20MCA243 MOBILE APPLICATION DEVELOPMENT LAB

*Lab Report Submitted By*

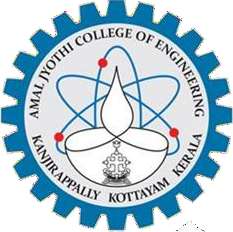
**VIJAYALAKSHMI M R Reg. No.: AJC20MCA-2084**

*In Partial fulfillment for the Award of the Degree Of*

**MASTER OF COMPUTER APPLICATIONS (2 Year)**

**(MCA)**

**APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**



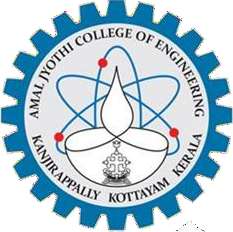
**AMAL JYOTHI COLLEGE OF ENGINEERING KANJIRAPPALLY**

[Affiliated to APJ Abdul Kalam Technological University, Kerala. Approved by AICTE, Accredited by NAAC with ‘A’ grade. Koovapally, Kanjirappally, Kottayam, Kerala – 686518]

**2020-2022**

**DEPARTMENT OF COMPUTER APPLICATIONS AMAL JYOTHI COLLEGE OF ENGINEERING**

**KANJIRAPPALLY**



# CERTIFICATE

This is to certify that the lab report, “**AJC20MCA243 MOBILE APPLICATION DEVELOPMENT LAB”** is the bonafide work of  **VIJAYALAKSHMI M R(Reg.No:AJC20MCA-2084)** in partial fulfillment of the requirements for the award of the Degree of Master of Computer Applications under APJ Abdul Kalam Technological University during the year 2021-22.

Ms. Sona Maria Sebastian

Staff In-Charge

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# Program 1

**Aim:** Program to design a Login Form with username and password using LinearLayout and toast valid credentials.

# XML Code:

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

<LinearLayout xmlns:android=["ht](http://schemas.android.com/apk/res/android)t[p://schemas.android.com/apk/res/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" xmlns:card\_view=["http:/](http://schemas.android.com/apk/res-auto)/[schemas.android.com/apk/res-auto](http://schemas.android.com/apk/res-auto)" tools:context=".MainActivity"

android:orientation="vertical" android:background="#000">

<androidx.cardview.widget.CardView android:layout\_margin="64dp" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" card\_view:cardCornerRadius="8dp" card\_view:cardElevation="8dp" android:background="#fff">

<LinearLayout android:layout\_width="match\_parent"

android:layout\_height="wrap\_content" android:orientation="vertical" android:padding="24dp">

<TextView android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:text="Login" android:textSize="36sp" android:textAlignment="center" android:layout\_gravity="center\_horizontal" />

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:textSize="22sp" android:text="username" android:textColor="@color/black"/>

<EditText android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:inputType="text" android:id="@+id/activity\_main\_usernameEditText" />

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:textSize="22sp" android:text="password" android:textColor="@color/black"/>

<EditText android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:inputType="textPassword" android:id="@+id/activity\_main\_passwordEditText" />

<Button

android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:id="@+id/activity\_main\_loginButton" android:text="login" android:textSize="22sp"/>

</LinearLayout>

</androidx.cardview.widget.CardView>

</LinearLayout>

# Java Code:

package com.example.myapplication;

import androidx.appcompat.app.AppCompatActivity;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 {private EditText usernameEditText;

private EditText passwordEditText; private Button loginButton;

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main);

usernameEditText = findViewById(R.id.activity\_main\_usernameEditText); passwordEditText = findViewById(R.id.activity\_main\_passwordEditText); loginButton = findViewById(R.id.activity\_main\_loginButton);

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

public void onClick(View v) {

if (usernameEditText.getText().length() > 0 && passwordEditText.getText().length() > 0) {

String toastMessage = "Username: " + usernameEditText.getText().toString() + ", Password: " + passwordEditText.getText().toString();

Toast.makeText(getApplicationContext(), toastMessage, Toast.LENGTH\_SHORT).show();

} else {

String toastMessage = "Username or Password are not populated"; Toast.makeText(getApplicationContext(), toastMessage,

Toast.LENGTH\_SHORT).show();

