

## 1 RADIO BUTTON

```
<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">
```

```
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Select your favourite course : "
        android:textColor="#000"
        android:textSize="20sp"
        android:textStyle="bold" />
```

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

```
        <RadioButton
            android:id="@+id/Dosa"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="20dp"
            android:layout_marginTop="10dp"
            android:checked="true"
            android:text="Java"
            android:textColor="#154"
            android:textSize="20sp"
            android:textStyle="bold" />
```

```
        <RadioButton
            android:id="@+id/idly"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="20dp"
            android:layout_marginTop="10dp"
            android:checked="false"
            android:text="Android"
            android:textColor="#154"
            android:textSize="20sp"
            android:textStyle="bold" />
```

```
        <RadioButton
            android:id="@+id/upma"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginLeft="20dp"
            android:layout_marginTop="10dp"
            android:checked="false"
            android:text="DBMS"
            android:textColor="#154"
            android:textSize="20sp"
            android:textStyle="bold" />
```

```

<RadioButton
    android:id="@+id/palakpaneer"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="10dp"
    android:checked="false"
    android:text="OOPS"
    android:textColor="#154"
    android:textSize="20sp"
    android:textStyle="bold" />

```

```

<RadioButton
    android:id="@+id/roti"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginLeft="20dp"
    android:layout_marginTop="10dp"
    android:checked="false"
    android:text="DCN"
    android:textColor="#154"
    android:textSize="20sp"
    android:textStyle="bold" />

```

```

</RadioGroup>

```

```

<Button
    android:id="@+id/submitButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_margin="20dp"
    android:background="#0f0"
    android:padding="10dp"
    android:text="Submit"
    android:textColor="#fff"
    android:textSize="20sp"
    android:textStyle="bold" />

```

```

</LinearLayout>

```

string.xml

```

<resources>
    <string name="app_name">RadioButtonExample</string>
    <string name="hello_world">Hello world!</string>
    <string name="action_settings">Settings</string>
    <string name="Java">Dosa</string>
    <string name="Android">idly</string>
    <string name="DBMS">upma</string>
    <string name="OOPS">palakpaneer</string>
    <string name="DCN">roti</string>
</resources>

```

mainactivity.java

```

package com.example.radio_button;

```

```

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

    RadioButton Dosa, idly, upma, palakpaneer, roti;
    String selectedfood;
    Button submit;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Dosa = findViewById(R.id.Dosa);
        idly = findViewById(R.id.idly);
        upma = findViewById(R.id.upma);
        palakpaneer = findViewById(R.id.palakpaneer);
        roti = findViewById(R.id.roti);
        submit = (Button) findViewById(R.id.submitButton);

        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                if (Dosa.isChecked()) {
                    selectedfood = Dosa.getText().toString();
                } else if (idly.isChecked()) {
                    selectedfood = idly.getText().toString();
                } else if (upma.isChecked()) {
                    selectedfood = upma.getText().toString();
                } else if (palakpaneer.isChecked()) {
                    selectedfood = palakpaneer.getText().toString();
                } else if (roti.isChecked()) {
                    selectedfood = roti.getText().toString();
                }
                Toast.makeText(getApplicationContext(), selectedfood,
                    Toast.LENGTH_LONG).show(); // print the value of selected super star
            }
        });
    }
}

```

## 2 . DATE PICKER

activitymain.xml

```

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

    <DatePicker
        android:id="@+id/date"

```

```

        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:datePickerMode="calendar" />

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

</LinearLayout>

mainactivity.java
package com.example.datepicker;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {
    DatePicker date;
    Button submit;

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

        date = findViewById(R.id.date);
        submit = findViewById(R.id.submit);

        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String day = "Day = " + date.getDayOfMonth();
                String month = "Month = " + (date.getMonth() + 1);
                String year = "Year = " + date.getYear();
                Toast.makeText(getApplicationContext(),day+"\n"+month+"\n"+year,
                Toast.LENGTH_SHORT).show();
            }
        });
    }
}

