```
 import android.os.Bundle;
 import android.widget.TextView;

 public class SecondActivity extends Activity {
  TextView displayMessage;

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

      displayMessage = findViewById(R.id.displayMessage);

      String message = getIntent().getStringExtra("message");
      displayMessage.setText(message);
 }
 }
```

S6q2A:
Q2. Create an Android Application that Demonstrates ListView and Onclick of List Display the Toast
MainActivity.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp">

  <ListView
         android:id="@+id/listView"
         android:layout_width="match_parent"
         android:layout_height="wrap_content" />

 </LinearLayout>
```

MainActivity.java

```
package com.example.s6b;

 import android.app.Activity;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.AdapterView;
 import android.widget.ArrayAdapter;
 import android.widget.ListView;
 import android.widget.Toast;

 public class MainActivity extends Activity {
  ListView listView;
  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, items);
      listView.setAdapter(adapter);

         listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {
          @Override
          public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
              String selectedItem = items[position];
              Toast.makeText(MainActivity.this, "Clicked: " + selectedItem, Toast.LENGTH_SHORT).show();
          }
    });
 }
 }
```

Slip7Q1
Q1. Create an Android Application that Demonstrate Radio Button.
MainActivity.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp">

  <RadioGroup
         android:id="@+id/radioGroup"
         android:layout_width="match_parent"
         android:layout_height="wrap_content">

      <RadioButton
             android:id="@+id/radioButton1"
             android:layout_width="wrap_content"
             android:layout_height="wrap_content"
          android:text="Option 1" />

      <RadioButton
             android:id="@+id/radioButton2"
             android:layout_width="wrap_content"
             android:layout_height="wrap_content"
          android:text="Option 2" />
  </RadioGroup>

  <Button
         android:id="@+id/submitButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Submit" />

 </LinearLayout>
```

MainActivity.java

```
package com.example.s7a;
```

```
 import android.app.Activity;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.Button;
 import android.widget.RadioButton;
 import android.widget.RadioGroup;
 import android.widget.Toast;

 public class MainActivity extends Activity {
  RadioGroup radioGroup;
  Button submitButton;

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

      radioGroup = findViewById(R.id.radioGroup);
      submitButton = findViewById(R.id.submitButton);

         submitButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              int selectedId = radioGroup.getCheckedRadioButtonId();
              if (selectedId != -1) {
                  RadioButton selectedRadioButton = findViewById(selectedId);
                  String selectedText = selectedRadioButton.getText().toString();
                  Toast.makeText(MainActivity.this, "Selected: " + selectedText, Toast.LENGTH_SHORT).show();
              } else {
                  Toast.makeText(MainActivity.this, "Please select an option", Toast.LENGTH_SHORT).show();
              }
          }
      });
 }
 }
```

Slip7Q2A
Q2.Create an Android application to demonstrate phone call using Implicit Intent.
MainActivity.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
  android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp">

  <EditText
         android:id="@+id/phoneNumber"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Enter phone number"
         android:inputType="phone" />

  <Button
         android:id="@+id/callButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Call" />

 </LinearLayout>
```

MainActivity.java

```
package com.example.s7b;

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

 public class MainActivity extends Activity {
  EditText phoneNumber;
  Button callButton;

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

      phoneNumber = findViewById(R.id.phoneNumber);
      callButton = findViewById(R.id.callButton);

      callButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              String number = phoneNumber.getText().toString();
              if (!number.isEmpty()) {
                  Intent callIntent = new Intent(Intent.ACTION_DIAL);
                     callIntent.setData(Uri.parse("tel:" + number));
                     startActivity(callIntent);
              }
          }
      });
 }
 }
```

****

 ****
Slip8Q1
Q1. Create an Android App with Login Screen. On successful login, gives message go to next Activity (Without Using Database& use Table Layout)
MainActivity.xml

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

```
    android:layout_height="match_parent"
    android:orientation="vertical"
  android:padding="16dp"
    android:gravity="center">

  <!-- Username Input -->
  <EditText
        android:id="@+id/usernameEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
     android:hint="Enter Username"
     android:inputType="text"/>

  <!-- Password Input -->
  <EditText
        android:id="@+id/passwordEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
     android:hint="Enter Password"
        android:inputType="textPassword"/>

  <!-- Login Button -->
  <Button
        android:id="@+id/loginButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="Login" />

 </LinearLayout>
```

MainActivity.java

```
package com.example.s8q1;

 import android.app.Activity;
 import android.content.Intent;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.Button;
 import android.widget.EditText;
 import android.widget.Toast;

 public class MainActivity extends Activity {

  private EditText usernameEditText, passwordEditText;
  private Button loginButton;

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

     // Initialize Views
     usernameEditText = findViewById(R.id.usernameEditText);
     passwordEditText = findViewById(R.id.passwordEditText);
     loginButton = findViewById(R.id.loginButton);

     // Set up login button click listener
        loginButton.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
             // Get user input
             String username = usernameEditText.getText().toString();
             String password = passwordEditText.getText().toString();

             // Hardcoded credentials (for simplicity, no database)
             String correctUsername = "user";
             String correctPassword = "pass";

             // Check credentials
             if (username.equals(correctUsername) && password.equals(correctPassword)) {
                 // Successful login, navigate to the next activity
 //                  Toast.makeText(MainActivity.this, "Login Successful", Toast.LENGTH_SHORT).show();
                 Intent intent = new Intent(MainActivity.this, SecondActivity.class);
                    startActivity(intent);
             } else {
                 // Invalid login
                 Toast.makeText(MainActivity.this, "Invalid Username or Password", Toast.LENGTH_SHORT).show();
             }
         }
     });
  }
 }
```

SecondActivity.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:gravity="center">

  <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="Login succesfull!"
        android:textSize="20sp"/>
 </LinearLayout>
```

SecondActivity.java

```
package com.example.s8q1;

 import android.app.Activity;
 import android.os.Bundle;

 public class SecondActivity extends Activity {

  @Override
```

```
  protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_second);
  }
 }
```

Slip8 q2B

2. Create application to send email with attachment.

MainActivity.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp"
     android:gravity="center">

  <!-- Email recipient input -->
  <EditText
        android:id="@+id/emailEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
      android:hint="Recipient Email"
      android:inputType="textEmailAddress"/>

  <!-- Subject input -->
  <EditText
        android:id="@+id/subjectEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
      android:hint="Subject"
        android:inputType="text"/>

  <!-- Message input -->
  <EditText
        android:id="@+id/messageEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
      android:hint="Message"
      android:inputType="text"/>

  <!-- Choose attachment button -->
  <Button
        android:id="@+id/chooseAttachmentButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
      android:text="Choose Attachment"/>

  <!-- Send email button -->
  <Button
        android:id="@+id/sendEmailButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
      android:text="Send Email" />

 </LinearLayout>
```

MainActivity.java

```
package com.example.s8q1;

 import android.content.Intent;
 import android.net.Uri;
 import android.os.Bundle;
 import android.provider.MediaStore;
 import android.view.View;
 import android.widget.Button;
 import android.widget.EditText;
 import android.widget.Toast;

 import androidx.appcompat.app.AppCompatActivity;

 import java.io.File;

 public class MainActivity extends AppCompatActivity {

  private EditText emailEditText, subjectEditText, messageEditText;
  private Button chooseAttachmentButton, sendEmailButton;
  private Uri attachmentUri;

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

     // Initialize views
     emailEditText = findViewById(R.id.emailEditText);
     subjectEditText = findViewById(R.id.subjectEditText);
     messageEditText = findViewById(R.id.messageEditText);
     chooseAttachmentButton = findViewById(R.id.chooseAttachmentButton);
     sendEmailButton = findViewById(R.id.sendEmailButton);

     // Set listener to choose attachment
        chooseAttachmentButton.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
             // Intent to choose an attachment (file)
             Intent intent = new Intent(Intent.ACTION_GET_CONTENT);
                intent.setType("*/*"); // Set the type of content to pick
                startActivityForResult(intent, 1);
         }
     });

     // Set listener to send email
        sendEmailButton.setOnClickListener(new View.OnClickListener() {
         @Override
         public void onClick(View v) {
             // Get input fields
```

```
            String recipient = emailEditText.getText().toString();
            String subject = subjectEditText.getText().toString();
            String message = messageEditText.getText().toString();

            // Check if an attachment is selected
            if (attachmentUri != null) {
                // Create an Intent to send email
                Intent emailIntent = new Intent(Intent.ACTION_SEND);
                   emailIntent.setType("vnd.android.cursor.dir/email"); // MIME type for email
                   emailIntent.putExtra(Intent.EXTRA_EMAIL, new String[]{recipient});
                   emailIntent.putExtra(Intent.EXTRA_SUBJECT, subject);
                   emailIntent.putExtra(Intent.EXTRA_TEXT, message);
                   emailIntent.putExtra(Intent.EXTRA_STREAM, attachmentUri);

                // Start the email app
                try {
                      startActivity(Intent.createChooser(emailIntent, "Send Email"));
                } catch (Exception e) {
                    Toast.makeText(MainActivity.this, "Error: " + e.getMessage(), Toast.LENGTH_SHORT).show();
                }
            } else {
                Toast.makeText(MainActivity.this, "Please select an attachment", Toast.LENGTH_SHORT).show();
            }
        }
    });
  }

  // Handle the result of choosing a file attachment
  @Override
  protected void onActivityResult(int requestCode, int resultCode, Intent data) {
        super.onActivityResult(requestCode, resultCode, data);