}

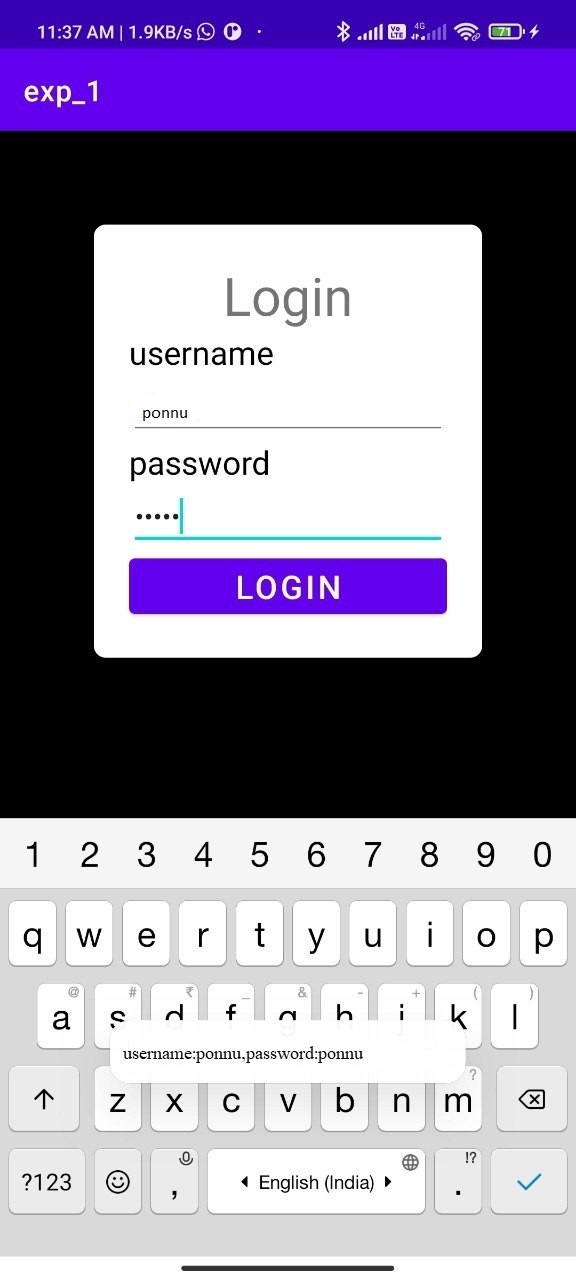
}

});

}

}

# Output:



**Program: 2**

Aim : Write a program that demonstrates Activity Lifecycle.

# XML File

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="[http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android)

xmlns:app="[http://schemas.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:tools="[http://schemas.android.com/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" />

</androidx.constraintlayout.widget.ConstraintLayout>

# Java File

package com.example.activitylifecycle;

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

import android.util.Log;

public class MainActivity extends AppCompatActivity { @Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main); Log.d("Lifecycle", "onCreate invoked");

}

@Override

protected void onStart() { super.onStart();

Log.d("Lifecycle", "onStart Invoked");

}

@Override

protected void onResume() { super.onResume();

Log.d("Lifecycle", "onStart Invoked");

}

@Override

protected void onPause() { super.onPause();

Log.d("Lifecycle", "onPause Invoked");

}

@Override

protected void onStop() { super.onStop();

Log.d("Lifecycle", "onStop Invoked");

}

@Override

protected void onRestart() { super.onRestart();

Log.d("Lifecycle", "onRestart Invoked");

}

@Override

protected void onDestroy() { super.onDestroy();

Log.d("Lifecycle", "onDestroy Invoked");

}

}

Output:

Text

Description automatically generated

# Program no: 3

**Aim:** Implementing basic arithmetic operations of a simple calculator

# Java Code:

package com.example.calculator;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
  
import android.widget.EditText;  
import android.widget.TextView;  
  
public class MainActivity extends AppCompatActivity {  
  
 private EditText num1;  
 private EditText num2;  
 private Button add;  
 private Button sub;  
 private Button mul;  
 private Button div;  
 private TextView result;  
  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
 num1=(EditText) findViewById(R.id.*etnum1*);  
 num2=(EditText) findViewById(R.id.*etnum2*);  
 add=(Button) findViewById(R.id.*btnadd*);  
 sub=(Button) findViewById(R.id.*btnsub*);  
 mul=(Button) findViewById(R.id.*btnmul*);  
 div=(Button) findViewById(R.id.*btndiv*);  
 result=(TextView) findViewById(R.id.*tvanswer*);  
  
 add.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 int number1=Integer.*parseInt*(num1.getText().toString());  
 int number2=Integer.*parseInt*(num2.getText().toString());  
 int sum = number1 + number2;  
  
 result.setText(String.*valueOf*(sum));  
  
