**Layout Manager & Event Listener:**

**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">

<RelativeLayout

android:id="@+id/textView2"

android:layout\_width="368dp"

android:layout\_height="495dp"

android:layout\_marginStart="8dp"

android:layout\_marginTop="8dp"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent">

<LinearLayout

android:id="@+id/linearLayout"

android:layout\_width="match\_parent"

android:layout\_height="40dp"

android:layout\_alignParentTop="true"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="28dp"

android:orientation="vertical"

android:visibility="visible">

<TextView

android:id="@+id/textView"

android:layout\_width="match\_parent"

android:layout\_height="40dp"

android:text="Layout Manager Event

Listener"

android:textAlignment="center"

android:textColor="@color/black"

android:textSize="24sp" />

</LinearLayout>

<LinearLayout

android:id="@+id/linearLayout2"

android:layout\_width="match\_parent"

android:layout\_height="50dp"

android:layout\_below="@+id/linearLayout"

android:layout\_alignParentStart="true"

android:layout\_marginStart="11dp"

android:layout\_marginTop="23dp"

android:orientation="horizontal">

<Button

android:id="@+id/b1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:text="RED" />

<Button

android:id="@+id/b2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:text="GREEN" />

<Button

android:id="@+id/b3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:text="BLUE" />

</LinearLayout>

<ListView

android:id="@+id/l"

android:layout\_width="match\_parent"

android:layout\_height="200dp"

android:layout\_alignParentEnd="true"

android:layout\_centerVertical="true" />

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="50dp"

android:layout\_alignStart="@+id/linearLayout2"

android:layout\_alignParentBottom="true"

android:layout\_marginStart="110dp"

android:layout\_marginBottom="52dp"

android:orientation="vertical">

<Spinner

android:id="@+id/s"

android:layout\_width="match\_parent"

android:layout\_height="50dp"

android:visibility="visible" />

</LinearLayout>

</RelativeLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

**Java:**

package com.example.ex2;

import androidx.appcompat.app.AppCompatActivity;

import android.graphics.Color;

import android.os.Bundle;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.Button;

import android.widget.ListView;

import android.widget.Spinner;

import android.widget.Toast;

import android.view.View;

public class MainActivity extends AppCompatActivity {

Button b1,b2,b3;

ListView l;

Spinner s;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

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

b2=(Button)findViewById( R.id.b2 );

b3=(Button)findViewById( R.id.b3 );

l=(ListView)findViewById( R.id.l );

s=(Spinner)findViewById( R.id.s );

b1.setOnClickListener( new View.OnClickListener()

{ @Override

public void onClick(View v) {

b1.setTextColor( Color.RED );

}

} );

b2.setOnClickListener( new View.OnClickListener()

{ @Override

public void onClick(View v) {

b2.setTextColor( Color.GREEN );

}

} );

b3.setOnClickListener( new View.OnClickListener()

{ @Override

public void onClick(View v) {

b3.setTextColor( Color.BLUE );

}

} );

String a[]=new String[] {"Red", "Green","Blue"};

final ArrayAdapter<String> aa=new

ArrayAdapter<String>(this,android.R.layout.simple\_dropdown\_item\_1line,a );

l.setAdapter( aa );

s.setAdapter( aa );

l.setOnItemClickListener( new AdapterView.OnItemClickListener()

{ @Override

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

String s=(String)l.getItemAtPosition( position );

Toast.makeText(getApplicationContext(),"List View "+s,

Toast.LENGTH\_SHORT).show();

}

} );

s.setOnItemSelectedListener( new AdapterView.OnItemSelectedListener()

{ @Override

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

{

String s1=(String)parent.getItemAtPosition( position );

Toast.makeText(getApplicationContext(),"Spinner "+s1,

Toast.LENGTH\_SHORT).show();

}

@Override

public void onNothingSelected(AdapterView<?> parent) {

}

} );

}

}

**Graphical Primitives:**

**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">

<RelativeLayout

android:id="@+id/relativeLayout"

android:layout\_width="368dp"

android:layout\_height="495dp"

android:layout\_marginStart="4dp"

android:layout\_marginTop="16dp"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent">

