

S.No	Practical List	Faculty Signature
1	Create "hello world" application to display "hello world" in the middle of the screen in the emulator as well as android phone.	
2	Create an android app to display various android lifecycle phases.	
3	Create a calculator app that performs addition, subtraction, division and multiplication operation on numbers	
4	Write an Android application to convert into different currencies for example, Rupees to dollar.	
5	Write an application to mark the daily route of travel in map.	
6	Create a spinner application with strings taken from resource directory res/values/strings.xml and on changing the spinner value, image will change. Image is saved in the drawable directory.	
7	Create an app that uses radio button group which calculates discount on shopping bill amount. Use edittext to enter bill amount and select one of three radio buttons to determine a discount for 10, 15, or 20 percent.the discount is calculated upon selection of one of the buttons and displayed in a textview control.	
8	Create a login application to verify username and password. On successful login, redirect to another activity that has a textview to display "welcome user" with logout button. On click of logout button, a dialog should appear with ok and cancel buttons. On click of oK button, go back to the login activity and on click of cancel button, stay on the same activity.	
9	Create an application to perform the operations of create, insert, delete, view and update, using sqlite database.	
10	Create an application to pick up any image from the native application gallery and display it on the screen.	
11	Create an application to take picture using native application.	



**Program 1: Create "hello world" application to display "hello world" in the middle of the screen in the emulator as well as android phone.**

**CODE:**

**activity\_main.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">

    <TextView
        android:id="@+id/helloText"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World"
        android:textSize="24sp"
        android:textStyle="bold"/>
</RelativeLayout>
```

**MainActivity.java:**

```
package com.example.helloworld;

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

    }

}
```



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OUTPUT:

Hello World



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## Program 2: Create an android app to display various android lifecycle phases.

### CODE:

#### MainActivity.java:

```
package com.example.lifecycleapp;

import android.os.Bundle;
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);
        Toast.makeText(this, "onCreate Called",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onStart() {
        super.onStart();
        Toast.makeText(this, "onStart Called",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onResume() {
        super.onResume();
        Toast.makeText(this, "onResume Called",
Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onPause() {
        super.onPause();
        Toast.makeText(this, "onPause Called",
Toast.LENGTH_SHORT).show();
    }

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



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



**Program 3:** Create a calculator app that performs addition, subtraction, division and multiplication operation on numbers

**CODE:**

**activity\_main.xml:**

```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" 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="wrap_content"
        android:hint="Enter number 1"
        android:inputType="numberDecimal"/>

    <EditText android:id="@+id/num2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter number 2"
        android:inputType="numberDecimal"/>

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

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

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

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

    <TextView android:id="@+id/result"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Result will appear here"
        android:textSize="20sp">
```



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```
        android:paddingTop="20dp"/>
</LinearLayout>
```

### **MainActivity.java:**

```
package com.example.calculatorapp;

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

public class MainActivity extends AppCompatActivity {

    EditText num1, num2;

    TextView result;

    @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);

        findViewById(R.id.addBtn).setOnClickListener(v -> calculate('+'));
```



```
        findViewById(R.id.subBtn).setOnClickListener(v -> calculate('-'));
        findViewById(R.id.mulBtn).setOnClickListener(v -> calculate('*'));
        findViewById(R.id.divBtn).setOnClickListener(v -> calculate('/'));
    }

    void calculate(char operator) {
        double a = Double.parseDouble(num1.getText().toString());
        double b = Double.parseDouble(num2.getText().toString());
        double res = 0;

        switch (operator) {
            case '+': res = a + b; break;
            case '-': res = a - b; break;
            case '*': res = a * b; break;
            case '/': res = a / b; break;
        }

        result.setText("Result: " + res);
    }
}
```





**Program 4:** Write an Android application to convert into different currencies for example, Rupees to dollar.

**CODE:**

**activity\_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">

    <EditText
        android:id="@+id/rupees"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter amount in INR"
        android:inputType="numberDecimal" />

    <Button
        android:id="@+id/convert"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Convert to USD" />

    <TextView
        android:id="@+id/result"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Converted amount will appear here"
        android:textSize="20sp"
        android:paddingTop="20dp"/>
</LinearLayout>
```

**MainActivity.java:**

```
package com.example.currencyconverter;
```

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

```
import android.widget.*;
```



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```

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    EditText rupees;

    TextView result;

    final double USD_RATE = 0.012; // 1 INR = 0.012 USD approx.

