SQLite:

mainactivity.java

```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.btnInsert);
        update = findViewById(R.id.btnUpdate);
        delete = findViewById(R.id.btnDelete);
        view = findViewById(R.id.btnView);
        DB = new DBHelper(this);
        insert.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String nameTXT = name.getText().toString();
                String contactTXT = contact.getText().toString();
                String dobTXT = dob.getText().toString();

                Boolean checkinsertdata = DB.insertuserdata(nameTXT, contactTXT, dobTXT);
                if(checkinsertdata==true)
                    Toast.makeText(MainActivity.this, "New Entry Inserted",
Toast.LENGTH_SHORT).show();
                else
                    Toast.makeText(MainActivity.this, "New Entry Not Inserted",
Toast.LENGTH_SHORT).show();
            }        });
        update.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String nameTXT = name.getText().toString();
                String contactTXT = contact.getText().toString();
                String dobTXT = dob.getText().toString();

                Boolean checkupdatedata = DB.updateuserdata(nameTXT, contactTXT, dobTXT);
                if(checkupdatedata==true)
                    Toast.makeText(MainActivity.this, "Entry Updated",
Toast.LENGTH_SHORT).show();
                else
```

```java
                Toast.makeText(MainActivity.this, "New Entry Not Updated",
Toast.LENGTH_SHORT).show();
                }               });
        delete.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String nameTXT = name.getText().toString();
                Boolean checkudeletedata = DB.deletedata(nameTXT);
                if(checkudeletedata==true)
                    Toast.makeText(MainActivity.this, "Entry Deleted",
Toast.LENGTH_SHORT).show();
                else
                    Toast.makeText(MainActivity.this, "Entry Not Deleted",
Toast.LENGTH_SHORT).show();
            }           });

        view.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                Cursor res = DB.getdata();
                if(res.getCount()==0){
                    Toast.makeText(MainActivity.this, "No Entry 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 Entries");
                builder.setMessage(buffer.toString());
                builder.show();
            }           });
    }}
```

DBHelper.java


```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;

        import androidx.annotation.Nullable;

public class DBHelper extends SQLiteOpenHelper {
    public DBHelper(Context context) {
```

```java
            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 i, int ii) {
        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 result=DB.insert("Userdetails", null, contentValues);
        if(result==-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 result = DB.update("Userdetails", contentValues, "name=?", new String[]{name});
            if (result == -1) {
                return false;
            } else {
                return true;
            }
        } else {
            return false;
        }
    }
    public Boolean deletedata (String name)
    {
        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("Select * from Userdetails where name = ?", new
String[]{name});
        if (cursor.getCount() > 0) {
            long result = DB.delete("Userdetails", "name=?", new String[]{name});
            if (result == -1) {
                return false;
            } else {
                return true;
            }
        } else {
            return false;
```

```
        }
    }

    public Cursor getdata ()
    {
        SQLiteDatabase DB = this.getWritableDatabase();
        Cursor cursor = DB.rawQuery("Select * from Userdetails", null);
        return cursor;
    }
}
```

activity_main.xml

```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/texttitle"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Please enter the details below"
        android:textSize="24dp"
        android:layout_marginTop="20dp"/>
    <EditText
        android:id="@+id/name"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Name"
        android:textSize="24dp"
        android:layout_below="@+id/texttitle"
        android:inputType="textPersonName"/>
    <EditText
        android:id="@+id/contact"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Contact"
        android:textSize="24dp"
        android:layout_below="@+id/name"
        android:inputType="number"/>
    <EditText
        android:id="@+id/dob"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:hint="Date of Birth"
        android:textSize="24dp"
        android:layout_below="@+id/contact"
        android:inputType="number"/>
    <Button
        android:id="@+id/btnInsert"
        android:layout_width="match_parent"
```

```xml
            android:layout_height="wrap_content"
            android:textSize="24dp"
            android:text="Insert New Data"
            android:layout_marginTop="30dp"
            android:layout_below="@id/dob"/>
    <Button
            android:id="@+id/btnUpdate"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:textSize="24dp"
            android:text="Update Data"
            android:layout_below="@id/btnInsert"/>
    <Button
            android:id="@+id/btnDelete"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:textSize="24dp"
            android:text="Delete Existing Data"
            android:layout_below="@id/btnUpdate"/>
    <Button
            android:id="@+id/btnView"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:textSize="24dp"
            android:text="View Data"
            android:layout_below="@id/btnDelete"/>
</RelativeLayout>
```