<ImageView

android:id="@+id/i"

android:layout\_width="288dp"

android:layout\_height="335dp"

app:srcCompat="@android:drawable/btn\_star" />

</RelativeLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

**JAVA:**

package com.example.ex3;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.graphics.Bitmap;

import android.graphics.Canvas;

import android.graphics.Color;

import android.graphics.Paint;

import android.graphics.drawable.BitmapDrawable;

import android.os.Bundle;

import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

ImageView i;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

Bitmap b= Bitmap.createBitmap( 720,1280,Bitmap.Config.ARGB\_8888 );

i=(ImageView)findViewById( R.id.i ); i.setBackgroundDrawable( new

BitmapDrawable( b ) );

Canvas canvas=new Canvas( b );

Paint paint =new Paint( );

paint.setColor( Color.BLUE );

paint.setTextSize( 50 );

canvas.drawText( "Rectangle", 420, 150, paint );

canvas.drawRect( 400, 200, 650, 700, paint );

canvas.drawText( "Circle",120, 150, paint );

canvas.drawCircle( 200,350, 150, paint );

canvas.drawText( "Square", 120, 800, paint );

canvas.drawRect( 50, 850, 350, 1150, paint );

canvas.drawText( "Line", 480, 800, paint );

canvas.drawLine( 520,850, 520, 1150, paint );

}

}

**Animation using Multithread:**

**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">

<RelativeLayout

android:layout\_width="368dp"

android:layout\_height="495dp"

tools:layout\_editor\_absoluteX="50dp"

tools:layout\_editor\_absoluteY="30dp">

<ImageView

android:id="@+id/i"

android:layout\_width="267dp"

android:layout\_height="233dp"

android:layout\_alignParentTop="true"

android:layout\_marginTop="94dp" />

<Button

android:id="@+id/b1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignBaseline="@+id/b2"

android:layout\_alignStart="@+id/i"

android:layout\_alignBottom="@+id/b2"

android:layout\_marginStart="0dp"

android:layout\_marginBottom="-12dp"

android:text="LOAD IMAGE 1" />

<Button

android:id="@+id/b2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignParentEnd="true"

android:layout\_alignParentBottom="true"

android:layout\_marginEnd="33dp"

android:layout\_marginBottom="54dp"

android:text="LOAD IMAGE 2"

tools:layout\_editor\_absoluteX="235dp"

tools:layout\_editor\_absoluteY="385dp" />

</RelativeLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

**JAVA:**

package com.example.ex4;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

ImageView i;

Button b1,b2;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

i=(ImageView)findViewById( R.id.i );

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

b2=(Button)findViewById( R.id.b2 );

b1.setOnClickListener( new View.OnClickListener()

{ @Override

public void onClick(View v) {

new Thread( new Runnable() {

@Override

public void run() {

i.post( new Runnable() {

@Override

public void run() {

i.setImageResource( R.drawable.n1 );

}

} );

}

} ).start();

}

} );

b2.setOnClickListener( new View.OnClickListener()

{ @Override

public void onClick(View v) {

new Thread( new Runnable(){

@Override

public void run() {

i.post( new Runnable() {

@Override

public void run() {

i.setImageResource( R.drawable.n2 );

}

} );

}

} ).start();

}

} );

}

}

**Persistent Database:**

**XML1:**

<?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">

<RelativeLayout

android:layout\_width="368dp"

android:layout\_height="495dp"

tools:layout\_editor\_absoluteX="8dp"

tools:layout\_editor\_absoluteY="8dp">

<TextView

android:id="@+id/f1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignParentTop="true"

android:layout\_alignStart="@+id/b1"

android:layout\_marginTop="65dp"

android:text="FirstName" />

<TextView

android:id="@+id/l1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/f1"

android:layout\_below="@+id/e1"

android:layout\_marginTop="16dp"

android:text="LastName" />

<TextView

android:id="@+id/m1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/b1"

android:layout\_below="@+id/e2"

android:layout\_marginTop="19dp"

android:text="MailId" />

<EditText

android:id="@+id/e1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignParentEnd="true"

android:layout\_alignTop="@+id/f1"

android:layout\_marginEnd="24dp"

android:ems="10"

android:inputType="textPersonName" />

<EditText

android:id="@+id/e2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/e1"

android:layout\_alignTop="@+id/l1"

android:ems="10"

android:inputType="textPersonName" />

<EditText

android:id="@+id/e3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/e2"

android:layout\_alignTop="@+id/m1"

android:ems="10"

android:inputType="textPersonName" />

<Button

android:id="@+id/b1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@+id/m1"

android:layout\_marginTop="52dp"

android:layout\_toStartOf="@+id/e3"

android:text="Add" />

<Button

android:id="@+id/b2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignTop="@+id/b1"

android:layout\_centerHorizontal="true"

android:text="Close" />

<Button

android:id="@+id/b3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignBaseline="@+id/b2"

android:layout\_alignBottom="@+id/b2"

android:layout\_marginStart="12dp"

android:layout\_toEndOf="@+id/b2"

android:text="Show" />

</RelativeLayout>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Hello World!"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>