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        rupees = findViewById(R.id.rupees);

        result = findViewById(R.id.result);

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

        convert.setOnClickListener(v -> {

            double amount =
Double.parseDouble(rupees.getText().toString());

            double usd = amount * USD_RATE;

            result.setText("USD: $" + usd);

        });

    }

}

```



**Program 5:** Write an application to mark the daily route of travel in map.

**CODE:**

**activity\_main.xml:**

```
<fragment xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/map"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:name="com.google.android.gms.maps.SupportMapFragment"/>
```

**MainActivity.java:**

```
package com.example.travelmap;
```

```
import androidx.fragment.app.FragmentActivity;
```

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

```
import com.google.android.gms.maps.*;
```

```
import com.google.android.gms.maps.model.*;
```

```
public class MapsActivity extends FragmentActivity implements
OnMapReadyCallback {
```

```
    private GoogleMap mMap;
```

```
    @Override
```

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

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

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

```
        SupportMapFragment mapFragment = (SupportMapFragment)
getSupportFragmentManager()
```



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```

        .findFragmentById(R.id.map);

        assert mapFragment != null;

        mapFragment.getMapAsync(this);
    }

    @Override

    public void onMapReady(GoogleMap googleMap) {

        mMap = googleMap;

        LatLng home = new LatLng(28.6139, 77.2090); // example: Delhi

        LatLng college = new LatLng(28.6270, 77.3649); // example

        mMap.addMarker(new
MarkerOptions().position(home).title("Home"));

        mMap.addMarker(new
MarkerOptions().position(college).title("College"));

        mMap.moveCamera(CameraUpdateFactory.newLatLngZoom(home,
10));

        mMap.addPolyline(new PolylineOptions().add(home,
college).width(5).color(0xFFFF0000));

    }
}

```



**Program 6:** Create a spinner application with strings taken from resource directory res/values/strings.xml and on changing the spinner value, image will change. Image is saved in the drawable directory.

**CODE:**

**activity\_main.xml:**

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

    <Spinner
        android:id="@+id/imageSpinner"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="match_parent"
        android:layout_height="300dp"
        android:scaleType="fitCenter"/>
</LinearLayout>
```

**Strings.xml:**

```
<resources>

    <string name="app_name">SpinnerImageApp</string>

    <string-array name="image_names">

        <item>Image 1</item>

        <item>Image 2</item>

        <item>Image 3</item>

    </string-array>

</resources>
```



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### MainActivity.java:

```
package com.example.spinnerimage;

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

public class MainActivity extends AppCompatActivity {

    Spinner spinner;

    ImageView imageView;

    int[] images = {R.drawable.img1, R.drawable.img2, R.drawable.img3};

    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        spinner = findViewById(R.id.imageSpinner);

        imageView = findViewById(R.id.imageView);

        ArrayAdapter<CharSequence> adapter =
        ArrayAdapter.createFromResource(this,

            R.array.image_names, android.R.layout.simple_spinner_item);

        adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdo
wn_item);
```



```
spinner.setAdapter(adapter);

spinner.setOnItemSelectedListener(new
AdapterView.OnItemSelectedListener() {

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

        imageView.setImageResource(images[position]);

    }

    public void onNothingSelected(AdapterView<?> parent) {}

});
}
}
```



**Program 7:** Create an app that uses radio button group which calculates discount on shopping bill amount. Use editText to enter bill amount and select one of three radio buttons to determine a discount for 10, 15, or 20 percent. the discount is calculated upon selection of one of the buttons and displayed in a textview control.

**CODE:**

**activity\_main.xml:**

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

    <EditText
        android:id="@+id/urlInput"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Enter URL (e.g., google.com)" />

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

    <WebView
        android:id="@+id/webView"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
</LinearLayout>
```

**MainActivity.java:**

```
package com.example.webbrowser;
```

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

```
import android.webkit.WebSettings;
```

```
import android.webkit.WebView;
```



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```
import android.webkit.WebViewClient;

import android.widget.*;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    WebView webView;

    EditText urlInput;

    Button loadBtn;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        webView = findViewById(R.id.webView);

        urlInput = findViewById(R.id.urlInput);

        loadBtn = findViewById(R.id.loadBtn);

        WebSettings webSettings = webView.getSettings();

        webSettings.setJavaScriptEnabled(true);

        webView.setWebViewClient(new WebViewClient());

        loadBtn.setOnClickListener(v -> {

            String url = urlInput.getText().toString();

            if (!url.startsWith("http")) url = "http://" + url;
```



```
        webView.loadUrl(url);  
    });  
}  
}
```

**Permissions (Add in AndroidManifest.xml):**

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



**Program 8:** Create a login application to verify username and password. On successful login, redirect to another activity that has a textview to display "welcome user" with logout button. On click of logout button, a dialog should appear with ok and cancel buttons. On click of oK button, go back to the login activity and on click of cancel button, stay on the same activity.

**CODE:**

**activity\_main.xml:**

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

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

    <EditText
        android:id="@+id/password"
        android:hint="Password"
        android:inputType="textPassword"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />

    <Button
        android:id="@+id/loginBtn"
        android:text="Login"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />
</LinearLayout>
```

**MainActivity.java:**

```
package com.example.loginapp;
```

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

```
import android.widget.*;
```



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```

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

    EditText username, password;

    Button loginBtn;

    DBHelper db;

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);

        db = new DBHelper(this);

        username = findViewById(R.id.username);

        password = findViewById(R.id.password);

        loginBtn = findViewById(R.id.loginBtn);

        loginBtn.setOnClickListener(v -> {

            String user = username.getText().toString();

            String pass = password.getText().toString();

            if (db.checkUser(user, pass)) {

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

            } else {

                Toast.makeText(this, "Invalid Credentials",
Toast.LENGTH_SHORT).show();

```



```

        }

    });