    // Check if the request is for choosing a file
    if (requestCode == 1 && resultCode == RESULT_OK) {
        // Get the URI of the selected file
        attachmentUri = data.getData();
        Toast.makeText(MainActivity.this, "Attachment selected", Toast.LENGTH_SHORT).show();
    }
  }
 }
#### write this persmissions in AndroidManifest.xml

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



Slip9Q1
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 n
MainActivity.xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
  android:padding="16dp"
     android:orientation="vertical">

  <EditText
        android:id="@+id/number1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
     android:hint="Enter first number"
        android:inputType="number" />

  <EditText
        android:id="@+id/number2"
     android:layout_width="match_parent"
        android:layout_height="wrap_content"
     android:hint="Enter second number"
        android:inputType="number" />

  <Button
        android:id="@+id/submitButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="Submit" />

  <TextView
        android:id="@+id/resultText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:textSize="20sp"/>

 </LinearLayout>
**************************************************************
MainActivity.java
package com.example.s9a;

 import android.app.Activity;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.Button;
 import android.widget.EditText;
 import android.widget.TextView;
 import android.widget.Toast;

 public class MainActivity extends Activity {
  EditText number1, number2;
  Button submitButton;
  TextView resultText;

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

```
      number1 = findViewById(R.id.number1);
      number2 = findViewById(R.id.number2);
      submitButton = findViewById(R.id.submitButton);
      resultText = findViewById(R.id.resultText);

         submitButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              String num1Str = number1.getText().toString();
              String num2Str = number2.getText().toString();

              if (num1Str.isEmpty() || num2Str.isEmpty()) {
                  Toast.makeText(MainActivity.this, "Please enter both numbers", Toast.LENGTH_SHORT).show();
                  return;
              }

              int num1 = Integer.parseInt(num1Str);
              int num2 = Integer.parseInt(num2Str);

              if (num1 > 10 && num2 > 10) {
                  Toast.makeText(MainActivity.this, "Both numbers must be 10 or less. Please enter again.", Toast.LENGTH_SHORT).show();
                     number1.setText("");
                     number2.setText("");
                  return;
              }

              resultText.setText("Number 1: " + num1 + "\nNumber 2: " + num2);
          }
    });
 }
 }
```

Slip9Q2A

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.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp"
     android:gravity="center">

  <!-- Button to get location -->
  <Button
         android:id="@+id/getLocationButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Get Current Location" />

  <!-- TextView to display address details -->
  <TextView
         android:id="@+id/addressTextView"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Address will appear here"
      android:textSize="16sp"
         android:paddingTop="20dp" />

 </LinearLayout>
```

MainActivity.xml

```
package com.example.s8q1;
 import android.Manifest;
 import android.content.Context;
 import android.content.pm.PackageManager;
 import android.location.Address;
 import android.location.Geocoder;
 import android.location.Location;
 import android.location.LocationListener;
 import android.location.LocationManager;
 import android.os.Bundle;
 import android.widget.Button;
 import android.widget.TextView;
 import android.widget.Toast;

 import androidx.appcompat.app.AppCompatActivity;
 import androidx.core.app.ActivityCompat;

 import java.io.IOException;
 import java.util.List;
 import java.util.Locale;

 public class MainActivity extends AppCompatActivity {

  private static final int LOCATION_PERMISSION_REQUEST_CODE = 1;

  private TextView addressTextView;
  private Button getLocationButton;
  private LocationManager locationManager;

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

      addressTextView = findViewById(R.id.addressTextView);
      getLocationButton = findViewById(R.id.getLocationButton);

      locationManager = (LocationManager) getSystemService(Context.LOCATION_SERVICE);

      // Check for location permissions
      if (ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION) != PackageManager.PERMISSION_GRANTED
```

```
            && ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_COARSE_LOCATION) != PackageManager.PERMISSION_GRANTED) {
        // Request permissions if not granted
        ActivityCompat.requestPermissions(this, new String[]{Manifest.permission.ACCESS_FINE_LOCATION}, LOCATION_PERMISSION_REQUEST_CODE);
    }

    // Set click listener to get location when button is clicked
       getLocationButton.setOnClickListener(v -> getCurrentLocation());
}

private void getCurrentLocation() {
    if (ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION) != PackageManager.PERMISSION_GRANTED
            && ActivityCompat.checkSelfPermission(this, Manifest.permission.ACCESS_COARSE_LOCATION) != PackageManager.PERMISSION_GRANTED) {
        return;
    }

    // Request location updates
       locationManager.requestLocationUpdates(LocationManager.GPS_PROVIDER, 0, 0, locationListener);
}

private final LocationListener locationListener = new LocationListener() {
    @Override
    public void onLocationChanged(Location location) {
        // Stop location updates once we have the location
           locationManager.removeUpdates(this);

        // Get latitude and longitude
        double latitude = location.getLatitude();
        double longitude = location.getLongitude();

        // Use Geocoder to get address
           getAddressFromLocation(latitude, longitude);
    }

    @Override
    public void onStatusChanged(String provider, int status, Bundle extras) {}

    @Override
    public void onProviderEnabled(String provider) {}

    @Override
    public void onProviderDisabled(String provider) {}
};

private void getAddressFromLocation(double latitude, double longitude) {
    Geocoder geocoder = new Geocoder(MainActivity.this, Locale.getDefault());
    try {
        // Get the list of address using the latitude and longitude
        List<Address> addresses = geocoder.getFromLocation(latitude, longitude, 1);

        if (addresses != null && !addresses.isEmpty()) {
            Address address = addresses.get(0);
            StringBuilder addressDetails = new StringBuilder();

            // Get the address details
               addressDetails.append("Address: ").append(address.getAddressLine(0)).append("\n");
               addressDetails.append("City: ").append(address.getLocality()).append("\n");
               addressDetails.append("Country: ").append(address.getCountryName());

            // Display the address details in the TextView
               addressTextView.setText(addressDetails.toString());
        } else {
            Toast.makeText(MainActivity.this, "No address found for the location", Toast.LENGTH_SHORT).show();
        }
    } catch (IOException e) {
        e.printStackTrace();
        Toast.makeText(MainActivity.this, "Unable to get address", Toast.LENGTH_SHORT).show();
    }
}

@Override
public void onRequestPermissionsResult(int requestCode, String[] permissions, int[] grantResults) {
    super.onRequestPermissionsResult(requestCode, permissions, grantResults);

    if (requestCode == LOCATION_PERMISSION_REQUEST_CODE) {
        if (grantResults.length > 0 && grantResults[0] == PackageManager.PERMISSION_GRANTED) {
            // If permission granted, fetch location
            getCurrentLocation();
        } else {
            Toast.makeText(this, "Permission denied", Toast.LENGTH_SHORT).show();
        }
    }
}
}
####give permission in AndroidManifest.xml
<uses-permission android:name="android.permission.ACCESS_FINE_LOCATION"/>
 <uses-permission android:name="android.permission.ACCESS_COARSE_LOCATION" />



Slip10q1
Q1. Create an Android Application that Demonstrate Switch and Toggle Button.
MainActivity.xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:padding="16dp"
     android:orientation="vertical">

  <Switch
        android:id="@+id/switch1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="Switch" />

  <ToggleButton
```

```
        android:id="@+id/toggleButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="Toggle Button" />

  <TextView
        android:id="@+id/textView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
     android:text="Status will be shown here"
     android:textSize="20sp" />

 </LinearLayout>
```

MainActivity.java

```
package com.example.s10a;

 import android.app.Activity;
 import android.os.Bundle;
 import android.widget.CompoundButton;
 import android.widget.Switch;
 import android.widget.TextView;
 import android.widget.ToggleButton;
 import android.widget.Toast;

 public class MainActivity extends Activity {
  Switch aSwitch;
  ToggleButton toggleButton;
  TextView textView;

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

     aSwitch = findViewById(R.id.switch1);
     toggleButton = findViewById(R.id.toggleButton);
     textView = findViewById(R.id.textView);

        aSwitch.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {
         @Override
         public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
             if (isChecked) {
                    textView.setText("Switch is ON");
                 Toast.makeText(MainActivity.this, "Switch turned ON", Toast.LENGTH_SHORT).show();
             } else {
                    textView.setText("Switch is OFF");
                 Toast.makeText(MainActivity.this, "Switch turned OFF", Toast.LENGTH_SHORT).show();
             }
         }
     });

        toggleButton.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {
         @Override
         public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
             if (isChecked) {
                    textView.setText("Toggle Button is ON");
                 Toast.makeText(MainActivity.this, "Toggle Button turned ON", Toast.LENGTH_SHORT).show();
             } else {
                    textView.setText("Toggle Button is OFF");
                 Toast.makeText(MainActivity.this, "Toggle Button turned OFF", Toast.LENGTH_SHORT).show();
             }
         }
    });
 }
 }
```

Slip10 Q2B

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

MainActivity.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:padding="16dp"
     android:orientation="vertical">

  <ListView
        android:id="@+id/listView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>

 </LinearLayout>
```

MainActivity.java

```
package com.example.s10b;

 import android.app.Activity;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.AdapterView;
 import android.widget.ArrayAdapter;
 import android.widget.ListView;
 import android.widget.Toast;

 public class MainActivity extends Activity {
  ListView listView;
  String[] fruits = {"Apple", "Banana", "Cherry", "Date", "Grapes", "Mango", "Orange", "Papaya", "Pineapple", "Watermelon"};

  @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, fruits);
     listView.setAdapter(adapter);
```

```
        listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {
         @Override
         public void onItemClick(AdapterView<?> parent, View view, int position, long id) {
             String selectedFruit = fruits[position];
             Toast.makeText(MainActivity.this, "Selected: " + selectedFruit, Toast.LENGTH_SHORT).show();
         }
    });
 }
 }
```