**XML2:**

<?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=".MainActivity2">

<RelativeLayout

android:layout\_width="368dp"

android:layout\_height="495dp"

tools:layout\_editor\_absoluteX="8dp"

tools:layout\_editor\_absoluteY="8dp">

<TextView

android:id="@+id/f2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignParentTop="true"

android:layout\_marginEnd="32dp"

android:layout\_marginTop="68dp"

android:layout\_toStartOf="@+id/e4"

android:text="FirstName" />

<EditText

android:id="@+id/e4"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/b5"

android:layout\_alignTop="@+id/f2"

android:ems="10"

android:inputType="textPersonName" />

<TextView

android:id="@+id/l2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/f2"

android:layout\_below="@+id/e4"

android:layout\_marginTop="20dp"

android:text="LastName" />

<EditText

android:id="@+id/e5"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/e4"

android:layout\_alignTop="@+id/l2"

android:ems="10"

android:inputType="textPersonName" />

<TextView

android:id="@+id/m2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/l2"

android:layout\_below="@+id/e5"

android:layout\_marginTop="21dp"

android:text="MailId" />

<EditText

android:id="@+id/e6"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/e5"

android:layout\_alignTop="@+id/m2"

android:ems="10"

android:inputType="textPersonName" />

<Button

android:id="@+id/b4"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/m2"

android:layout\_below="@+id/e6"

android:layout\_marginTop="35dp"

android:text="previous" />

<Button

android:id="@+id/b5"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignBottom="@+id/b4"

android:layout\_centerHorizontal="true"

android:text="Next" />

<Button

android:id="@+id/b6"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignBaseline="@+id/b5"

android:layout\_alignBottom="@+id/b5"

android:layout\_marginStart="13dp"

android:layout\_toEndOf="@+id/b5"

android:text="Back" />

</RelativeLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

**JAVA1:**

package com.example.exp5;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.database.sqlite.SQLiteDatabase;

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 {

SQLiteDatabase db;

String f1,l1,m1;

EditText e1,e2,e3;

Button add,close,show;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

db=openOrCreateDatabase("Mydb",MODE\_PRIVATE,null);

db.execSQL("CREATE TABLE IF NOT EXISTS student(fname VARCHAR, lname VARCHAR, email VARCHAR);");

add=(Button)findViewById(R.id.b1);

close=(Button)findViewById(R.id.b2);

show=(Button)findViewById(R.id.b3);

add.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

e1=(EditText)findViewById(R.id.e1);

e2=(EditText)findViewById(R.id.e2);

e3=(EditText)findViewById(R.id.e3);

f1=e1.getText().toString();

l1=e2.getText().toString();

m1=e3.getText().toString();

db.execSQL("INSERT INTO student VALUES ('"+f1+"','"+l1+"','"+m1+"');");

Toast.makeText(getApplicationContext(),

"Row Inserted",Toast.LENGTH\_LONG).show();

}

});

close.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

System.exit(0);

}

});

show.setOnClickListener(new View.OnClickListener()

{ @Override

public void onClick(View view) {

Intent i=new Intent(getApplicationContext(),MainActivity2.class);

startActivity(i);

}

});

}

}

**JAVA2:**

package com.example.exp5;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.content.Intent;

import android.database.Cursor;

import android.database.sqlite.SQLiteDatabase;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

public class MainActivity2 extends AppCompatActivity {

EditText fn,ln,em;

Button prev,next,back;

SQLiteDatabase db;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main2);

fn=(EditText)findViewById(R.id.e4);

ln=(EditText)findViewById(R.id.e5);

em=(EditText)findViewById(R.id.e6);

prev=(Button)findViewById(R.id.b4);

next=(Button)findViewById(R.id.b5);

back=(Button)findViewById(R.id.b6);

db=openOrCreateDatabase("Mydb",MODE\_PRIVATE,null);

final Cursor c=db.rawQuery("select \* from student",null);

c.moveToFirst();

back.setOnClickListener(new View.OnClickListener()