Shared preferences

activity_main.xml


```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
```

```xml
                    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>
```

main.java

```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() {
```

```java
                @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);
    }
}
```

Fragment life cycle

main.java

```java
package com.example.fragmentlifecycle;

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);
    }
}
```

acticity_main.xml

```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" />


    <fragment
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/test_fragment"
        android:name="com.example.fragmentlifecycle.test">

    </fragment>

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


fragment_test.xml

```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=".test">


    <TextView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:text="check logcat" />

</FrameLayout>
```


test.java

```java
package com.example.fragmentlifecycle;
import android.annotation.TargetApi;
import android.app.Activity;
import android.app.Fragment;
```

```java
import android.os.Build;
import android.os.Bundle;
import android.util.Log;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;

@TargetApi(Build.VERSION_CODES.KITKAT)
public class test extends Fragment {

    private void printLog(String s) {
// display a message in Log File
        Log.d("LifeCycle:", s);
    }

    @Override
    public void onActivityCreated(Bundle savedInstanceState) {
        super.onActivityCreated(savedInstanceState);
        printLog("onActivityCreated Called");
    }

    @Override
    public View onCreateView(LayoutInflater inflater, ViewGroup container, Bundle savedInstanceState) {

        View v = inflater.inflate(R.layout.fragment_test, container, false);
        printLog("onCreateView Called");

        return v;
    }

    @Override
    public void onViewCreated(View view, Bundle savedInstanceState) {
        super.onViewCreated(view, savedInstanceState);
        printLog("onViewCreated Called");

    }

    @Override
    public void onAttach(Activity activity) {
        super.onAttach(activity);
        printLog("onAttach Called");
    }

    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        printLog("onCreate Called");
    }

    @Override
    public void onDestroy() {
        super.onDestroy();
        printLog("onDestroy Called");
    }

    @Override
```

```java
    public void onDestroyView() {
        super.onDestroyView();
        printLog("onDestroyView Called");
    }

    @Override
    public void onDetach() {
        super.onDetach();
        printLog("onDetach Called");
    }

    @Override
    public void onPause() {
        super.onPause();
        printLog("onPause Called");
    }

    @Override
    public void onResume() {
        super.onResume();
        printLog("onResume Called");
    }

    @Override
    public void onStart() {
        super.onStart();
        printLog("onStart Called");
    }

    @Override
    public void onStop() {
        super.onStop();
        printLog("onStop Called");
    }

}
```

MENUS

1. Option Menu
activity_main.xml
```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:id="@+id/clayout"
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" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java
```
package com.example.optionmenu;
import androidx.annotation.NonNull; import
androidx.appcompat.app.AppCompatActivity; import
androidx.constraintlayout.widget.ConstraintLayout;
import android.graphics.Color;
import android.os.Bundle; import
android.view.Menu; import
android.view.MenuInflater; import
android.view.MenuItem; import
android.widget.Toast;
public class MainActivity extends AppCompatActivity
{
ConstraintLayout clayout;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
clayout= findViewById(R.id.clayout);

}

public boolean onCreateOptionsMenu(Menu menu) {
MenuInflater inflater = getMenuInflater();
inflater.inflate(R.menu.menu, menu);
return true;
}
@Override
public boolean onOptionsItemSelected(@NonNull MenuItem item) {
switch (item.getItemId())
{
case R.id.red : clayout.setBackgroundColor(Color.RED);
return true;
case R.id.blue : clayout.setBackgroundColor(Color.BLUE);
return true;
case R.id.green : clayout.setBackgroundColor(Color.GREEN);
return true;
case R.id.yellow : clayout.setBackgroundColor(Color.YELLOW);
return true;
default: return super.onOptionsItemSelected(item);
}
}
}
```