Slip 11 Q1
Q.1 Create android application to change Font Size, Color and Font Family of String
MainActivity.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:gravity="center"
  android:padding="20dp">

  <!-- TextView to display the college name -->
  <TextView
         android:id="@+id/collegeName"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="My College Name"
      android:textSize="20sp"
         android:textColor="#000000"
         android:padding="10dp"/>

  <!-- Button to change text style -->
  <Button
         android:id="@+id/changeStyleButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Change Style"
         android:layout_marginTop="30dp"/>

 </LinearLayout>
**********************************************************
MainActivity.java
package com.example.s8q1;

 import android.app.Activity;
 import android.graphics.Color;
 import android.graphics.Typeface;
 import android.os.Bundle;
 import android.view.View;
 import android.widget.Button;
 import android.widget.TextView;

 public class MainActivity extends Activity {
  private TextView collegeName;
  private Button changeStyleButton;
  private int styleIndex = 0;  // 0: normal, 1: bold, 2: italic

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

      // Initialize the TextView and Button
      collegeName = findViewById(R.id.collegeName);
      changeStyleButton = findViewById(R.id.changeStyleButton);

      // Set up the button click listener
         changeStyleButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              // Change the text color to blue
                 collegeName.setTextColor(Color.BLUE);

              // Toggle between normal, bold, and italic styles
              switch (styleIndex) {
                  case 0:
                         collegeName.setTypeface(Typeface.DEFAULT, Typeface.NORMAL);  // Normal style
                         collegeName.setTextSize(20);  // Set font size to 20
                      styleIndex = 1;  // Set the next style to bold
                      break;
                  case 1:
                         collegeName.setTypeface(Typeface.DEFAULT_BOLD);  // Bold style
                         collegeName.setTextSize(26);  // Set font size to 26
                      styleIndex = 2;  // Set the next style to italic
                      break;
                  case 2:
                         collegeName.setTypeface(Typeface.create("sans-serif", Typeface.ITALIC));  // Italic style
                         collegeName.setTextSize(22);  // Set font size to 22
                      styleIndex = 0;  // Reset to normal style
                      break;
              }
          }
      });
  }
 }
//see output in slip 3
Slip 11 Q2A
 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
MainActivity.xml

<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
```

```
    android:orientation="vertical"
  android:padding="20dp"
     android:gravity="center">

  <!-- First Name -->
  <EditText
         android:id="@+id/firstName"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="First Name"
         android:inputType="textPersonName"/>

  <!-- Middle Name -->
  <EditText
         android:id="@+id/middleName"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Middle Name"
         android:inputType="textPersonName"/>

  <!-- Last Name -->
  <EditText
         android:id="@+id/lastName"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Last Name"
         android:inputType="textPersonName"/>

  <!-- Date of Birth -->
  <EditText
      android:id="@+id/dob"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Date of Birth"
         android:inputType="date"/>

  <!-- Address -->
  <EditText
         android:id="@+id/address"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Address"
         android:inputType="textMultiLine"/>

  <!-- Email -->
  <EditText
      android:id="@+id/email"
      android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Email"
         android:inputType="textEmailAddress"/>

  <!-- Submit Button -->
  <Button
         android:id="@+id/submitButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Submit"
         android:layout_marginTop="20dp"/>
 </LinearLayout>
```

MainActivity.java

```
package com.example.s8q1;

 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 firstNameEditText, middleNameEditText, lastNameEditText, dobEditText, addressEditText, emailEditText;
  private Button submitButton;

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

      // Initialize the views
      firstNameEditText = findViewById(R.id.firstName);
      middleNameEditText = findViewById(R.id.middleName);
      lastNameEditText = findViewById(R.id.lastName);
      dobEditText = findViewById(R.id.dob);
      addressEditText = findViewById(R.id.address);
      emailEditText = findViewById(R.id.email);
      submitButton = findViewById(R.id.submitButton);

      // Set the button click listener
         submitButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              // Get data from EditText fields
              String firstName = firstNameEditText.getText().toString();
              String middleName = middleNameEditText.getText().toString();
              String lastName = lastNameEditText.getText().toString();
              String dob = dobEditText.getText().toString();
              String address = addressEditText.getText().toString();
              String email = emailEditText.getText().toString();

              // Create an Intent to pass the data to the second activity
              Intent intent = new Intent(MainActivity.this, SecondActivity.class);
```

```
                intent.putExtra("FIRST_NAME", firstName);
                intent.putExtra("MIDDLE_NAME", middleName);
                intent.putExtra("LAST_NAME", lastName);
                intent.putExtra("DOB", dob);
             intent.putExtra("ADDRESS", address);
                intent.putExtra("EMAIL", email);

             // Start the second activity
             startActivity(intent);
          }
      });
  }
 }
```

SecondActivity.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="20dp"
     android:gravity="center">

  <!-- First Name -->
  <TextView
         android:id="@+id/firstNameDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="First Name: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

  <!-- Middle Name -->
  <TextView
         android:id="@+id/middleNameDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Middle Name: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

  <!-- Last Name -->
  <TextView
         android:id="@+id/lastNameDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Last Name: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

  <!-- Date of Birth -->
  <TextView
         android:id="@+id/dobDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Date of Birth: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

  <!-- Address -->
  <TextView
         android:id="@+id/addressDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Address: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

  <!-- Email -->
  <TextView
         android:id="@+id/emailDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Email: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

 </LinearLayout>
```

**********8

SecondActivity.java

```
package com.example.s8q1;

 import android.os.Bundle;
 import android.widget.TextView;

 import androidx.appcompat.app.AppCompatActivity;

 public class SecondActivity extends AppCompatActivity {

  private TextView firstNameDisplay, middleNameDisplay, lastNameDisplay, dobDisplay, addressDisplay, emailDisplay;

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

      // Initialize the TextViews
      firstNameDisplay = findViewById(R.id.firstNameDisplay);
      middleNameDisplay = findViewById(R.id.middleNameDisplay);
      lastNameDisplay = findViewById(R.id.lastNameDisplay);
      dobDisplay = findViewById(R.id.dobDisplay);
      addressDisplay = findViewById(R.id.addressDisplay);
      emailDisplay = findViewById(R.id.emailDisplay);

      // Get the data passed from the FirstActivity
      String firstName = getIntent().getStringExtra("FIRST_NAME");
      String middleName = getIntent().getStringExtra("MIDDLE_NAME");
```

```
      String lastName = getIntent().getStringExtra("LAST_NAME");
      String dob = getIntent().getStringExtra("DOB");
      String address = getIntent().getStringExtra("ADDRESS");
      String email = getIntent().getStringExtra("EMAIL");

      // Display the data in TextViews
         firstNameDisplay.setText("First Name: " + firstName);
         middleNameDisplay.setText("Middle Name: " + middleName);
         lastNameDisplay.setText("Last Name: " + lastName);
      dobDisplay.setText("Date of Birth: " + dob);
         addressDisplay.setText("Address: " + address);
      emailDisplay.setText("Email: " + email);
  }
 }



**************************************************
###### Don't forget to declare both activities in your AndroidManifest.xml:

<activity
     android:name=".SecondActivity"
   android:exported="false" />
 <activity
     android:name=".MainActivity"
  android:exported="true">




Slip 12 Q1
Q1.Create a Simple Application Which Send "Hi" message from one activity to another with help of Button (Use Intent).
MainActivity.xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp">

  <Button
         android:id="@+id/sendMessage"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Send Message"/>

 </LinearLayout>
MainAcitivity.java
package com.example.s6a;

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

 public class MainActivity extends Activity {
  Button sendMessage;

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

      sendMessage = findViewById(R.id.sendMessage);

         sendMessage.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              Intent intent = new Intent(MainActivity.this, SecondActivity.class);
                 intent.putExtra("message", "Hello!");
              startActivity(intent);
          }
    });
 }
 }
SecondActivity.xml

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:orientation="vertical"
  android:padding="16dp">

  <TextView
         android:id="@+id/displayMessage"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
         android:textSize="18sp"/>
 </LinearLayout>
secondActivity.java
package com.example.s6a;

 import android.app.Activity;
 import android.os.Bundle;
 import android.widget.TextView;

 public class SecondActivity extends Activity {
  TextView displayMessage;

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

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

```
      String message = getIntent().getStringExtra("message");
      displayMessage.setText(message);
 }
 }
```

Slip 12 Q2B

Q.2 Create an application to demonstrate date and time picker.

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">

    <Button
        android:id="@+id/datePickerButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Select Date" />

    <TextView
        android:id="@+id/dateTextView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Selected Date: "
        android:textSize="16sp"
        android:layout_marginTop="8dp" />

    <Button
        android:id="@+id/timePickerButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Select Time" />

    <TextView
        android:id="@+id/timeTextView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Selected Time: "
        android:textSize="16sp"
        android:layout_marginTop="8dp" />

</LinearLayout>
```