```

### 3. TOGGLE BUTTON

```

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:paddingBottom="@dimen/activity_vertical_margin"
        android:paddingLeft="@dimen/activity_horizontal_margin"
        android:paddingRight="@dimen/activity_horizontal_margin"
        android:paddingTop="@dimen/activity_vertical_margin"
        tools:context=".MainActivity">

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

    <ToggleButton
        android:id="@+id/simpleToggleButton1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:checked="false"
        android:drawablePadding="20dp"
        android:drawableRight="@drawable/ic_launcher_background"
        android:textColor="#000" />

    <ToggleButton
        android:id="@+id/simpleToggleButton2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:layout_marginLeft="50dp"
        android:checked="true"
        android:drawableLeft="@drawable/ic_launcher_background"
        android:drawablePadding="20dp"
        android:textColor="#000" />
</LinearLayout>

<Button
    android:id="@+id/submitButton"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:layout_marginTop="50dp"
    android:background="#0f0"
    android:padding="10dp"
    android:text="Submit"
    android:textColor="#fff"
    android:textSize="20sp"
    android:textStyle="bold" />
</LinearLayout>
dimension.xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <dimen name="activity_vertical_margin">16dp</dimen>
    <dimen name="activity_horizontal_margin">16dp</dimen>
</resources>

activitymain.java
package com.example.myapplicationtoggle;

```

```

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

    ToggleButton simpleToggleButton1, simpleToggleButton2;
    Button submit;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        // initiate toggle button's
        simpleToggleButton1 = (ToggleButton) findViewById(R.id.simpleToggleButton1);
        simpleToggleButton2 = (ToggleButton) findViewById(R.id.simpleToggleButton2);
        submit = (Button) findViewById(R.id.submitButton);
        submit.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String status = "ToggleButton1 : " + simpleToggleButton1.getText() + "\n" +
"ToggleButton2 : " + simpleToggleButton2.getText();
                Toast.makeText(getApplicationContext(), status, Toast.LENGTH_SHORT).show(); //
display the current state of toggle button's
            }
        });
    }
}

```

#### 4. ARRAY ADAPTER

activity\_main.xml

```

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

    <ListView
        android:id="@+id/simpleListView"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:divider="#000"
        android:dividerHeight="2dp"/>

</RelativeLayout>

```

ACTIVITY\_LIST\_VIEW.XML

```

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

```

```

        android:layout_height="match_parent"
        android:orientation="vertical">

        <TextView
            android:id="@+id/textView"
            android:layout_width="fill_parent"
            android:layout_height="wrap_content"
            android:layout_gravity="center"
            android:padding="@dimen/activity_horizontal_margin"
            android:textColor="#000" />
    </LinearLayout>

```

MAIN\_ACTIVITY.JAVA

```

package com.example.myapplicationarray;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.widget.ArrayAdapter;
import android.widget.ListView;

public class MainActivity extends AppCompatActivity {
    // Array of strings...
    ListView simpleList;
    String animalList[] = {"Lion", "Tiger", "Monkey", "Elephant", "Dog", "Cat", "Camel"};
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        simpleList = (ListView) findViewById(R.id.simpleListView);

        ArrayAdapter<String> arrayAdapter = new ArrayAdapter<String>(this,
R.layout.activity_list_view, R.id.textView, animalList);
        simpleList.setAdapter(arrayAdapter);
    }
}

```

## 5. SPINNER

```

activity.xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"

```

```

app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent"
tools:context="com.example.application.spinnerexample.MainActivity"
/>

```

```

<Spinner
    android:id="@+id/spinner1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent" />

```

```

</androidx.constraintlayout.widget.ConstraintLayout>

```

```

string.xml
<resources>
    <string name="app_name">Spinner Example</string>

    <string-array name="numbers">
        <item>One</item>
        <item>Two</item>
        <item>Three</item>
        <item>Four</item>
        <item>Five</item>
    </string-array>
</resources>

```

```

mainactivity.java
package com.example.spinner;

```

```

import androidx.appcompat.app.AppCompatActivity;

```

```

import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.Spinner;
import android.widget.Toast;

```

```

public class MainActivity extends AppCompatActivity implements
    AdapterView.OnItemClickListener {