menu.xml
```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto">
<item
android:id="@+id/red"
android:title="Red"
android:icon="@drawable/red"
app:showAsAction="ifRoom"/>
```

```xml
<item
android:id="@+id/green"
android:title="Green"
/>
<item
android:id="@+id/yellow"
android:title="Yellow" /> <item
android:id="@+id/blue"
android:title="Blue"
android:icon="@drawable/blue"
app:showAsAction="ifRoom"
/>
</menu>
```

2. Context Menu
activity_main.xml
```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:id="@+id/text_view"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Hello World!" android:textSize="20sp"
  app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintLeft_toLeftOf="parent"

app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```
MainActivity.java
```java
package com.example.contextmenu;
import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.ContextMenu;
import android.view.MenuItem;
import android.view.View; import
android.widget.TextView; import
android.widget.Toast;
public class MainActivity extends AppCompatActivity {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main); TextView
textView = findViewById(R.id.text_view);
registerForContextMenu(textView);
  }
```

```java
   @Override
   public void onCreateContextMenu(ContextMenu menu, View v,
ContextMenu.ContextMenuInfo menuInfo) {
super.onCreateContextMenu(menu, v, menuInfo);
menu.setHeaderTitle("Choose an option");
getMenuInflater().inflate(R.menu.contextmenu, menu);
   }
   @Override
   public boolean onContextItemSelected(@NonNull MenuItem item) {
   switch(item.getItemId())
   {
   case R.id.option1 : display("option 1");
return true;
   case R.id.option2 : display("option 2");
return true;
   default: return
super.onContextItemSelected(item);
   }
   }
   void display(String text)
   {
   Toast.makeText(getApplicationContext(), text, Toast.LENGTH_SHORT).show();
}
}
```

contextmenu.xml
```xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
  <item
  android:id="@+id/option1"
android:title="Option1"
  />

<item
  android:id="@+id/option2"
android:title="Option2"
  />
</menu>
```

3. Popup Menu
activity_main.xml
```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">

<Button
  android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginBottom="324dp"
```

```
android:onClick="showpopup" android:text="show
popup"
  app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.498"
app:layout_constraintStart_toStartOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

```
MainActivity.java package
com.example.popupmenu;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.MenuItem;
import android.view.View; import
android.widget.PopupMenu; import
android.widget.Toast;
public class MainActivity extends AppCompatActivity implements
PopupMenu.OnMenuItemClickListener {
  @Override
  protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState); setContentView(R.layout.activity_main);
  }
  public void showpopup(View v)
  {
  PopupMenu popup = new PopupMenu(this,v);
popup.inflate(R.menu.popupmenu); popup.show();
  popup.setOnMenuItemClickListener(this);
  }
  @Override
  public boolean onMenuItemClick(MenuItem item) {
switch (item.getItemId())
  {
  case R.id.item1 : Toast.makeText(getApplicationContext(), "option1
selected", Toast.LENGTH_SHORT).show(); return true;
  case R.id.item2: Toast.makeText(getApplicationContext(), "option2
selected", Toast.LENGTH_SHORT).show(); return true;
  default: return super.onContextItemSelected(item);
  }
  }
}
```

```
popupmenu.xml
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android">
  <item
  android:id="@+id/item1"
  android:title="Item1"/>
  <item
  android:id="@+id/item2"
  android:title="Item2"/>
</menu>
```