{ @Override

public void onClick(View view) {

Intent i1=new Intent(getApplicationContext(),MainActivity.class);

startActivity(i1);

}

});

prev.setOnClickListener(new View.OnClickListener()

{ @Override

public void onClick(View view) {

try {

c.moveToPrevious();

fn.setText(c.getString(c.getColumnIndexOrThrow("fname")));

ln.setText(c.getString(c.getColumnIndexOrThrow("lname")));

em.setText(c.getString(c.getColumnIndexOrThrow("email")));

}

catch (Exception e){

Toast.makeText(getApplicationContext(),

"First Record",Toast.LENGTH\_SHORT).show();

e.printStackTrace();

}

}

});

next.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

try{

c.moveToNext();

fn.setText(c.getString(c.getColumnIndexOrThrow("fname")));

ln.setText(c.getString(c.getColumnIndexOrThrow("lname")));

em.setText(c.getString(c.getColumnIndexOrThrow("email")));

}

catch (Exception e){

Toast.makeText(getApplicationContext(),

"Last Record",Toast.LENGTH\_SHORT).show();

}

}

});

}

}

**SD CARD MANAGER:**

**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">

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:layout\_margin="20dp"

android:orientation="vertical">

<EditText

android:id="@+id/editText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:singleLine="true"

android:textSize="30dp" />

<Button

android:id="@+id/button"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_margin="10dp"

android:text="Write Data"

android:textSize="30dp" />

<Button

android:id="@+id/button2"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_margin="10dp"

android:text="Read data"

android:textSize="30dp" />

<Button

android:id="@+id/button3"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_margin="10dp"

android:text="Clear"

android:textSize="30dp" />

</LinearLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

**JAVA:**

package com.example.ex6;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.os.Environment;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

import java.io.BufferedReader;

import java.io.File;

import java.io.FileInputStream;

import java.io.FileOutputStream;

import java.io.InputStreamReader;

public class MainActivity extends AppCompatActivity {

EditText e1;

Button write,read,clear;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

e1= (EditText) findViewById(R.id.editText);

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

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

clear= (Button) findViewById(R.id.button3);

write.setOnClickListener(new View.OnClickListener()

{

@Override

public void onClick(View v)

{

String message=e1.getText().toString();

try

{

File f=new File(Environment.getExternalStoragePublicDirectory(Environment.DIRECTORY\_DOCUMENTS),"myfile.txt");

f.createNewFile();

FileOutputStream fout=new

FileOutputStream(f);

fout.write(message.getBytes()); fout.close();

Toast.makeText(getBaseContext(),"Data Written in SDCARD",Toast.LENGTH\_LONG).show();

}

catch (Exception e)

{

Toast.makeText(getBaseContext(),e.getMessage(),Toast.LENGTH\_LONG).show();

}

}

});

read.setOnClickListener(new View.OnClickListener()

{

@Override

public void onClick(View v)

{

String message;

String buf = "";

try

{

File f = new File(getExternalFilesDir(null),"/sdcard/myfile.txt");

FileInputStream fin = new FileInputStream(f);

BufferedReader br = new BufferedReader(new InputStreamReader(fin));

while ((message = br.readLine()) != null) {

buf += message;

}

e1.setText(buf);

br.close();

fin.close();

Toast.makeText(getBaseContext(),"Data Received from SDCARD",Toast.LENGTH\_LONG).show();

}

catch (Exception e)

{

Toast.makeText(getBaseContext(),

e.getMessage(), Toast.LENGTH\_LONG).show();

}

}

});

clear.setOnClickListener(new View.OnClickListener()

{

@Override

public void onClick(View v)

{

e1.setText("");

}

});

}

}

**Manifest:**

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

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

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

<uses-permission android:name="android.permission.WRITE\_EXTERNAL\_STORAGE"></uses-permission>

<uses-permission android:name="android.permission.READ\_EXTERNAL\_STORAGE"></uses-permission>