```

```

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

        Spinner spinner = findViewById(R.id.spinner1);
        ArrayAdapter<CharSequence> adapter = ArrayAdapter.createFromResource(this,
            R.array.numbers, android.R.layout.simple_spinner_item);
        adapter.setDropDownViewResource(android.R.layout.simple_spinner_dropdown_item);
        spinner.setAdapter(adapter);
        spinner.setOnItemSelectedListener(this);
    }
}

```



```

    }

    @Override
    public void onItemSelected(AdapterView<?> parent, View view, int position, long id) {
        String text = parent.getItemAtPosition(position).toString();
        Toast.makeText(parent.getContext(), text, Toast.LENGTH_SHORT).show();
    }

    @Override
    public void onNothingSelected(AdapterView<?> parent) {

    }
}

```

## 6. SQLLITE

activity\_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:padding="10dp"
    tools:context=".MainActivity">

    <TextView
        android:id="@+id/detail"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_marginTop="30dp"
        android:text="Please Enter the Details"
        android:textSize="14sp"/>

    <EditText
        android:id="@+id/name"
        android:layout_width="392dp"
        android:layout_height="36dp"
        android:layout_below="@+id/detail"
        android:hint="Name"
        android:inputType="textPersonName"
        android:textSize="14sp"/>

    <EditText
        android:id="@+id/contact"
        android:layout_width="392dp"
        android:layout_height="36dp"
        android:layout_below="@+id/name"
        android:hint="Contact"
        android:inputType="number"
        android:textSize="14sp"/>

    <EditText
        android:id="@+id/dob"

```

```

        android:layout_width="392dp"
        android:layout_height="36dp"
        android:layout_below="@+id/contact"
        android:hint="Date of Birth"
        android:inputType="number"
        android:textSize="14sp"/>

<Button
    android:id="@+id/insert"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24sp"
    android:text="Insert New Data"
    android:layout_marginTop="30sp"
    android:layout_below="@+id/dob"/>

<Button
    android:id="@+id/update"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24sp"
    android:text="Update Data"
    android:layout_below="@+id/insert"/>

<Button
    android:id="@+id/delete"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24sp"
    android:text="Delete Existing Data"
    android:layout_below="@+id/update"/>

<Button
    android:id="@+id/view"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:textSize="24sp"
    android:text="View Data"
    android:layout_below="@+id/delete"/>

</RelativeLayout>

```

MainActivity.java

```

package com.example.database;

import androidx.appcompat.app.AlertDialog;
import androidx.appcompat.app.AppCompatActivity;

import android.database.Cursor;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

```

```

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    EditText name,contact,dob;
    Button insert,update,delete,view;
    DbHelper db;

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

        name = findViewById(R.id.name);
        contact = findViewById(R.id.contact);
        dob = findViewById(R.id.dob);
        insert = findViewById(R.id.insert);
        update = findViewById(R.id.update);
        delete = findViewById(R.id.delete);
        view = findViewById(R.id.view);
        db = new DbHelper(this);

        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String nameTxt = name.getText().toString();
                String contactTxt = contact.getText().toString();
                String dobTxt = dob.getText().toString();

                Boolean insertData = db.insertUserData(nameTxt,contactTxt,dobTxt);
                if(insertData){
                    Toast.makeText(MainActivity.this, "New Data Inserted",
Toast.LENGTH_SHORT).show();
                }else{
                    Toast.makeText(MainActivity.this, "Insertion Failed",
Toast.LENGTH_SHORT).show();
                }
            }
        });

        update.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String nameTxt = name.getText().toString();
                String contactTxt = contact.getText().toString();
                String dobTxt = dob.getText().toString();

                Boolean insertData = db.insertUserData(nameTxt,contactTxt,dobTxt);
                if(insertData){
                    Toast.makeText(MainActivity.this, "New Data Inserted",
Toast.LENGTH_SHORT).show();
                }else{
                    Toast.makeText(MainActivity.this, "Insertion Failed",
Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}

```

```

update.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String nameTxt = name.getText().toString();
        String contactTxt = contact.getText().toString();
        String dobTxt = dob.getText().toString();