 }  
  
 });  
 sub.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 int number1=Integer.*parseInt*(num1.getText().toString());  
 int number2=Integer.*parseInt*(num2.getText().toString());  
 int sum = number1 - number2;  
  
 result.setText(String.*valueOf*(sum));  
  
 }  
  
 });  
 mul.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 int number1=Integer.*parseInt*(num1.getText().toString());  
 int number2=Integer.*parseInt*(num2.getText().toString());  
 int sum = number1 \* number2;  
  
 result.setText(String.*valueOf*(sum));  
  
 }  
  
 });  
 div.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 int number1=Integer.*parseInt*(num1.getText().toString());  
 int number2=Integer.*parseInt*(num2.getText().toString());  
 int sum = number1 / number2;  
  
 result.setText(String.*valueOf*(sum));  
  
 }  
  
 });  
  
 }  
}

# XML Code:

<?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/textView2"  
 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" />  
  
 <EditText  
 android:id="@+id/etnum1"  
 android:layout\_width="158dp"  
 android:layout\_height="43dp"  
 android:layout\_marginEnd="32dp"  
 android:ems="10"  
 android:inputType="number"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.0"  
 app:layout\_constraintStart\_toStartOf="@+id/button4"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.053" />  
  
 <EditText  
 android:id="@+id/etnum2"  
 android:layout\_width="166dp"  
 android:layout\_height="43dp"  
 android:ems="10"  
 android:inputType="number"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.066"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.053" />  
  
 <Button  
 android:id="@+id/btnadd"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginTop="216dp"  
 android:text="Addition"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.052"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
 <Button  
 android:id="@+id/btnsub"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Subtraction"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.661"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.339" />  
  
 <Button  
 android:id="@+id/btnmul"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Multiplication"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.063"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.437" />  
  
 <Button  
 android:id="@+id/btndiv"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Division"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.704"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.437" />  
  
 <TextView  
 android:id="@+id/tvanswer"  
 android:layout\_width="172dp"  
 android:layout\_height="34dp"  
 android:text="Answer is "  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.497"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.153" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

# Output:

# ADD SUBTRACT

Graphical user interface, application, Teams

Description automatically generatedGraphical user interface, application, Teams

Description automatically generated

**MULTIPLY DIVISION**

Graphical user interface, application, Teams

Description automatically generatedGraphical user interface, text, application, Teams

Description automatically generated

**Program no: 4**

**Aim** Implement validations on various UI controls

# XML Code:

<?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"  
 android:orientation="vertical"  
 tools:context=".MainActivity">  
  
 <TextView  
 android:id="@+id/textview"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.047"  
 app:layout\_constraintLeft\_toLeftOf="parent"  
 app:layout\_constraintRight\_toRightOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.219" />  
  
  
 <Button  
 android:id="@+id/button"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:text="Add"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.498"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.383" />  
  
 <EditText  
 android:id="@+id/editTextNumber"  
 android:layout\_width="145dp"  
 android:layout\_height="73dp"  
 android:ems="10"  
 android:inputType="number"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.153"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.223" />  
  
 <EditText  
 android:id="@+id/editTextNumber2"  
 android:layout\_width="140dp"  
 android:layout\_height="71dp"  
 android:ems="10"  
 android:inputType="number"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.911"  
 app:layout\_constraintStart\_toStartOf="@+id/editTextNumber"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.221" />  
  
 <TextView  
 android:id="@+id/textView4"  
 android:layout\_width="98dp"  
 android:layout\_height="51dp"  
 android:text="Answer is"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
  
  
</androidx.constraintlayout.widget.ConstraintLayout>

# Java Code:

package com.example.addintegers;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
import android.widget.EditText;  
import android.widget.TextView;  
import android.widget.Toast;  
  
public class MainActivity extends AppCompatActivity {  
 Button b;  
 TextView t;  
 EditText e,a;  
  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 b=findViewById(R.id.*button*);  
 t=findViewById(R.id.*textView4*);  
 e=findViewById(R.id.*editTextNumber*);  
 a=findViewById(R.id.*editTextNumber2*);  
 b.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 if(e.length()>5)  
 {  
 e.setError("to long");  
 }  
 else if(a.length()>5)  
 {  
 a.setError("to long");  
 }  
 else if(e.length()<1) {  
 e.setError("Enter no");  
 }  
 else if(a.length()<1)  
 {  
 a.setError("Enter no");  
 }  
 else  
 {  
 int num1 = Integer.*parseInt*(e.getText().toString());  
 int num2 = Integer.*parseInt*(a.getText().toString());  
 int sum = num1 + num2;  
 t.setText(Integer.*toString*(sum));  
 }  
 }  
 });  
  
 }  
}

# Output:

Graphical user interface, application, Teams

Description automatically generated

**Program 5**

**Aim:** Design a registration activity and store registration details in local memory of phone using Intents and SharedPreferences.