}

}

```

### DBHelper.java:

```
package com.example.loginapp;
```

```
import android.content.Context;
```

```
import android.database.sqlite.*;
```

```
import android.database.*;
```

```
public class DBHelper extends SQLiteOpenHelper {
```

```
    public DBHelper(Context context) {
```

```
        super(context, "LoginDB", null, 1);
```

```
    }
```

```
    @Override
```

```
    public void onCreate(SQLiteDatabase db) {
```

```
        db.execSQL("CREATE TABLE users(username TEXT, password TEXT)");
```

```
        db.execSQL("INSERT INTO users VALUES('admin', 'admin123')");
```

```
    }
```

```
    @Override
```

```
    public void onUpgrade(SQLiteDatabase db, int oldV, int newV) {
```



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```

        db.execSQL("DROP TABLE IF EXISTS users");

        onCreate(db);
    }

    public boolean checkUser(String username, String password) {

        SQLiteDatabase db = this.getReadableDatabase();

        Cursor cursor = db.rawQuery("SELECT * FROM users WHERE
username=? AND password=?",

        new String[]{username, password});

        return cursor.getCount() > 0;
    }
}

```



**Program 9:** Create an application to perform the operations of create, insert, delete, view and update, using sqlite database.

**CODE:**

**activity\_main.xml:**

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

    <Button
        android:id="@+id/startServiceBtn"
        android:text="Start Service"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>

    <Button
        android:id="@+id/stopServiceBtn"
        android:text="Stop Service"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"/>
</LinearLayout>
```

**MainActivity.java:**

```
package com.example.myservice;

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

public class MainActivity extends AppCompatActivity {

    @Override
```



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```

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_main);

    Button start = findViewById(R.id.startServiceBtn);

    Button stop = findViewById(R.id.stopServiceBtn);


    start.setOnClickListener(v -> startService(new Intent(this,
MyService.class)));

    stop.setOnClickListener(v -> stopService(new Intent(this,
MyService.class)));

}
}

```

### **MyService.java:**

```

package com.example.myservice;


import android.app.Service;
import android.content.Intent;
import android.os.IBinder;
import android.widget.Toast;


public class MyService extends Service {

    @Override

    public IBinder onBind(Intent intent) {

        return null;

    }
}

```





```

    public void onCreate() {

        Toast.makeText(this, "Service Created",
Toast.LENGTH_SHORT).show();

    }

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

        Toast.makeText(this, "Service Running",
Toast.LENGTH_SHORT).show();

        return START_STICKY;

    }

    public void onDestroy() {

        Toast.makeText(this, "Service Stopped",
Toast.LENGTH_SHORT).show();

    }
}

```

**Declare in AndroidManifest.xml:**

```
<service android:name=".MyService" />
```



**Program 10:** Create an application to pick up any image from the native application gallery and display it on the screen.

**CODE:**

**MainActivity.java:**

```
package com.example.xmlparser;
```

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

```
import android.util.Xml;
```

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

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

```
import org.xmlpull.v1.XmlPullParser;
```

```
import java.io.StringReader;
```

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

```
    String xml =  
    "<students><student><name>John</name><age>20</age></student></students>";
```

```
    TextView tv;
```

```
    @Override
```

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

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

```
        tv = new TextView(this);
```

```
        setContentView(tv);
```



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```

        parseXML();
    }

    void parseXML() {
        try {
            XmlPullParser parser = Xml.newPullParser();
            parser.setInput(new StringReader(xml));
            int eventType = parser.getEventType();
            StringBuilder sb = new StringBuilder();

            while (eventType != XmlPullParser.END_DOCUMENT) {
                if (eventType == XmlPullParser.START_TAG &&
                    parser.getName().equals("name")) {
                    sb.append("Name:");
                    sb.append(parser.nextText()).append("\n");
                } else if (eventType == XmlPullParser.START_TAG &&
                    parser.getName().equals("age")) {
                    sb.append("Age:");
                    sb.append(parser.nextText()).append("\n");
                }
                eventType = parser.next();
            }

            tv.setText(sb.toString());
        } catch (Exception e) {
            tv.setText("Error parsing XML: " + e.getMessage());
        }
    }

```



}

}



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**Program 11:** Create an application to take picture using native application.

**CODE:**

**MainActivity.java:**

```
package com.example.jsonparser;

import android.os.Bundle;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;
import org.json.JSONObject;

public class MainActivity extends AppCompatActivity {

    String json = "{\"name\":\"Alice\",\"age\":25,\"city\":\"Delhi\"}";

    TextView tv;

    @Override
    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        tv = new TextView(this);

        setContentView(tv);

        parseJSON();

    }

    void parseJSON() {

        try {
```



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```
JSONObject obj = new JSONObject(json);

String text = "Name: " + obj.getString("name") +
              "\nAge: " + obj.getInt("age") +
              "\nCity: " + obj.getString("city");

tv.setText(text);
} catch (Exception e) {
    tv.setText("Error parsing JSON");
}
}
}
```