MainActivity.java

```
package com.example.datetimepickerapp;

import android.app.DatePickerDialog;
import android.app.TimePickerDialog;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.DatePicker;
import android.widget.TextView;
import android.widget.TimePicker;
import androidx.appcompat.app.AppCompatActivity;
import java.text.SimpleDateFormat;
import java.util.Calendar;
import java.util.Locale;

public class MainActivity extends AppCompatActivity {

    private TextView dateTextView;
    private TextView timeTextView;
    private Calendar calendar;

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

        Button datePickerButton = findViewById(R.id.datePickerButton);
        Button timePickerButton = findViewById(R.id.timePickerButton);
        dateTextView = findViewById(R.id.dateTextView);
        timeTextView = findViewById(R.id.timeTextView);

        calendar = Calendar.getInstance();

        datePickerButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showDatePickerDialog();
            }
        });

        timePickerButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                showTimePickerDialog();
            }
        });
    }

    private void showDatePickerDialog() {
        DatePickerDialog datePickerDialog = new DatePickerDialog(
            this,
            new DatePickerDialog.OnDateSetListener() {
                @Override
                public void onDateSet(DatePicker view, int year, int month, int dayOfMonth) {
                    calendar.set(Calendar.YEAR, year);
                    calendar.set(Calendar.MONTH, month);
                    calendar.set(Calendar.DAY_OF_MONTH, dayOfMonth);
                    updateDateTextView();
                }
            },
```

```
            calendar.get(Calendar.YEAR),
            calendar.get(Calendar.MONTH),
            calendar.get(Calendar.DAY_OF_MONTH)
        );
        datePickerDialog.show();
    }

    private void showTimePickerDialog() {
        TimePickerDialog timePickerDialog = new TimePickerDialog(
            this,
            new TimePickerDialog.OnTimeSetListener() {
                @Override
                public void onTimeSet(TimePicker view, int hourOfDay, int minute) {
                    calendar.set(Calendar.HOUR_OF_DAY, hourOfDay);
                    calendar.set(Calendar.MINUTE, minute);
                    updateTimeTextView();
                }
            },
            calendar.get(Calendar.HOUR_OF_DAY),
            calendar.get(Calendar.MINUTE),
            true // Use 24-hour format
        );
        timePickerDialog.show();
    }

    private void updateDateTextView() {
        SimpleDateFormat dateFormat = new SimpleDateFormat("yyyy-MM-dd", Locale.getDefault());
        dateTextView.setText("Selected Date: " + dateFormat.format(calendar.getTime()));
    }

    private void updateTimeTextView() {
        SimpleDateFormat timeFormat = new SimpleDateFormat("HH:mm", Locale.getDefault());
        timeTextView.setText("Selected Time: " + timeFormat.format(calendar.getTime()));
    }
}


Slip 13 Q1
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 button4 = findViewById(R.id.button4);
        Button button5 = findViewById(R.id.button5);
        Button button6 = findViewById(R.id.button6);
        Button button7 = findViewById(R.id.button7);
        Button button8 = findViewById(R.id.button8);
        Button button9 = findViewById(R.id.button9);
        Button button10 = findViewById(R.id.button10);

        button4.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Add functionality for button 4
            }
        });

        button5.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Add functionality for button 5
            }
        });

        button6.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Add functionality for button 6
            }
        });

        button7.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Add functionality for button 7
            }
        });

        button8.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Add functionality for button 8
            }
        });

        button9.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Add functionality for button 9
            }
        });

        button10.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Add functionality for button 10
            }
        });
```

```
    }
}
```

Slip 13 Q2A

Q2. Write a program to search a specific location on Google Map.

```
dependencies {
    implementation 'com.google.android.gms:play-services-maps:18.0.2'
    implementation 'com.google.android.libraries.places:places:2.5.0'
}
```

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/searchBox"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter location" />

    <Button
        android:id="@+id/searchButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Search" />

    <fragment
        android:id="@+id/mapFragment"
        android:name="com.google.android.gms.maps.SupportMapFragment"
        android:layout_width="match_parent"
        android:layout_height="0dp"
        android:layout_weight="1" />

</LinearLayout>
```

MainActivity.java

```
package com.example.locationsearchapp;

import android.Manifest;
import android.content.pm.PackageManager;
import android.location.Location;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;
import androidx.core.content.ContextCompat;
import com.google.android.gms.location.FusedLocationProviderClient;
import com.google.android.gms.location.LocationServices;
import com.google.android.gms.maps.CameraUpdateFactory;
import com.google.android.gms.maps.GoogleMap;
import com.google.android.gms.maps.OnMapReadyCallback;
import com.google.android.gms.maps.SupportMapFragment;
import com.google.android.gms.maps.model.LatLng;
import com.google.android.gms.maps.model.MarkerOptions;
import com.google.android.gms.tasks.OnSuccessListener;
import com.google.android.libraries.places.api.Places;
import com.google.android.libraries.places.api.model.Place;
import com.google.android.libraries.places.api.net.PlacesClient;
import com.google.android.libraries.places.widget.AutocompleteSupportFragment;
import com.google.android.libraries.places.widget.listener.PlaceSelectionListener;
import java.util.Arrays;

public class MainActivity extends AppCompatActivity implements OnMapReadyCallback {

    private GoogleMap mMap;
    private EditText searchBox;
    private Button searchButton;
    private FusedLocationProviderClient fusedLocationClient;
    private PlacesClient placesClient;

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

        // Initialize the Places API
        Places.initialize(getApplicationContext(), "YOUR_API_KEY");
        placesClient = Places.createClient(this);

        searchBox = findViewById(R.id.searchBox);
        searchButton = findViewById(R.id.searchButton);

        // Obtain the SupportMapFragment and get notified when the map is ready to be used.
        SupportMapFragment mapFragment = (SupportMapFragment) getSupportFragmentManager()
                .findFragmentById(R.id.mapFragment);
        mapFragment.getMapAsync(this);

        fusedLocationClient = LocationServices.getFusedLocationProviderClient(this);

        searchButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                searchLocation(searchBox.getText().toString());
            }
        });
    }
```

```
    private void searchLocation(String location) {
        if (location == null || location.isEmpty()) {
            Toast.makeText(this, "Enter a location", Toast.LENGTH_SHORT).show();
            return;
        }

        // Use the Places API to find the location
        AutocompleteSupportFragment autocompleteFragment = (AutocompleteSupportFragment)
                getSupportFragmentManager().findFragmentById(R.id.autocomplete_fragment);

        autocompleteFragment.setPlaceFields(Arrays.asList(Place.Field.ID, Place.Field.NAME, Place.Field.LAT_LNG));
        autocompleteFragment.setOnPlaceSelectedListener(new PlaceSelectionListener() {
            @Override
            public void onPlaceSelected(@NonNull Place place) {
                LatLng latLng = place.getLatLng();
                if (latLng != null) {
                    mMap.clear();
                    mMap.addMarker(new MarkerOptions().position(latLng).title(place.getName()));
                    mMap.moveCamera(CameraUpdateFactory.newLatLngZoom(latLng, 15));
                }
            }

            @Override
            public void onError(@NonNull Status status) {
                Toast.makeText(MainActivity.this, "Error: " + status.getStatusMessage(), Toast.LENGTH_SHORT).show();
            }
        });
    }

    @Override
    public void onMapReady(GoogleMap googleMap) {
        mMap = googleMap;

        // Check for location permission
        if (ContextCompat.checkSelfPermission(this, Manifest.permission.ACCESS_FINE_LOCATION)
                == PackageManager.PERMISSION_GRANTED) {
            mMap.setMyLocationEnabled(true);
            fusedLocationClient.getLastLocation()
                    .addOnSuccessListener(this, new OnSuccessListener<Location>() {
                        @Override
                        public void onSuccess(Location location) {
                            if (location != null) {
                                LatLng currentLocation = new LatLng(location.getLatitude(), location.getLongitude());
                                mMap.moveCamera(CameraUpdateFactory.newLatLngZoom(currentLocation, 15));
                            }
                        }
                    });
        } else {
            ActivityCompat.requestPermissions(this,
                    new String[]{Manifest.permission.ACCESS_FINE_LOCATION},
                    1);
        }
    }

    @Override
    public void onRequestPermissionsResult(int requestCode, @NonNull String[] permissions, @NonNull int[] grantResults) {
        if (requestCode == 1) {
            if (grantResults.length > 0
                    && grantResults[0] == PackageManager.PERMISSION_GRANTED) {
                if (ContextCompat.checkSelfPermission(this,
                        Manifest.permission.ACCESS_FINE_LOCATION)
                        == PackageManager.PERMISSION_GRANTED) {
                    mMap.setMyLocationEnabled(true);
                }
            } else {
                Toast.makeText(this, "Permission denied", Toast.LENGTH_SHORT).show();
            }
        }
    }
}
```

Slip 14 Q1

Q1. Create a Simple Application which shows Life Cycle of Activity.

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    android:gravity="center"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Activity Lifecycle Demo"
        android:textSize="24sp"
        android:layout_marginTop="20dp" />

</LinearLayout>
```

MainActivity.java

```
package com.example.activitylifecycleapp;

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

public class MainActivity extends AppCompatActivity {

    private static final String TAG = "ActivityLifecycle";

    @Override
```

```
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d(TAG, "onCreate: Activity is being created.");
    }

    @Override
    protected void onStart() {
        super.onStart();
        Log.d(TAG, "onStart: Activity is about to become visible.");
    }

    @Override
    protected void onResume() {
        super.onResume();
        Log.d(TAG, "onResume: Activity has become visible.");
    }

    @Override
    protected void onPause() {
        super.onPause();
        Log.d(TAG, "onPause: Another activity is taking focus.");
    }

    @Override
    protected void onStop() {
        super.onStop();
        Log.d(TAG, "onStop: Activity is no longer visible.");
    }

    @Override
    protected void onDestroy() {
        super.onDestroy();
        Log.d(TAG, "onDestroy: Activity is being destroyed.");
    }

    @Override
    protected void onRestart() {
        super.onRestart();
        Log.d(TAG, "onRestart: Activity is restarting.");
    }
}
```

Slip 14 Q2B

Q2. Create an Android application to send email.