Intents

Activitymain.xml

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

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textAppearance="?android:attr/textAppearanceMedium"
        android:text="If you click on Explicit example we will navigate to second activity within App
and if you click on Implicit example android homepage will open in Browser"
        android:id="@+id/textView2"
        android:clickable="false"
        android:layout_alignParentTop="true"
        android:layout_alignParentStart="true"
        android:layout_marginTop="42dp"
        android:background="#3e7d02"
        android:textColor="#ffffff"
        android:layout_alignParentLeft="true" />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Explicit Intent Example"
        android:id="@+id/explicit_Intent"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="147dp" />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Implicit Intent Example"
        android:id="@+id/implicit_Intent"
        android:layout_centerVertical="true"
        android:layout_centerHorizontal="true" />

</RelativeLayout>
```

activity_second.xml

```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=".SecondActivity">
```

```xml
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textAppearance="?android:attr/textAppearanceLarge"
        android:text="this_is_second_activity"
        android:id="@+id/textView"
        android:layout_centerVertical="true"
        android:layout_centerHorizontal="true" />
</RelativeLayout>
```

mainActivity.java

```java
package com.example.intentsactivity;

import androidx.appcompat.app.AppCompatActivity;

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

public class MainActivity extends AppCompatActivity {

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


        explicit_btn = (Button)findViewById(R.id.explicit_Intent);
        implicit_btn = (Button) findViewById(R.id.implicit_Intent);

        //implement Onclick event for Explicit Intent

        explicit_btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                Intent intent = new Intent(getBaseContext(), SecondActivity.class);
                startActivity(intent);


            }
        });

        //implement onClick event for Implicit Intent

        implicit_btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                Intent intent = new Intent(Intent.ACTION_VIEW);
```

```java
                intent.setData(Uri.parse("https://developer.android.com/"));
                startActivity(intent);
            }
        });


    }
}


secondActivity.java

package com.example.intentsactivity;

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

public class SecondActivity extends Activity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_second);

        Toast.makeText(getApplicationContext(), "We are moved to second Activity",
Toast.LENGTH_LONG).show();
    }

}
```

Animation

activity_main.xml


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

    <ImageView
        android:id="@+id/imageview"
        android:layout_width="200dp"
        android:layout_height="200dp"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="40dp"
        android:contentDescription="@string/app_name"
        android:src="@drawable/animation" />

    <LinearLayout
        android:id="@+id/linear1"
        android:layout_width="match_parent"
```

```xml
        android:layout_height="wrap_content"
        android:layout_below="@id/imageview"
        android:layout_marginTop="30dp"
        android:orientation="horizontal"
        android:weightSum="3">


        <Button
            android:id="@+id/BTNblink"
            style="@style/TextAppearance.AppCompat.Widget.Button"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:layout_weight="1"
            android:padding="3dp"
            android:text="blink"
            android:textColor="@color/white" />

        <!--To start the rotate animation of the image-->
        <Button
            android:id="@+id/BTNrotate"
            style="@style/TextAppearance.AppCompat.Widget.Button"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:layout_weight="1"
            android:padding="3dp"
            android:text="clockwise"
            android:textColor="@color/white" />

        <!--To start the fading animation of the image-->
        <Button
            android:id="@+id/BTNfade"
            style="@style/TextAppearance.AppCompat.Widget.Button"
            android:layout_width="0dp"
            android:layout_height="wrap_content"
            android:layout_margin="10dp"
            android:layout_weight="1"
            android:padding="3dp"
            android:text="fade"
            android:textColor="@color/white" />

    </LinearLayout>
    <LinearLayout
        android:id="@+id/linear2"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/linear1"
        android:layout_marginTop="30dp"
        android:orientation="horizontal"
        android:weightSum="3">


    </LinearLayout>

    <!--To stop the animation of the image-->
```

```xml
    <Button
        android:id="@+id/BTNstop"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/linear2"
        android:layout_marginLeft="30dp"
        android:layout_marginTop="30dp"
        android:layout_marginRight="30dp"
        android:text="stop_animation" />

</RelativeLayout>
```