# 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">

# <EditText

# android:id="@+id/editText"

# android:layout\_width="385dp"

# android:layout\_height="53dp"

# android:ems="10"

# android:inputType="textPersonName"

# android:text=""

# app:layout\_constraintBottom\_toBottomOf="parent"

# app:layout\_constraintEnd\_toEndOf="parent"

# app:layout\_constraintHorizontal\_bias="0.029"

# app:layout\_constraintStart\_toStartOf="parent"

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

# app:layout\_constraintVertical\_bias="0.023" />

# <Button

# android:id="@+id/button"

# android:layout\_width="wrap\_content"

# android:layout\_height="wrap\_content"

# android:text="Button"

# app:layout\_constraintBottom\_toBottomOf="parent"

# app:layout\_constraintEnd\_toEndOf="parent"

# app:layout\_constraintHorizontal\_bias="0.003"

# app:layout\_constraintStart\_toStartOf="parent"

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

# app:layout\_constraintVertical\_bias="0.101" />

# </androidx.constraintlayout.widget.ConstraintLayout>

# Acivity\_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">

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="TextView"

tools:layout\_editor\_absoluteX="162dp"

tools:layout\_editor\_absoluteY="187dp" />

</androidx.constraintlayout.widget.ConstraintLayout>

<TextView android:id="@+id/textView2" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:text="Data using Shared Preference" android:textSize="25dp" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.351" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVertical\_bias="0.089" />

<TextView android:id="@+id/textView3" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Data using Intents" android:textSize="25dp"

app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintHorizontal\_bias="0.351" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVertical\_bias="0.449" />

</androidx.constraintlayout.widget.ConstraintLayout>

# MainActivity.java

package com.example.session;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

EditText t1;

Button b;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

t1=findViewById(R.id.editText);

b=findViewById(R.id.button);

SharedPreferences sp=getSharedPreferences("share",MODE\_PRIVATE);

b.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String val1=t1.getText().toString();

sp.edit().putString("value",val1).commit();

Intent i=new Intent(MainActivity.this,MainActivity2.class);

startActivity(i);

}

});

}

}

# MainActivity2.java

package com.example.session;

import androidx.appcompat.app.AppCompatActivity;

import android.content.SharedPreferences;

import android.os.Bundle;

import android.widget.TextView;

public class MainActivity2 extends AppCompatActivity {

TextView v1;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main2);

v1=findViewById(R.id.textView2);

SharedPreferences sp=getSharedPreferences("share",MODE\_PRIVATE);

String svalue=sp.getString("value","no data found");

v1.setText(svalue);

}

}

# Output

A picture containing application

Description automatically generated

A picture containing shape

Description automatically generated

**Program no: 6**

**Aim:** Design a simple Calculator using GridLayout and Cascaded LinearLayout

# XML Code:

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

<LinearLayout xmlns:android=["ht](http://schemas.android.com/apk/res/android)t[p://schemas.android.com/apk/res/android](http://schemas.android.com/apk/res/android)" xmlns:app=["ht](http://schemas.android.com/apk/res-auto)t[p://schemas.android.com/apk/res-auto](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:background="#323030"

android:layout\_gravity="bottom" android:gravity="bottom" android:orientation="vertical" tools:context=".MainActivity">

<LinearLayout android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:orientation="vertical">

<LinearLayout android:layout\_width="match\_parent"

android:layout\_height="wrap\_content" android:layout\_gravity="end" android:orientation="vertical">

<TextView android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:layout\_marginEnd="20dp" android:text="9+10" android:textAlignment="textEnd" android:textColor="@color/white" android:textSize="40dp" />

<TextView android:layout\_width="match\_parent" android:layout\_height="wrap\_content" android:layout\_marginEnd="20dp" android:text="=19" android:textAlignment="textEnd" android:textColor="@color/white" android:textSize="40dp" />

</LinearLayout>

<GridLayout android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:layout\_weight="1" android:columnCount="4" android:gravity="bottom" android:rowCount="4">

<Button

android:id="@+id/b9" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="9" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/b8" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="8" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/b7" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="7" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/bmult" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:layout\_margin="10dp" android:background="#F86605" android:text="x"android:textColor="@color/white" android:textSize="18dp" />