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/emailEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Recipient's Email"
        android:inputType="textEmailAddress" />

    <EditText
        android:id="@+id/subjectEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Subject" />

    <EditText
        android:id="@+id/messageEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Message"
        android:inputType="textMultiLine"
        android:lines="5" />

    <Button
        android:id="@+id/sendEmailButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Send Email" />

</LinearLayout>
```

MainActivity.java

```
package com.example.emailsenderapp;

import android.content.Intent;
import android.os.Bundle;
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 {

    private EditText emailEditText;
    private EditText subjectEditText;
    private EditText messageEditText;
    private Button sendEmailButton;

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

```
        emailEditText = findViewById(R.id.emailEditText);
        subjectEditText = findViewById(R.id.subjectEditText);
        messageEditText = findViewById(R.id.messageEditText);
        sendEmailButton = findViewById(R.id.sendEmailButton);

        sendEmailButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                sendEmail();
            }
        });
    }

    private void sendEmail() {
        String recipient = emailEditText.getText().toString().trim();
        String subject = subjectEditText.getText().toString().trim();
        String message = messageEditText.getText().toString().trim();

        if (recipient.isEmpty()) {
            Toast.makeText(this, "Please enter recipient's email", Toast.LENGTH_SHORT).show();
            return;
        }

        Intent emailIntent = new Intent(Intent.ACTION_SEND);
        emailIntent.setData(android.net.Uri.parse("mailto:"));
        emailIntent.setType("text/plain");
        emailIntent.putExtra(Intent.EXTRA_EMAIL, new String[]{recipient});
        emailIntent.putExtra(Intent.EXTRA_SUBJECT, subject);
        emailIntent.putExtra(Intent.EXTRA_TEXT, message);

        try {
            startActivity(Intent.createChooser(emailIntent, "Send email using..."));
        } catch (android.content.ActivityNotFoundException ex) {
            Toast.makeText(this, "No email clients installed.", Toast.LENGTH_SHORT).show();
        }
    }
}

Slip 15 Q1
res/values/styles.xml

<style name="BorderStyle">
    <item name="android:layout_margin">4dp</item>
    <item name="android:background">@drawable/border_shape</item>
</style>
res/drawable/border_shape.xml
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">
    <solid android:color="#E0E0E0"/> <!-- Light gray color for the background -->
    <stroke
        android:width="2dp"
        android:color="#9E9E9E"/> <!-- Gray color for the border -->
    <padding android:left="4dp" android:top="4dp" android:right="4dp" android:bottom="4dp"/>
    <corners android:radius="4dp"/> <!-- Rounded corners -->
</shape>
res/layout/activity_main.xml
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:gravity="center"
        android:text="Hello World!"
        android:textSize="24sp"
        style="@style/BorderStyle" />

</FrameLayout>

Slip 15 Q2B
Q2. Create First Activity to accept information like Employee First Name, Middle Name, Last Name, Salary, Address, Email ID and display all information on Seco
MainActivity.xml
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="20dp"
     android:gravity="center">

  <!-- First Name -->
  <EditText
         android:id="@+id/firstName"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="First Name"
         android:inputType="textPersonName"/>

  <!-- Middle Name -->
  <EditText
         android:id="@+id/middleName"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Middle Name"
         android:inputType="textPersonName"/>

  <!-- Last Name -->
  <EditText
         android:id="@+id/lastName"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Last Name"
         android:inputType="textPersonName"/>
```

```
  <!-- Date of Birth -->
  <EditText
      android:id="@+id/dob"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Date of Birth"
         android:inputType="date"/>

  <!-- Address -->
  <EditText
         android:id="@+id/address"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Address"
         android:inputType="textMultiLine"/>

  <!-- Email -->
  <EditText
      android:id="@+id/email"
      android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Email"
         android:inputType="textEmailAddress"/>

  <!-- Submit Button -->
  <Button
         android:id="@+id/submitButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Submit"
         android:layout_marginTop="20dp"/>
 </LinearLayout>
```

MainActivity.java

```
package com.example.s8q1;

 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 firstNameEditText, middleNameEditText, lastNameEditText, dobEditText, addressEditText, emailEditText;
  private Button submitButton;

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

      // Initialize the views
      firstNameEditText = findViewById(R.id.firstName);
      middleNameEditText = findViewById(R.id.middleName);
      lastNameEditText = findViewById(R.id.lastName);
      dobEditText = findViewById(R.id.dob);
      addressEditText = findViewById(R.id.address);
      emailEditText = findViewById(R.id.email);
      submitButton = findViewById(R.id.submitButton);

      // Set the button click listener
         submitButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              // Get data from EditText fields
              String firstName = firstNameEditText.getText().toString();
              String middleName = middleNameEditText.getText().toString();
              String lastName = lastNameEditText.getText().toString();
              String dob = dobEditText.getText().toString();
              String address = addressEditText.getText().toString();
              String email = emailEditText.getText().toString();

              // Create an Intent to pass the data to the second activity
              Intent intent = new Intent(MainActivity.this, SecondActivity.class);
                 intent.putExtra("FIRST_NAME", firstName);
                 intent.putExtra("MIDDLE_NAME", middleName);
                 intent.putExtra("LAST_NAME", lastName);
                 intent.putExtra("DOB", dob);
              intent.putExtra("ADDRESS", address);
                 intent.putExtra("EMAIL", email);

              // Start the second activity
              startActivity(intent);
          }
      });
  }
 }
```

SecondActivity.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="20dp"
     android:gravity="center">

  <!-- First Name -->
  <TextView
         android:id="@+id/firstNameDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
```

```
      android:text="First Name: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

  <!-- Middle Name -->
  <TextView
         android:id="@+id/middleNameDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Middle Name: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

  <!-- Last Name -->
  <TextView
         android:id="@+id/lastNameDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Last Name: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

  <!-- Date of Birth -->
  <TextView
         android:id="@+id/dobDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Date of Birth: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

  <!-- Address -->
  <TextView
         android:id="@+id/addressDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Address: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

  <!-- Email -->
  <TextView
         android:id="@+id/emailDisplay"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Email: "
      android:textSize="18sp"
         android:layout_marginBottom="10dp"/>

 </LinearLayout>
*******************************************8
SecondActivity.java
package com.example.s8q1;

 import android.os.Bundle;
 import android.widget.TextView;

 import androidx.appcompat.app.AppCompatActivity;

 public class SecondActivity extends AppCompatActivity {

  private TextView firstNameDisplay, middleNameDisplay, lastNameDisplay, dobDisplay, addressDisplay, emailDisplay;

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

      // Initialize the TextViews
      firstNameDisplay = findViewById(R.id.firstNameDisplay);
      middleNameDisplay = findViewById(R.id.middleNameDisplay);
      lastNameDisplay = findViewById(R.id.lastNameDisplay);
      dobDisplay = findViewById(R.id.dobDisplay);
      addressDisplay = findViewById(R.id.addressDisplay);
      emailDisplay = findViewById(R.id.emailDisplay);

      // Get the data passed from the FirstActivity
      String firstName = getIntent().getStringExtra("FIRST_NAME");
      String middleName = getIntent().getStringExtra("MIDDLE_NAME");
      String lastName = getIntent().getStringExtra("LAST_NAME");
      String dob = getIntent().getStringExtra("DOB");
      String address = getIntent().getStringExtra("ADDRESS");
      String email = getIntent().getStringExtra("EMAIL");

      // Display the data in TextViews
         firstNameDisplay.setText("First Name: " + firstName);
         middleNameDisplay.setText("Middle Name: " + middleName);
         lastNameDisplay.setText("Last Name: " + lastName);
      dobDisplay.setText("Date of Birth: " + dob);
         addressDisplay.setText("Address: " + address);
      emailDisplay.setText("Email: " + email);
  }
 }



*****************************************************
###### Don't forget to declare both activities in your AndroidManifest.xml:

<activity
     android:name=".SecondActivity"
   android:exported="false" />
 <activity
     android:name=".MainActivity"
  android:exported="true">
```

Slip 16 Q1
  Q1. Create an Android App, it reads the Students Details (Name, Surname, Class, Gender, Hobbies, Marks) and display the all information in another activity i
MainActivity.xml

```
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="20dp"
     android:gravity="center">

  <!-- First Name -->
  <EditText
         android:id="@+id/firstName"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="First Name"
         android:inputType="textPersonName"/>

  <!-- Middle Name -->
  <EditText
         android:id="@+id/middleName"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Middle Name"
         android:inputType="textPersonName"/>

  <!-- Last Name -->
  <EditText
         android:id="@+id/lastName"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Last Name"
         android:inputType="textPersonName"/>

  <!-- Date of Birth -->
  <EditText
      android:id="@+id/dob"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Date of Birth"
         android:inputType="date"/>

  <!-- Address -->
  <EditText
         android:id="@+id/address"
         android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Address"
         android:inputType="textMultiLine"/>

  <!-- Email -->
  <EditText
      android:id="@+id/email"
      android:layout_width="match_parent"
         android:layout_height="wrap_content"
      android:hint="Email"
         android:inputType="textEmailAddress"/>

  <!-- Submit Button -->
  <Button
         android:id="@+id/submitButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:text="Submit"
         android:layout_marginTop="20dp"/>
 </LinearLayout>
```

MainActivity.java