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules"

android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:roundIcon="@mipmap/ic\_launcher\_round"

android:supportsRtl="true"

android:theme="@style/Theme.Ex6"

tools:targetApi="31">

<activity

android:name=".MainActivity"

android:exported="true">

<intent-filter>

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

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

</intent-filter>

</activity>

</application>

</manifest>

**EMAIL**

**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">

<RelativeLayout

android:layout\_width="368dp"

android:layout\_height="495dp"

tools:layout\_editor\_absoluteX="8dp"

tools:layout\_editor\_absoluteY="8dp">

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignParentStart="true"

android:layout\_alignParentTop="true"

android:layout\_marginStart="23dp"

android:layout\_marginTop="51dp"

android:text="Recipient"

android:textSize="18sp"

android:textStyle="bold" />

<EditText

android:id="@+id/e1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignParentTop="true"

android:layout\_marginStart="35dp"

android:layout\_marginTop="37dp"

android:layout\_toEndOf="@+id/textView"

android:ems="10"

android:inputType="textPersonName" />

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@+id/e1"

android:layout\_marginTop="39dp"

android:layout\_toStartOf="@+id/e1"

android:text="Subject"

android:textSize="18sp"

android:textStyle="bold" />

<TextView

android:id="@+id/textView3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/textView2"

android:layout\_below="@+id/textView2"

android:layout\_marginTop="43dp"

android:text="Message"

android:textSize="18sp"

android:textStyle="bold" />

<EditText

android:id="@+id/e2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignStart="@+id/e1"

android:layout\_below="@+id/e1"

android:layout\_marginTop="26dp"

android:ems="10"

android:inputType="textPersonName" />

<EditText

android:id="@+id/e3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_alignBottom="@+id/textView3"

android:layout\_alignStart="@+id/e2"

android:ems="10"

android:inputType="textPersonName" />

<Button

android:id="@+id/b"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@+id/textView3"

android:layout\_marginTop="48dp"

android:layout\_toEndOf="@+id/textView3"

android:text="SEND" />

</RelativeLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

**JAVA:**

package com.example.ex9;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

Button b;

EditText e1,e2,e3;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

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

e1 = (EditText) findViewById( R.id.e1 );

e2 = (EditText) findViewById( R.id.e2 );

e3 = (EditText) findViewById( R.id.e3 );

b.setOnClickListener( new View.OnClickListener() {

@Override

public void onClick(View v) {

String to = e1.getText().toString();

String subject = e2.getText().toString();

String message = e3.getText().toString();

Intent i = new Intent( Intent.ACTION\_SEND );

i.putExtra( Intent.EXTRA\_EMAIL, new String[]{to}

); i.putExtra( Intent.EXTRA\_SUBJECT, subject );

i.putExtra( Intent.EXTRA\_TEXT, message );

i.setType( "message/rfc822" );

startActivity( Intent.createChooser( i, "Choose EMail App" ) );

}

} );

}

}

**Manifest.XML:**

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

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

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

<application

android:allowBackup="true"

android:dataExtractionRules="@xml/data\_extraction\_rules"

android:fullBackupContent="@xml/backup\_rules"

android:icon="@mipmap/ic\_launcher"

android:label="@string/app\_name"

android:roundIcon="@mipmap/ic\_launcher\_round"

android:supportsRtl="true"

android:theme="@style/Theme.Ex9"

tools:targetApi="34">

<activity

android:name=".MainActivity2"

android:exported="false" />

<activity

android:name=".MainActivity"

android:exported="true">

<intent-filter>

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

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

<!--<action android:name="android.intent.action.SEND" />

<category android:name="android.intent.category.DEFAULT" />

<data android:mimeType="message/rfc822" />-->

</intent-filter>

</activity>

</application>

</manifest>

**XML2& JAVA2 are Blank.**

**NOTIFICATION MANAGER:**

**XML :**

<?xml version="1.0" encoding="utf-8"?> <android.support.constraint.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android" xmlns:app="http://schemas.android.com/apk/res-auto" xmlns:tools="http://schemas.android.com/tools" android:layout\_width="match\_parent" android:layout\_height="match\_parent"

tools:context="e.student.alertonreceivingmsg.MainActivity">

<RelativeLayout android:layout\_width="368dp" android:layout\_height="495dp" tools:layout\_editor\_absoluteX="8dp" tools:layout\_editor\_absoluteY="8dp">

<TextView android:id="@+id/textView" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_alignParentTop="true" android:layout\_centerHorizontal="true" android:layout\_marginTop="22dp" android:text="Message" android:textColor="@color/colorPrimary" android:textSize="24sp" android:textStyle="bold" />