        Boolean updateData = db.updateUserData(nameTxt,contactTxt,dobTxt);
        if(updateData){
            Toast.makeText(MainActivity.this, "Data Updated",
Toast.LENGTH_SHORT).show();
        }else{
            Toast.makeText(MainActivity.this, "Updation Failed",
Toast.LENGTH_SHORT).show();
        }
    }
});

delete.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        String nameTxt = name.getText().toString();

        Boolean deleteData = db.deleteUserData(nameTxt);
        if(deleteData){
            Toast.makeText(MainActivity.this, "Data Deleted",
Toast.LENGTH_SHORT).show();
        }else{
            Toast.makeText(MainActivity.this, "Deletion Failed",
Toast.LENGTH_SHORT).show();
        }
    }
});

view.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Cursor res = db.getUserData();
        if(res.getCount()==0){
            Toast.makeText(MainActivity.this, "No Data Exists",
Toast.LENGTH_SHORT).show();
            return;
        }
        StringBuffer buffer = new StringBuffer();
        while(res.moveToNext()){
            buffer.append("Name: "+res.getString(0)+"\n");
            buffer.append("Contact: "+res.getString(1)+"\n");
            buffer.append("Date of Birth: "+res.getString(2)+"\n\n");
        }

        AlertDialog.Builder builder = new AlertDialog.Builder(MainActivity.this);
        builder.setCancelable(true);
        builder.setTitle("User Data");
        builder.setMessage(buffer.toString());
        builder.show();
    }
}

```

```

    });
}
}

```

DbHelper.java

```

package com.example.database;

import android.content.ContentValues;
import android.content.Context;
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.database.sqlite.SQLiteOpenHelper;

public class DbHelper extends SQLiteOpenHelper {

    public DbHelper(Context context){
        super(context,"Userdata.db",null,1);
    }
    @Override
    public void onCreate(SQLiteDatabase db) {
        db.execSQL("CREATE TABLE Userdetails(name TEXT PRIMARY KEY,contact TEXT,dob TEXT)");
    }

    @Override
    public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {
        db.execSQL("DROP TABLE if exists Userdetails");
    }

    public Boolean insertUserData(String name, String contact, String dob){
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("name",name);
        contentValues.put("contact",contact);
        contentValues.put("dob",dob);
        long res = db.insert("Userdetails",null,contentValues);
        if(res == -1){
            return false;
        }else
            return true;
    }

    public Boolean updateUserData(String name, String contact, String dob){
        SQLiteDatabase db = this.getWritableDatabase();
        ContentValues contentValues = new ContentValues();
        contentValues.put("contact",contact);
        contentValues.put("dob",dob);
        Cursor cursor = db.rawQuery("SELECT * FROM Userdetails WHERE name=?",new
String[]{name});
        if(cursor.getCount()>0){
            long res = db.update("Userdetails",contentValues,"name=?",new String[]{name});
            if(res == -1){
                return false;
            }else
                return true;
        }else
            return false;
    }
}

```

```

    }

    public Boolean deleteUserData(String name){
        SQLiteDatabase db = this.getWritableDatabase();
        Cursor cursor = db.rawQuery("SELECT * FROM Userdetails WHERE name=?",new
String[]{name});
        if(cursor.getCount()>0){
            long res = db.delete("Userdetails","name=?",new String[]{name});
            if(res == -1){
                return false;
            }else
                return true;
        }else
            return false;
    }

    public Cursor getUserData(){
        SQLiteDatabase db = this.getWritableDatabase();
        Cursor cursor = db.rawQuery("SELECT * FROM Userdetails",null);
        return cursor;
    }
}

```

## 7. SHARED PREFERENCES

activity\_main.xml

```

<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textview"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:gravity="center_horizontal"
        android:textSize="30sp"
        tools:text="Here will be our text" />
    <EditText
        android:id="@+id/edittext"
        android:layout_width="match_parent"
        android:layout_height="wrap_content" />
    <Button
        android:id="@+id/apply_text_button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal"
        android:text="apply text" />
    <Switch
        android:id="@+id/switch1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center_horizontal" />

```

```

        <Button
            android:id="@+id/save_button"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_gravity="center_horizontal"
            android:text="save data" />
    </LinearLayout>

```

MainActivity.java