mainActivity.java

```java
package com.example.animation;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.view.animation.Animation;
import android.view.animation.AnimationUtils;
import android.widget.Button;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

    ImageView imageView;
    Button blinkBTN, rotateBTN, fadeBTN, moveBTN, slideBTN, zoomBTN, stopBTN;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        imageView = findViewById(R.id.imageview);
        blinkBTN = findViewById(R.id.BTNblink);
        rotateBTN = findViewById(R.id.BTNrotate);
        fadeBTN = findViewById(R.id.BTNfade);

        stopBTN = findViewById(R.id.BTNstop);

        blinkBTN.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                Animation animation = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.blink);
                imageView.startAnimation(animation);
            }
        });

        rotateBTN.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
```

```java
                Animation animation = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.rotate);
                imageView.startAnimation(animation);
            }
        });
        fadeBTN.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                Animation animation = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.fade);
                imageView.startAnimation(animation);
            }
        });

        stopBTN.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {

                imageView.clearAnimation();
            }
        });
    }
}
```

res/anim
rotate.xml


```xml
<?xml version="1.0" encoding="utf-8"?>
<set
    xmlns:android="http://schemas.android.com/apk/res/android">
    <rotate
        android:duration="6000"
        android:fromDegrees="0"
        android:pivotX="50%"
        android:pivotY="50%"
        android:toDegrees="360" />

    <rotate
        android:duration="6000"
        android:fromDegrees="360"
        android:pivotX="50%"
        android:pivotY="50%"
        android:startOffset="5000"
        android:toDegrees="0" />

</set>
```


blink.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <alpha android:fromAlpha="0.0"
        android:toAlpha="1.0"
        android:interpolator="@android:anim/accelerate_interpolator"
```

```
            android:duration="500"
            android:repeatMode="reverse"
            android:repeatCount="infinite"/>
</set>
```

fade.xml

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android"
        android:interpolator="@android:anim/accelerate_interpolator">


    <alpha
            android:duration="1000"
            android:fromAlpha="0"
            android:toAlpha="1" />

    <alpha
            android:duration="1000"
            android:fromAlpha="1"
            android:startOffset="2000"
            android:toAlpha="0" />

</set>
```

List view

mainActivity.java

```
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;

public class MainActivity extends AppCompatActivity {

    ListView l;
    String tutorials[]
        = { "Algorithms", "Data Structures",
            "Languages", "Interview Corner",
            "GATE", "ISRO CS",
            "UGC NET CS", "CS Subjects",
            "Web Technologies" };

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        l = findViewById(R.id.list);
        ArrayAdapter<String> arr;
        arr
            = new ArrayAdapter<String>(
```

```
                        this,
                        R.layout.support_simple_spinner_dropdown_item,
                        tutorials);
            l.setAdapter(arr);
        }
}
```

activity_main.xml

```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">

    <ListView
        android:id="@+id/list"
        android:layout_width="match_parent"
        android:layout_height="match_parent"/>
</LinearLayout>
```

custom list view

activity_main.xml

```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">


    <ListView
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:id="@+id/customListView"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:divider="@color/black"
        android:dividerHeight="2dp"
        android:listSelector="@color/purple_200"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

customlv.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical" android:layout_width="match_parent"
    android:layout_height="match_parent">
    <ImageView
        android:layout_width="100dp"
        android:layout_height="100dp"
        android:id="@+id/imageIcon" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:id="@+id/textView"
        android:textSize="30sp"
        android:gravity="center"
        android:text="My Text" />
</LinearLayout>
```

mainActivity.java

```java
package com.example.customlist;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.widget.ListView;

public class MainActivity extends AppCompatActivity {
    String fruitlist []={"Apple","Banana","Orange"};
    int fruitImages []={R.drawable.apple,R.drawable.banana,R.drawable.orange};
    ListView listView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        listView = (ListView) findViewById(R.id.customListView);
        customBaseAdapter customBaseAdapter =new
customBaseAdapter(getApplicationContext(),fruitlist,fruitImages);
        listView.setAdapter(customBaseAdapter);
    }
}
```