<EditText android:id="@+id/e" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_below="@+id/textView" android:layout\_centerHorizontal="true" android:layout\_marginTop="40dp" android:ems="10"

android:inputType="textPersonName" />

<Button android:id="@+id/b" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_alignStart="@+id/textView" android:layout\_below="@+id/e" android:layout\_marginTop="72dp" android:text="notify" />

</RelativeLayout>

</android.support.constraint.ConstraintLayout>

**XML2:**

<?xml version="1.0" encoding="utf-8"?> <android.support.constraint.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android" xmlns:app="http://schemas.android.com/apk/res-auto" xmlns:tools="http://schemas.android.com/tools" android:layout\_width="match\_parent" android:layout\_height="match\_parent"

tools:context="e.student.notificationmanager.Main2Activity">

</android.support.constraint.ConstraintLayout>

**JAVA1:**

package e.student.alertonreceivingmsg; import android.app.Notification; import android.app.NotificationManager; import android.app.PendingIntent; import android.content.Intent;

import android.support.v7.app.AppCompatActivity; import android.os.Bundle; import android.view.View; import android.widget.Button; import android.widget.EditText;

public class MainActivity extends AppCompatActivity {

Button b;

EditText e; @Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate( savedInstanceState ); setContentView(

R.layout.activity\_main ); b=(Button)findViewById(

R.id.b ); e=(EditText)findViewById( R.id.e );

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

public void onClick(View v) {

Intent intent=new Intent( MainActivity.this,Main2Activity.class );

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

Notification notification = new Notification.Builder( MainActivity.this )

.setContentTitle( "New Message")

.setContentText( e.getText().toString())

.setSmallIcon( R.mipmap.ic\_launcher)

.setContentIntent( pendingIntent ).build();

NotificationManager manager = (NotificationManager) getSystemService( NOTIFICATION\_SERVICE );

notification.flags |= Notification.FLAG\_AUTO\_CANCEL; manager.notify( 0, notification );

}

} );

}

}

**JAVA2:**

package e.student.notificationmanager;

import android.support.v7.app.AppCompatActivity;

import android.os.Bundle;

public class Main2Activity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState)

{ super.onCreate( savedInstanceState );

setContentView( R.layout.activity\_main2 );

} }

**EX NO:** 8—GPS LOCATION TRACKING.

**Activity\_main.xml:**

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_width="match\_parent"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <RelativeLayout  
 android:id="@+id/relativeLayout"  
 android:layout\_width="0dp"  
 android:layout\_height="495dp"  
 android:layout\_marginStart="16dp"  
 android:layout\_marginTop="28dp"  
 android:layout\_marginEnd="16dp"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent">  
  
 <TextView  
 android:id="@+id/tv"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="10mm"  
 android:layout\_alignParentTop="true"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginTop="117dp"  
 android:text="GPS" />  
  
 <TextView  
 android:id="@+id/l1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/tv"  
 android:layout\_alignParentStart="true"  
 android:layout\_marginStart="41dp"  
 android:layout\_marginTop="45dp"  
 android:text="latitude" />  
  
 <TextView  
 android:id="@+id/l2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/l1"  
 android:layout\_alignEnd="@+id/l1"  
 android:layout\_marginTop="66dp"  
 android:layout\_marginEnd="-3dp"  
 android:text="longitude" />  
  
 <EditText  
 android:id="@+id/e1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_above="@+id/l2"  
 android:layout\_marginStart="20dp"  
 android:layout\_toEndOf="@+id/l1"  
 android:ems="10"  
 android:inputType="textPersonName" />  
  
 <EditText  
 android:id="@+id/e2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/e1"  
 android:layout\_alignEnd="@+id/e1"  
 android:layout\_marginTop="48dp"  
 android:layout\_marginEnd="-5dp"  
 android:ems="10"  
 android:inputType="textPersonName" />  
  
 <Button  
 android:id="@+id/b1"  
 android:layout\_width="130dp"  
 android:layout\_height="wrap\_content"  
 android:layout\_below="@+id/e2"  
 android:layout\_alignStart="@+id/e2"  
 android:layout\_marginStart="10dp"  
 android:layout\_marginTop="97dp"  
 android:text="locate" />  
 </RelativeLayout>  
</androidx.constraintlayout.widget.ConstraintLayout>