```
package com.example.s8q1;

 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 firstNameEditText, middleNameEditText, lastNameEditText, dobEditText, addressEditText, emailEditText;
  private Button submitButton;

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

      // Initialize the views
      firstNameEditText = findViewById(R.id.firstName);
      middleNameEditText = findViewById(R.id.middleName);
      lastNameEditText = findViewById(R.id.lastName);
      dobEditText = findViewById(R.id.dob);
      addressEditText = findViewById(R.id.address);
      emailEditText = findViewById(R.id.email);
      submitButton = findViewById(R.id.submitButton);

      // Set the button click listener
         submitButton.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              // Get data from EditText fields
              String firstName = firstNameEditText.getText().toString();
              String middleName = middleNameEditText.getText().toString();
```

```
            String lastName = lastNameEditText.getText().toString();
            String dob = dobEditText.getText().toString();
            String address = addressEditText.getText().toString();
            String email = emailEditText.getText().toString();

            // Create an Intent to pass the data to the second activity
            Intent intent = new Intent(MainActivity.this, SecondActivity.class);
               intent.putExtra("FIRST_NAME", firstName);
               intent.putExtra("MIDDLE_NAME", middleName);
               intent.putExtra("LAST_NAME", lastName);
               intent.putExtra("DOB", dob);
            intent.putExtra("ADDRESS", address);
               intent.putExtra("EMAIL", email);

            // Start the second activity
            startActivity(intent);
        }
    });
  }
 }
SecondActivity.xml
<?xml version="1.0" encoding="utf-8"?>
 <LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
  android:padding="20dp"
    android:gravity="center">

  <!-- First Name -->
  <TextView
        android:id="@+id/firstNameDisplay"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="First Name: "
     android:textSize="18sp"
        android:layout_marginBottom="10dp"/>

  <!-- Middle Name -->
  <TextView
        android:id="@+id/middleNameDisplay"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="Middle Name: "
     android:textSize="18sp"
        android:layout_marginBottom="10dp"/>

  <!-- Last Name -->
  <TextView
        android:id="@+id/lastNameDisplay"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="Last Name: "
     android:textSize="18sp"
        android:layout_marginBottom="10dp"/>

  <!-- Date of Birth -->
  <TextView
        android:id="@+id/dobDisplay"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="Date of Birth: "
     android:textSize="18sp"
        android:layout_marginBottom="10dp"/>

  <!-- Address -->
  <TextView
        android:id="@+id/addressDisplay"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="Address: "
     android:textSize="18sp"
        android:layout_marginBottom="10dp"/>

  <!-- Email -->
  <TextView
        android:id="@+id/emailDisplay"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
     android:text="Email: "
     android:textSize="18sp"
        android:layout_marginBottom="10dp"/>

 </LinearLayout>
*****************************************8
SecondActivity.java
package com.example.s8q1;

 import android.os.Bundle;
 import android.widget.TextView;

 import androidx.appcompat.app.AppCompatActivity;

 public class SecondActivity extends AppCompatActivity {

  private TextView firstNameDisplay, middleNameDisplay, lastNameDisplay, dobDisplay, addressDisplay, emailDisplay;

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

     // Initialize the TextViews
     firstNameDisplay = findViewById(R.id.firstNameDisplay);
     middleNameDisplay = findViewById(R.id.middleNameDisplay);
     lastNameDisplay = findViewById(R.id.lastNameDisplay);
```

```
      dobDisplay = findViewById(R.id.dobDisplay);
      addressDisplay = findViewById(R.id.addressDisplay);
      emailDisplay = findViewById(R.id.emailDisplay);

      // Get the data passed from the FirstActivity
      String firstName = getIntent().getStringExtra("FIRST_NAME");
      String middleName = getIntent().getStringExtra("MIDDLE_NAME");
      String lastName = getIntent().getStringExtra("LAST_NAME");
      String dob = getIntent().getStringExtra("DOB");
      String address = getIntent().getStringExtra("ADDRESS");
      String email = getIntent().getStringExtra("EMAIL");

      // Display the data in TextViews
         firstNameDisplay.setText("First Name: " + firstName);
         middleNameDisplay.setText("Middle Name: " + middleName);
         lastNameDisplay.setText("Last Name: " + lastName);
      dobDisplay.setText("Date of Birth: " + dob);
         addressDisplay.setText("Address: " + address);
      emailDisplay.setText("Email: " + email);
  }
 }



**************************************************
###### Don't forget to declare both activities in your AndroidManifest.xml:

<activity
     android:name=".SecondActivity"
   android:exported="false" />
 <activity
     android:name=".MainActivity"
  android:exported="true">
Slip 16 Q2B
 Create a Simple calculator.
activity_main.xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/num1EditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter first number"
        android:inputType="numberDecimal" />

    <EditText
        android:id="@+id/num2EditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter second number"
        android:inputType="numberDecimal" />

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

        <Button
            android:id="@+id/addButton"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Add" />

        <Button
            android:id="@+id/subtractButton"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Subtract" />

        <Button
            android:id="@+id/multiplyButton"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Multiply" />

        <Button
            android:id="@+id/divideButton"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="Divide" />
    </LinearLayout>

    <TextView
        android:id="@+id/resultTextView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Result: "
        android:textSize="18sp"
        android:layout_marginTop="16dp" />

</LinearLayout>
MainActivity.java
package com.example.simplecalculator;

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 num1EditText;
    private EditText num2EditText;
    private TextView resultTextView;

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

        num1EditText = findViewById(R.id.num1EditText);
        num2EditText = findViewById(R.id.num2EditText);
        resultTextView = findViewById(R.id.resultTextView);

        Button addButton = findViewById(R.id.addButton);
        Button subtractButton = findViewById(R.id.subtractButton);
        Button multiplyButton = findViewById(R.id.multiplyButton);
        Button divideButton = findViewById(R.id.divideButton);

        addButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                performOperation("+");
            }
        });

        subtractButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                performOperation("-");
            }
        });

        multiplyButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                performOperation("*");
            }
        });

        divideButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                performOperation("/");
            }
        });
    }

    private void performOperation(String operator) {
        try {
            double num1 = Double.parseDouble(num1EditText.getText().toString());
            double num2 = Double.parseDouble(num2EditText.getText().toString());
            double result = 0;

            switch (operator) {
                case "+":
                    result = num1 + num2;
                    break;
                case "-":
                    result = num1 - num2;
                    break;
                case "*":
                    result = num1 * num2;
                    break;
                case "/":
                    if (num2 != 0) {
                        result = num1 / num2;
                    } else {
                        resultTextView.setText("Error: Division by zero");
                        return;
                    }
                    break;
            }
            resultTextView.setText(String.format("Result: %.2f", result));
        } catch (NumberFormatException e) {
            resultTextView.setText("Please enter valid numbers");
        }
    }
}
```

Slip 17 Q1

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

AndroidManifest.xml

```
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.phonecallapp">

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

    <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/Theme.PhoneCallApp">
        <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>
```

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    android:padding="16dp"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/phoneEditText"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter phone number"
        android:inputType="phone" />

    <Button
        android:id="@+id/callButton"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Make Call" />

</LinearLayout>
```

MainActivity.java

```
package com.example.phonecallapp;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
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 {

    private EditText phoneEditText;
    private Button callButton;

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

        phoneEditText = findViewById(R.id.phoneEditText);
        callButton = findViewById(R.id.callButton);

        callButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                makePhoneCall();
            }
        });
    }

    private void makePhoneCall() {
        String phoneNumber = phoneEditText.getText().toString().trim();

        if (phoneNumber.isEmpty()) {
            Toast.makeText(this, "Please enter a phone number", Toast.LENGTH_SHORT).show();
            return;
        }

        Intent intent = new Intent(Intent.ACTION_CALL);
        intent.setData(Uri.parse("tel:" + phoneNumber));

        if (intent.resolveActivity(getPackageManager()) != null) {
            startActivity(intent);
        } else {
            Toast.makeText(this, "No application can handle making phone calls.", Toast.LENGTH_SHORT).show();
        }
    }
}
```

Slip 17 Q2B

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

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    android:padding="16dp"
    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" />

    <TextView
        android:id="@+id/resultTextView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Result will be shown here"
        android:textSize="18sp"
        android:layout_marginTop="16dp" />
```

```
</LinearLayout>
```
MainActivity.java
```
package com.example.numbercalculatorapp;

import android.os.Bundle;
import android.view.ContextMenu;
import android.view.MenuInflater;
import android.view.MenuItem;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    private EditText numberEditText;
    private TextView resultTextView;

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

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

        // Register the context menu for the EditText
        registerForContextMenu(numberEditText);
    }

    @Override
    public void onCreateContextMenu(ContextMenu menu, View v, ContextMenu.ContextMenuInfo menuInfo) {
        super.onCreateContextMenu(menu, v, menuInfo);
        MenuInflater inflater = getMenuInflater();
        inflater.inflate(R.menu.context_menu, menu);
    }