```

package com.example.sharedpreferences;
import androidx.appcompat.app.AppCompatActivity;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Switch;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private TextView textView;
    private EditText editText;
    private Button applyTextButton;
    private Button saveButton;
    private Switch switch1;
    public static final String SHARED_PREFS = "sharedPrefs";
    public static final String TEXT = "text";
    public static final String SWITCH1 = "switch1";
    private String text;
    private boolean switchOnOff;

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

        textView = (TextView) findViewById(R.id.textview);
        editText = (EditText) findViewById(R.id.edittext);
        applyTextButton = (Button) findViewById(R.id.apply_text_button);
        saveButton = (Button) findViewById(R.id.save_button);
        switch1 = (Switch) findViewById(R.id.switch1);
        applyTextButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                textView.setText(editText.getText().toString());
            }
        });
        saveButton.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                saveData();
            }
        });
    }
}

```

```

    });
    loadData();
    updateViews();
}
public void saveData() {
    SharedPreferences sharedPreferences = getSharedPreferences(SHARED_PREFS,
MODE_PRIVATE);
    SharedPreferences.Editor editor = sharedPreferences.edit();
    editor.putString(TEXT, textView.getText().toString());
    editor.putBoolean(SWITCH1, switch1.isChecked());
    editor.apply();
    Toast.makeText(this, "Data saved", Toast.LENGTH_SHORT).show();
}
public void loadData() {
    SharedPreferences sharedPreferences = getSharedPreferences(SHARED_PREFS,
MODE_PRIVATE);
    text = sharedPreferences.getString(TEXT, "");
    switchOnOff = sharedPreferences.getBoolean(SWITCH1, false);
}
public void updateViews() {
    textView.setText(text);
    switch1.setChecked(switchOnOff);
}
}

```

## 8. LAYOUT INFLATORS

```

package com.example.labtest;
import androidx.appcompat.app.AppCompatActivity;
import android.graphics.Color;
import android.os.Bundle;
import android.view.Gravity;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.EditText;
import android.widget.Toast;

```

```

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        final EditText edit_query = findViewById(R.id.edit_query);
        findViewById(R.id.buttonPanel).setOnClickListener(new View.OnClickListener() {

            public void showToast(int i){
                LayoutInflater inflater = getLayoutInflater();
                View layout =
inflater.inflate(R.layout.custom,(ViewGroup)findViewById(R.id.toast_root));
                TextView text = layout.findViewById(R.id.toast_text);
                Toast toast =
Toast.makeText(getApplicationContext(),"message",Toast.LENGTH_LONG);
                if(i==0){
                    text.setTextColor(Color.BLUE);

```



```

        toast.setGravity(Gravity.CENTER,0,0);
        toast.setDuration	Toast.LENGTH_LONG);
        toast.setText("The entered number is even");
        toast.setView(layout);
        toast.show();
    }else{
        text.setTextColor(Color.RED);
        toast.setGravity(Gravity.CENTER,0,0);
        toast.setDuration	Toast.LENGTH_LONG);
        toast.setText("The entered number is odd");
        toast.setView(layout);
        toast.show();
    }

}

public void onClick(View v) {
    String data = edit_query.getText().toString();
    if (!data.isEmpty()) {
        char c = data.charAt(1);
        if (c%2==0) {

            showToast(0);
            //Toast.makeText(MainActivity.this, " The entered number is even",
Toast.LENGTH_LONG).show();
        }
        else
            showToast(1);
            //Toast.makeText(MainActivity.this, " The entered number is odd.",
Toast.LENGTH_LONG).show();
        }
        else
            Toast.makeText(MainActivity.this, " Enter a number",
Toast.LENGTH_LONG).show();
    }
}
}

```

```

xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:gravity="center"
    android:layout_height="match_parent"
    tools:context=".MainActivity"
    android:orientation="vertical">
    <EditText
        android:id="@+id/edit_query"
        android:layout_width="match_parent"
        android:hint="Enter number"
        android:inputType="number"
        android:layout_height="wrap_content" />
    <Button
        android:id="@+id/buttonPanel"

```

```

        android:text="Click"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
</LinearLayout>

```

custom 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="horizontal"
    android:background="@android:color/holo_blue_bright"
    android:padding="8dp"
    android:id="@+id/toast_root"
    >