customBaseAdapter.java

```java
package com.example.customlist;


import android.content.Context;
import android.view.LayoutInflater;
import android.view.View;
```

```java
import android.view.ViewGroup;
import android.widget.BaseAdapter;
import android.widget.ImageView;
import android.widget.TextView;

public class customBaseAdapter extends BaseAdapter {
        Context context;
        String listFruit[];
        int    listImages[];
        LayoutInflater inflater;


        public customBaseAdapter(Context ctx,String []fruitlist,int [] fruitImages){
            this.context =ctx;
            this.listFruit =fruitlist;
            this.listImages=fruitImages;
            inflater =LayoutInflater.from(ctx);
        }
        @Override
        public int getCount() {
            return listFruit.length;
        }

        @Override
        public Object getItem(int position) {
            return null;
        }

        @Override
        public long getItemId(int position) {
            return 0;
        }

        @Override
        public View getView(int position, View convertView, ViewGroup parent) {
            convertView = inflater.inflate(R.layout.customlv,null);
            TextView textView=(TextView) convertView.findViewById(R.id.textView);
            ImageView fruitImg=(ImageView) convertView.findViewById(R.id.imageIcon);
            textView.setText(listFruit[position]);
            fruitImg.setImageResource(listImages[position]);
            return convertView;
        }
    }
```

   SPINNER
activity.xml
```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
```

```xml
            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
```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
```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.OnItemSelectedListener {

    @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,
```

```java
                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) {

    }
}
```

activity life cycle

mainActivity.java

```java
package com.example.activitylifecycle;

import android.os.Bundle;

import com.google.android.material.snackbar.Snackbar;

import androidx.appcompat.app.AppCompatActivity;

import android.util.Log;
import android.view.View;

import androidx.navigation.NavController;
import androidx.navigation.Navigation;
import androidx.navigation.ui.AppBarConfiguration;
import androidx.navigation.ui.NavigationUI;

import com.example.activitylifecycle.databinding.ActivityMainBinding;

import android.view.Menu;
import android.view.MenuItem;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    private AppBarConfiguration appBarConfiguration;
    private ActivityMainBinding binding;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("lifecycle","onCreate invoked");
```

```java
        Toast.makeText(this,"on create",Toast.LENGTH_SHORT).show();
    }


    @Override
    protected void onStart(){
    super.onStart();
    Log.d("lifecycle","onStart invoked");
        Toast.makeText(this,"on start",Toast.LENGTH_SHORT).show();
    }
    @Override
    protected void onResume(){
        super.onResume();
        Log.d("lifecycle","onResume invoked");
        Toast.makeText(this,"on resume",Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onPause(){
        super.onPause();
        Log.d("lifecycle","onPause invoked");
        Toast.makeText(this,"on Pause",Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onStop(){
        super.onStop();
        Log.d("lifecycle","onStop invoked");
        Toast.makeText(this,"on stop",Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onRestart(){
        super.onRestart();
        Log.d("lifecycle","onRestart invoked");
        Toast.makeText(this,"on restart",Toast.LENGTH_SHORT).show();
    }

    @Override
    protected void onDestroy(){
        super.onDestroy();
        Log.d("lifecycle","onDestroy invoked");
        Toast.makeText(this,"on Destory",Toast.LENGTH_SHORT).show();
    }

}
```

activity_main.xml

```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:paddingLeft="16dp"
    android:paddingRight="16dp"
    android:orientation="horizontal" >
```

```xml
    <Button
        android:id="@+id/b1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

        android:text="Button 1" />
    <Button
        android:id="@+id/b2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"

        android:text="Button 2" />
    <Button
        android:id="@+id/b3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"



        android:text="Button 3" />
</LinearLayout>
```

RADIO BUTTON

```xml
<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"
```

```xml
        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"
```

```xml
                    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
```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
```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()) {
```

```java
                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
            }
        });
    }
}
```

DATE PICKER

activitymain.xml
```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
```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);
```

```java
        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();
            }
        });
    }
}
```

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"
```

```xml
                    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
<?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
```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
```

```
                }
            });
        }
}
```

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"};
```

```java
    @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);
    }
}
```