    @Override
    public boolean onContextItemSelected(MenuItem item) {
        switch (item.getItemId()) {
            case R.id.factorial:
                calculateFactorial();
                return true;
            case R.id.sum_of_digits:
                calculateSumOfDigits();
                return true;
            default:
                return super.onContextItemSelected(item);
        }
    }

    private void calculateFactorial() {
        try {
            int number = Integer.parseInt(numberEditText.getText().toString());
            long factorial = 1;
            for (int i = 1; i <= number; i++) {
                factorial *= i;
            }
            resultTextView.setText("Factorial: " + factorial);
        } catch (NumberFormatException e) {
            Toast.makeText(this, "Please enter a valid number", Toast.LENGTH_SHORT).show();
        }
    }

    private void calculateSumOfDigits() {
        try {
            int number = Integer.parseInt(numberEditText.getText().toString());
            int sum = 0;
            while (number > 0) {
                sum += number % 10;
                number /= 10;
            }
            resultTextView.setText("Sum of Digits: " + sum);
        } catch (NumberFormatException e) {
            Toast.makeText(this, "Please enter a valid number", Toast.LENGTH_SHORT).show();
        }
    }
}
```
context_menu.xml
```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
    <item
        android:id="@+id/factorial"
        android:title="Calculate Factorial" />
    <item
        android:id="@+id/sum_of_digits"
        android:title="Calculate Sum of Digits" />
</menu>
```

Slip 18 Q1

Q1. Create an Android Application that Demonstrate Alert Dialog Box.

Activity_main.xml
```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity">
```

```
    <Button
        android:id="@+id/btnShowDialog"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Show Alert Dialog" />

</LinearLayout>
```

MainActivity.java

```
package com.example.alertdialogdemo;

import android.app.AlertDialog;
import android.content.DialogInterface;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
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 showDialogButton = findViewById(R.id.btnShowDialog);
        showDialogButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                // Create AlertDialog
                AlertDialog.Builder builder = new AlertDialog.Builder(MainActivity.this);

                // Set dialog properties
                builder.setTitle("Important Message")
                        .setMessage("Do you want to continue?")
                        .setPositiveButton("Yes", new DialogInterface.OnClickListener() {
                            @Override
                            public void onClick(DialogInterface dialog, int which) {
                                Toast.makeText(MainActivity.this, "You clicked Yes", Toast.LENGTH_SHORT).show();
                            }
                        })
                        .setNegativeButton("No", new DialogInterface.OnClickListener() {
                            @Override
                            public void onClick(DialogInterface dialog, int which) {
                                Toast.makeText(MainActivity.this, "You clicked No", Toast.LENGTH_SHORT).show();
                            }
                        })
                        .setNeutralButton("Cancel", new DialogInterface.OnClickListener() {
                            @Override
                            public void onClick(DialogInterface dialog, int which) {
                                Toast.makeText(MainActivity.this, "You clicked Cancel", Toast.LENGTH_SHORT).show();
                            }
                        });

                // Create and show the dialog
                AlertDialog alertDialog = builder.create();
                alertDialog.show();
            }
        });
    }
}
```

Slip 18 Q2B

Q2Create an Android Application to accept two numbers and find power and Average. Display the result on the next activity using Context Menu.

Main.xml

```
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
     android:layout_height="match_parent"
  android:padding="16dp">

  <EditText
      android:id="@+id/num1"
         android:layout_width="match_parent"
         android:layout_height="48dp"
      android:hint="Enter first number"
         android:inputType="numberDecimal"/>

  <EditText
      android:id="@+id/num2"
         android:layout_width="match_parent"
         android:layout_height="48dp"
         android:layout_below="@id/num1"
      android:hint="Enter second number"
         android:inputType="numberDecimal"
         android:layout_marginTop="10dp"/>

  <Button
         android:id="@+id/menuButton"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:layout_below="@id/num2"
         android:layout_marginTop="20dp"
      android:text="Open Menu"/>

  <TextView
         android:id="@+id/result"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
      android:layout_below="@id/menuButton"
         android:layout_marginTop="20dp"
      android:text="Result will appear here"
      android:textSize="18sp"
         android:textStyle="bold"/>

 </RelativeLayout>
```

Main.java

```
package com.example.power_average;

 import android.support.v7.app.AppCompatActivity;
 import android.os.Bundle;
 import android.view.ContextMenu;
 import android.view.Menu;
 import android.view.MenuItem;
 import android.view.View;
 import android.widget.Button;
 import android.widget.EditText;
 import android.widget.TextView;
 public class MainActivity extends AppCompatActivity {
  EditText num1, num2;
  TextView result;
  Button menuButton;
  private static final int MENU_POWER = 1;
  private static final int MENU_AVERAGE = 2;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      num1 = findViewById(R.id.num1);
      num2 = findViewById(R.id.num2);
      result = findViewById(R.id.result);
      menuButton = findViewById(R.id.menuButton);

      // Register button for context menu
      registerForContextMenu(menuButton);
  }

  @Override
  public void onCreateContextMenu(ContextMenu menu, View v, ContextMenu.ContextMenuInfo menuInfo) {
      super.onCreateContextMenu(menu, v, menuInfo);
      menu.setHeaderTitle("Select Operation");
      menu.add(Menu.NONE, MENU_POWER, Menu.NONE, "Find Power");
      menu.add(Menu.NONE, MENU_AVERAGE, Menu.NONE, "Find Average");
  }

  @Override
  public boolean onContextItemSelected(MenuItem item) {
      double number1, number2;

      try {
          number1 = Double.parseDouble(num1.getText().toString());
          number2 = Double.parseDouble(num2.getText().toString());
      } catch (NumberFormatException e) {
          result.setText("Please enter valid numbers.");
          return false;
      }

      switch (item.getItemId()) {
          case MENU_POWER:
              double power = Math.pow(number1, number2);
              result.setText("Power: " + power);
              return true;
          case MENU_AVERAGE:
              double average = (number1 + number2) / 2;
              result.setText("Average: " + average);
              return true;
          default:
              return super.onContextItemSelected(item);
      }
  }
 }
```

Slip 19Q1

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

Add Images to Drawable Folder

bulb_on.png

bulb_off.png

activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity">


    <ToggleButton
        android:id="@+id/toggleButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textOff="Off"
        android:textOn="On" />


    <ImageView
        android:id="@+id/bulbImageView"
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:src="@drawable/bulb_off" />


    <TextView
        android:id="@+id/stateTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Bulb is Off"
        android:textSize="18sp" />
</LinearLayout>
```

MainActivity.java

```
package com.example.bulbcontrol;


import android.os.Bundle;
import android.widget.CompoundButton;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.ToggleButton;
import androidx.appcompat.app.AppCompatActivity;


public class MainActivity extends AppCompatActivity {


    private ToggleButton toggleButton;
    private ImageView bulbImageView;
    private TextView stateTextView;


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


        toggleButton = findViewById(R.id.toggleButton);
        bulbImageView = findViewById(R.id.bulbImageView);
        stateTextView = findViewById(R.id.stateTextView);


        // Set initial state
        bulbImageView.setImageResource(R.drawable.bulb_off);
        stateTextView.setText("Bulb is Off");


        // Set Toggle Button listener
        toggleButton.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {
            @Override
            public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
                if (isChecked) {
                    // Bulb is On
                    bulbImageView.setImageResource(R.drawable.bulb_on);
                    stateTextView.setText("Bulb is On");
                } else {
                    // Bulb is Off
                    bulbImageView.setImageResource(R.drawable.bulb_off);
                    stateTextView.setText("Bulb is Off");}}});}}
```

Slip 19 Q2B

Q2.Design Following Screens using Table Layout. Display the entered text on next

.

Main.xml

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp">

  <TextView
      android:text="Membership Form"
      android:textSize="20sp"
         android:textColor="#A020F0"
         android:gravity="center"
         android:layout_width="match_parent"
         android:layout_height="wrap_content" />

  <TableLayout
      android:layout_width="match_parent"
         android:layout_height="wrap_content"
         android:stretchColumns="1">

      <TableRow>
          <TextView android:text="Full Name" />
          <EditText
                 android:id="@+id/etName"
              android:hint="Enter Name"
                 android:layout_width="match_parent"
                 android:layout_height="wrap_content"/>
      </TableRow>

      <TableRow>
          <TextView android:text="Gender" />
          <RadioGroup
              android:id="@+id/rgGender"
                 android:orientation="horizontal"
                 android:layout_width="wrap_content"
                 android:layout_height="wrap_content">
              <RadioButton
                     android:id="@+id/rbMale"
                     android:text="M"
                     android:layout_width="wrap_content"
                     android:layout_height="wrap_content" />
              <RadioButton
                     android:id="@+id/rbFemale"
                  android:text="F"
                     android:layout_width="wrap_content"
                     android:layout_height="wrap_content" />
              <RadioButton
                     android:id="@+id/rbOther"
                     android:text="Other"
```

```
                    android:layout_width="wrap_content"
                    android:layout_height="wrap_content" />
        </RadioGroup>
    </TableRow>

    <TableRow>
        <TextView android:text="Current Weight" />
        <EditText
            android:id="@+id/etWeight"
               android:hint="kg"
               android:layout_width="match_parent"
               android:layout_height="wrap_content"/>
    </TableRow>

    <TableRow>
        <TextView android:text="Height" />
        <EditText
               android:id="@+id/etHeight"
               android:hint="cm"
               android:layout_width="match_parent"
               android:layout_height="wrap_content"/>
    </TableRow>

    <TableRow>
        <TextView android:text="Goal Weight" />
        <EditText
               android:id="@+id/etGoalWeight"
               android:hint="kg"
               android:layout_width="match_parent"
               android:layout_height="wrap_content"/>
    </TableRow>

    <TableRow>
        <TextView android:text="Age" />
        <EditText
               android:id="@+id/etAge"
               android:hint="years"
               android:layout_width="match_parent"
               android:layout_height="wrap_content"/>
    </TableRow>