```

```

    <TextView
        android:id="@+id/toast_text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="This is a custom toast"
        android:textColor="@android:color/holo_green_dark"
        android:textSize="16sp"/>

```

```
</LinearLayout>
```

## 9. FRAGMENTS

activity\_main.xml

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

```

<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

```

```

    <fragment
        android:id="@+id/fr1"
        android:name="com.example.fragments2.fr1"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_weight="1" />

```

```

    <fragment
        android:id="@+id/fr2"
        android:name="com.example.fragments2.fr2"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_weight="1" />

```

```

    <fragment
        android:id="@+id/fr3"
        android:name="com.example.fragments2.fr3"

```

```
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_weight="1" />
</LinearLayout>
```

MainActivity.java

```
package com.example.fragments1;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

fragment\_fr1.xml

```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".fr1">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="Fragment 1"
        android:textSize="20dp"
        android:textAlignment="center"
        android:background="#ea9999"/>

</FrameLayout>
```

fr1.java

```
package com.example.fragments2;

import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class fr1 extends Fragment {
    private static final String ARG_PARAM1 = "param1";
    private static final String ARG_PARAM2 = "param2";

    private String mParam1;
    private String mParam2;
```

```

public fr1() {
    // Required empty public constructor
}

public static fr1 newInstance(String param1, String param2) {
    fr1 fragment = new fr1();
    Bundle args = new Bundle();
    args.putString(ARG_PARAM1, param1);
    args.putString(ARG_PARAM2, param2);
    fragment.setArguments(args);
    return fragment;
}

@Override
public void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    if (getArguments() != null) {
        mParam1 = getArguments().getString(ARG_PARAM1);
        mParam2 = getArguments().getString(ARG_PARAM2);
    }
}

@Override
public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) {
    return inflater.inflate(R.layout.fragment_fr1, container, false);
}
}

```

fragment\_fr2.xml

```

<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".fr2">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="Fragment 2"
        android:textSize="20dp"
        android:textAlignment="center"
        android:background="#f9cb9c"/>
</FrameLayout>

```

fr2.java

```

package com.example.fragments2;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;
import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

```

```

public class fr2 extends Fragment {
    private static final String ARG_PARAM1 = "param1";
    private static final String ARG_PARAM2 = "param2";

    private String mParam1;
    private String mParam2;

    public fr2() {
        // Required empty public constructor
    }

    public static fr2 newInstance(String param1, String param2) {
        fr2 fragment = new fr2();
        Bundle args = new Bundle();
        args.putString(ARG_PARAM1, param1);
        args.putString(ARG_PARAM2, param2);
        fragment.setArguments(args);
        return fragment;
    }

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        if (getArguments() != null) {
            mParam1 = getArguments().getString(ARG_PARAM1);
            mParam2 = getArguments().getString(ARG_PARAM2);
        }
    }

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_fr2, container, false);
    }
}

```

fragment\_fr3.xml

```

<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".fr3">
    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:background="#45818e"
        android:text="Fragment 3"
        android:textAlignment="center"
        android:textSize="20dp" />
</FrameLayout>

```

fr3.java

```

package com.example.fragments2;
import androidx.appcompat.app.AppCompatActivity;
import androidx.fragment.app.Fragment;

```

```

import android.os.Bundle;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

public class fr3 extends Fragment {
    private static final String ARG_PARAM1 = "param1";
    private static final String ARG_PARAM2 = "param2";

    private String mParam1;
    private String mParam2;

    public fr3() {
        // Required empty public constructor
    }

    public static fr3 newInstance(String param1, String param2) {
        fr3 fragment = new fr3();
        Bundle args = new Bundle();
        args.putString(ARG_PARAM1, param1);
        args.putString(ARG_PARAM2, param2);
        fragment.setArguments(args);
        return fragment;
    }

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        if (getArguments() != null) {
            mParam1 = getArguments().getString(ARG_PARAM1);
            mParam2 = getArguments().getString(ARG_PARAM2);
        }
    }

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container,
                             Bundle savedInstanceState) {
        // Inflate the layout for this fragment
        return inflater.inflate(R.layout.fragment_fr3, container, false);
    }
}

```