**Activity\_main2.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=".MainActivity2">  
  
 <RelativeLayout  
 android:layout\_width="436dp"  
 android:layout\_height="702dp"  
 tools:layout\_editor\_absoluteX="-2dp"  
 tools:layout\_editor\_absoluteY="28dp">  
  
 <WebView  
 android:id="@+id/w1"  
 android:layout\_width="410dp"  
 android:layout\_height="457dp"  
 android:layout\_alignParentEnd="true"  
 android:layout\_centerHorizontal="true"  
 android:layout\_marginEnd="25dp" />  
 </RelativeLayout>  
  
</androidx.constraintlayout.widget.ConstraintLayout>

**MainActivity.java:**

package com.example.ex8;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
  
import android.os.Bundle; import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
  
public class MainActivity extends AppCompatActivity {  
 Button b1;  
 EditText e1,e2;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 b1=(Button)findViewById( R.id.*b1* );  
 e1=(EditText)findViewById( R.id.*e1* );  
 e2=(EditText)findViewById( R.id.*e2* );  
 b1.setOnClickListener( new View.OnClickListener()  
 { @Override  
 public void onClick(View v) {  
 Intent i=new Intent( getApplicationContext(),MainActivity2.class );  
 i.putExtra( "e1",e1.getText().toString() ); i.putExtra(  
 "e2",e2.getText().toString() );  
 startActivity( i );  
 }  
 } );  
 }  
}

**MainActivity2.java:**

package com.example.ex8;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.webkit.WebView;  
import android.webkit.WebViewClient;  
  
public class MainActivity2 extends AppCompatActivity {  
 String lat,long1;  
 WebView w1;  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main2*);  
 Bundle  
 b=getIntent().getExtras();  
 lat=b.getString( "e1" );  
 long1=b.getString( "e2" );  
 w1=(WebView)findViewById( R.id.*w1* );  
 w1.setWebViewClient( new WebViewClient() );  
 w1.getSettings().setJavaScriptEnabled( true );  
 String url="https://www.google.com/maps/search/?api=1&query="+lat+","+long1;  
 w1.loadUrl(url);  
 }  
}

**EX NO:** 1--GUI COMPONENTS , FONT AND COLOURS.

**Activity\_main.xml:**

<?xml version="1.0" encoding="utf-8"?>  
<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="http://schemas.android.com/apk/res/android"  
 xmlns:app="http://schemas.android.com/apk/res-auto"  
 xmlns:tools="http://schemas.android.com/tools"  
 android:layout\_height="match\_parent"  
 tools:context=".MainActivity">  
  
 <TextView  
 android:id="@+id/textView"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Hello World!"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.255" />  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="52dp"  
 android:text="Change Size"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.515"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toBottomOf="@+id/textView" />  
  
 <Button  
 android:id="@+id/button2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginStart="4dp"  
 android:layout\_marginTop="40dp"  
 android:text="Change Colour"  
 app:layout\_constraintStart\_toStartOf="@+id/button"  
 app:layout\_constraintTop\_toBottomOf="@+id/button" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

**MainActivity.java:**

package com.example.exp1;  
  
import androidx.appcompat.app.AppCompatActivity;  
import android.graphics.Color;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.TextView;  
import android.widget.Button;  
public class MainActivity extends AppCompatActivity {  
 TextView t;  
 Button b1,b2;  
 int ch=1;  
 float font=25;  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 t=(TextView)findViewById(R.id.*textView*);  
 b1=(Button)findViewById(R.id.*button*);  
 b2=(Button)findViewById(R.id.*button2*);  
 b1.setOnClickListener(new View.OnClickListener() {  
 public void onClick(View v) {  
 t.setTextSize( font );  
 font = font +5;  
 if (font == 60)  
 font = 25;  
 }  
 });  
 b2.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 switch(ch) {  
 case 1:  
 t.setTextColor( Color.*RED* );  
 break;  
 case 2:  
 t.setTextColor( Color.*GREEN* );  
 break;  
 case 3:  
 t.setTextColor( Color.*BLUE* );  
 break;  
 case 4:  
 t.setTextColor( Color.*CYAN* );  
 break;  
 case 5:  
 t.setTextColor( Color.*YELLOW* );  
 break;  
 case 6:  
 t.setTextColor( Color.*MAGENTA* );  
 break;  
 }  
 ch++;  
 if(ch == 7)  
 ch = 1;  
 }  
 });  
 }  
}