    <TableRow>
        <TextView android:text="Phone" />
        <EditText
               android:id="@+id/etPhone"
            android:hint="Enter phone"
               android:layout_width="match_parent"
            android:layout_height="wrap_content"/>
    </TableRow>

    <TableRow>
        <TextView android:text="Address" />
        <EditText
               android:id="@+id/etAddress"
            android:hint="Enter address"
               android:layout_width="match_parent"
               android:layout_height="wrap_content"/>
    </TableRow>
  </TableLayout>

  <CheckBox
        android:id="@+id/cbTerms"
      android:text="I have read, understood, and accepted membership rules"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content" />

  <Button
        android:id="@+id/btnSubmit"
      android:text="SUBMIT"
         android:backgroundTint="#A020F0"
         android:textColor="#FFFFFF"
         android:layout_width="wrap_content"
         android:layout_height="wrap_content"
         android:layout_gravity="center" />

 </LinearLayout>
```

Main.java

```
import android.support.v7.app.AppCompatActivity;
 import android.os.Bundle;
 import android.content.Intent;
 import android.view.View;
 import android.widget.Button;
 import android.widget.CheckBox;
 import android.widget.EditText;
 import android.widget.RadioButton;
 import android.widget.RadioGroup;
 import android.widget.Toast;
 public class MainActivity extends AppCompatActivity {
  private EditText etName, etWeight, etHeight, etGoalWeight, etAge, etPhone, etAddress;
  private RadioGroup rgGender;
  private CheckBox cbTerms;
  private Button btnSubmit;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
      super.onCreate(savedInstanceState);
      setContentView(R.layout.activity_main);
      // Initialize UI elements
      etName = findViewById(R.id.etName);
      rgGender = findViewById(R.id.rgGender);
      etWeight = findViewById(R.id.etWeight);
      etHeight = findViewById(R.id.etHeight);
      etGoalWeight = findViewById(R.id.etGoalWeight);
      etAge = findViewById(R.id.etAge);
      etPhone = findViewById(R.id.etPhone);
      etAddress = findViewById(R.id.etAddress);
      cbTerms = findViewById(R.id.cbTerms);
```

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

      // Set button click listener
      btnSubmit.setOnClickListener(new View.OnClickListener() {
          @Override
          public void onClick(View v) {
              submitForm();
          }
      });
  }

  private void submitForm() {
      String name = etName.getText().toString().trim();
      String weight = etWeight.getText().toString().trim();
      String height = etHeight.getText().toString().trim();
      String goalWeight = etGoalWeight.getText().toString().trim();
      String age = etAge.getText().toString().trim();
      String phone = etPhone.getText().toString().trim();
      String address = etAddress.getText().toString().trim();

      // Get selected gender
      int selectedGenderId = rgGender.getCheckedRadioButtonId();
      String gender = "";
      if (selectedGenderId != -1) {
          RadioButton selectedGender = findViewById(selectedGenderId);
          gender = selectedGender.getText().toString();
      }

      // Check if terms are accepted
      if (!cbTerms.isChecked()) {
          Toast.makeText(this, "You must accept the terms!", Toast.LENGTH_SHORT).show();
          return;
      }

      // Pass data to SecondActivity
      Intent intent = new Intent(MainActivity.this, SecondActivity.class);
      intent.putExtra("name", name);
      intent.putExtra("gender", gender);
      intent.putExtra("weight", weight);
      intent.putExtra("height", height);
      intent.putExtra("goalWeight", goalWeight);
      intent.putExtra("age", age);
      intent.putExtra("phone", phone);
      intent.putExtra("address", address);
         startActivity(intent);
  }
 }
second Activity.xml
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
     android:layout_width="match_parent"
     android:layout_height="match_parent"
     android:orientation="vertical"
  android:padding="16dp">

  <TextView
      android:text="Entered Details"
      android:textSize="20sp"
         android:textColor="#A020F0"
         android:gravity="center"
         android:layout_width="match_parent"
         android:layout_height="wrap_content" />

  <TextView android:id="@+id/tvName"
      android:textSize="16sp"
         android:layout_width="match_parent"
         android:layout_height="wrap_content" />

  <TextView android:id="@+id/tvGender"
      android:textSize="16sp"
         android:layout_width="match_parent"
         android:layout_height="wrap_content" />

  <TextView android:id="@+id/tvWeight"
      android:textSize="16sp"
         android:layout_width="match_parent"
         android:layout_height="wrap_content" />

  <TextView android:id="@+id/tvHeight"
      android:textSize="16sp"
         android:layout_width="match_parent"
         android:layout_height="wrap_content" />

  <TextView android:id="@+id/tvGoalWeight"
      android:textSize="16sp"
         android:layout_width="match_parent"
         android:layout_height="wrap_content" />

  <TextView android:id="@+id/tvAge"
      android:textSize="16sp"
         android:layout_width="match_parent"
         android:layout_height="wrap_content" />

  <TextView android:id="@+id/tvPhone"
      android:textSize="16sp"
      android:layout_width="match_parent"
         android:layout_height="wrap_content" />

  <TextView android:id="@+id/tvAddress"
      android:textSize="16sp"
         android:layout_width="match_parent"
         android:layout_height="wrap_content" />

 </LinearLayout>
Second Activity.java
import android.support.v7.app.AppCompatActivity;
 import android.os.Bundle;
```

```
import android.widget.TextView;
import android.content.Intent;
public class SecondActivity extends AppCompatActivity {
 private TextView tvName, tvGender, tvWeight, tvHeight, tvGoalWeight, tvAge, tvPhone, tvAddress;

 @Override
 protected void onCreate(Bundle savedInstanceState) {
     super.onCreate(savedInstanceState);
     setContentView(R.layout.activity_second);
     // Initialize UI components
     tvName = findViewById(R.id.tvName);
     tvGender = findViewById(R.id.tvGender);
     tvWeight = findViewById(R.id.tvWeight);
     tvHeight = findViewById(R.id.tvHeight);
     tvGoalWeight = findViewById(R.id.tvGoalWeight);
     tvAge = findViewById(R.id.tvAge);
     tvPhone = findViewById(R.id.tvPhone);
     tvAddress = findViewById(R.id.tvAddress);

     // Get data from Intent
     Intent intent = getIntent();
     String name = intent.getStringExtra("name");
     String gender = intent.getStringExtra("gender");
     String weight = intent.getStringExtra("weight");
     String height = intent.getStringExtra("height");
     String goalWeight = intent.getStringExtra("goalWeight");
     String age = intent.getStringExtra("age");
     String phone = intent.getStringExtra("phone");
     String address = intent.getStringExtra("address");

     // Set values to TextViews
     tvName.setText("Full Name: " + name);
     tvGender.setText("Gender: " + gender);
     tvWeight.setText("Current Weight: " + weight + " kg");
     tvHeight.setText("Height: " + height + " cm");
     tvGoalWeight.setText("Goal Weight: " + goalWeight + " kg");
     tvAge.setText("Age: " + age + " years");
     tvPhone.setText("Phone: " + phone);
     tvAddress.setText("Address: " + address);

 }
}
```

Slip 20 Q1

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

Add Images to the Drawable Folder

image1.png

image2.png

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:gravity="center"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="200dp"
        android:layout_height="200dp"
        android:src="@drawable/image1" />

    <Button
        android:id="@+id/changeImageButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Change Image" />

</LinearLayout>
```

MainActivity.java

```
package com.example.imagechanger;

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 Button changeImageButton;
    private int currentImageIndex = 0;

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

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

        // Set initial image
        imageView.setImageResource(R.drawable.image1);

        // Set button click listener
        changeImageButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                changeImage();
            }
        });
    }

    private void changeImage() {
```

```
        // Toggle between two images
        if (currentImageIndex == 0) {
            imageView.setImageResource(R.drawable.image2);
            currentImageIndex = 1;
        } else {
            imageView.setImageResource(R.drawable.image1);
            currentImageIndex = 0;
        }
    }
}
```

Slip 20 Q2B

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

Activity_main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout 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"
    android:orientation="vertical"
    tools:context=".MainActivity">

    <ListView
        android:id="@+id/listView"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />

</LinearLayout>
```

MainActivity.java

```
package com.example.countrylistapp;

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", "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", "Holy See", "Honduras", "Hungary", "Iceland",
        "India", "Indonesia", "Iran", "Iraq", "Ireland",
        "Israel", "Italy", "Jamaica", "Japan", "Jordan",
        "Kazakhstan", "Kenya", "Kiribati", "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 Korea", "North Macedonia", "Norway", "Oman", "Pakistan",
        "Palau", "Palestine", "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 Korea", "South Sudan", "Spain", "Sri Lanka", "Sudan",
        "Suriname", "Sweden", "Switzerland", "Syria", "Taiwan",
        "Tajikistan", "Tanzania", "Thailand", "Timor-Leste", "Togo",
        "Tonga", "Trinidad and Tobago", "Tunisia", "Turkey", "Turkmenistan",
        "Tuvalu", "Uganda", "Ukraine", "United Arab Emirates", "United Kingdom",
        "United States", "Uruguay", "Uzbekistan", "Vanuatu", "Venezuela",
        "Vietnam", "Yemen", "Zambia", "Zimbabwe"
    };

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

        listView = findViewById(R.id.listView);

        // Create an ArrayAdapter
        ArrayAdapter<String> adapter = new ArrayAdapter<>(
            this,
            android.R.layout.simple_list_item_1,
            countries
        );

        // Set the adapter on the ListView
        listView.setAdapter(adapter);
    }
}
```