<Button

android:id="@+id/b6" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="6" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/b5" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="5" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/b4" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="4" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/bdiv" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="#F86605" android:text="/" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/b3" android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="3" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/b2" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="2" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/b1" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="1"

android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/bminus" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="#F86605" android:text="-" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/b0" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="0" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/b." android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="." android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/bequal" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_margin="10dp" android:background="@drawable/bg\_button" android:text="=" android:textColor="@color/white" android:textSize="25dp" />

<Button

android:id="@+id/bplus" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content"

android:layout\_margin="10dp" android:background="#F86605" android:text="+" android:textColor="@color/white" android:textSize="25dp" />

</GridLayout>

</LinearLayout>

</LinearLayout>

# Java Code:

package com.example.myapplication;

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); } }

# bg\_button.xml:

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

<shape xmlns:android=["http](http://schemas.android.com/apk/res/android):[//schemas.android.com/apk/res/android">](http://schemas.android.com/apk/res/android)

<corners android:radius="100dp"/>

</shape>

# Output



**Program no: 7**

**Aim:** Create a Facebook page using RelativeLayout; set properties using. xmlfile

# Activity\_main.xml

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

<RelativeLayout xmlns:android="[http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app="[http://schemas.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:tools="[http://schemas.android.com/tools"](http://schemas.android.com/tools) android:layout\_width="match\_parent" android:layout\_height="match\_parent"

android:background="#29487D" tools:context=".MainActivity">

<TextView android:layout\_width="341dp" android:layout\_height="96dp" android:layout\_alignParentStart="true" android:layout\_alignParentEnd="true"

android:layout\_alignParentBottom="true" android:layout\_marginBottom="474dp" android:fontFamily="helvetica" android:text="facebook" android:textAlignment="center" android:textColor="@color/white" android:textSize="46dp" android:textStyle="bold"

app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintLeft\_toLeftOf="parent" app:layout\_constraintRight\_toRightOf="parent" app:layout\_constraintTop\_toTopOf="parent" app:layout\_constraintVertical\_bias="0.968" />

<Button

android:id="@+id/b1" android:layout\_width="300dp" android:layout\_height="wrap\_content" android:layout\_marginLeft="50dp" android:layout\_marginTop="355dp" android:text="LOG IN" />

<EditText android:id="@+id/et1" android:layout\_width="300dp"

android:layout\_height="wrap\_content" android:ems="10"

android:layout\_marginLeft="50dp" android:layout\_marginTop="250dp" android:inputType="textPersonName" android:hint="email or password" />

<EditText android:id="@+id/et2" android:layout\_width="300dp"

android:layout\_height="wrap\_content" android:ems="10" android:layout\_marginLeft="50dp" android:layout\_marginTop="300dp" android:inputType="textPersonName" android:hint="password" />

<TextView android:id="@+id/textView2" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginLeft="105dp" android:layout\_marginTop="430dp"

android:text="Don't have an account? Sign Up." android:textAlignment="center"/>

<TextView android:id="@+id/textView3" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:layout\_marginLeft="150dp" android:layout\_marginTop="408dp" android:text="Forgot password" android:textAlignment="center"/>

</RelativeLayout>

# MainActivity.java

package com.example.facebook;

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;

import android.widget.TextView;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

Button b1,b2;

TextView t1,t2;

EditText e1,e2;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

t1=findViewById(R.id.textView);

t2=findViewById(R.id.textView2);

e1=findViewById(R.id.editText1);

e2=findViewById(R.id.editText2);

b1=findViewById(R.id.button);

b2=findViewById(R.id.button2);

b1.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

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

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

if(uname.isEmpty()){

Toast.makeText(MainActivity.this, "Enter Username", Toast.LENGTH\_SHORT).show();

}

else if(passw.isEmpty()){

Toast.makeText(MainActivity.this, "Enter Password", Toast.LENGTH\_SHORT).show();

}

else{

Intent j=new Intent(MainActivity.this,MainActivity3.class);

if(uname.equals("karthika")&& passw.equals("123456")){

j.putExtra("name",uname);

startActivity(j);

}

else {

Toast.makeText(MainActivity.this, "Invalid user", Toast.LENGTH\_SHORT).show();

}

}

}

});

b2.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

Intent i=new Intent(MainActivity.this,MainActivity2.class);

startActivity(i);

}

});

}

}

# Output

# C:\Users\User\Desktop\hh.png

# Graphical user interface, text, application Description automatically generated

**Program no: 8**

**Aim:** Develop an application that toggles image using FrameLayout

# Activity\_main.xml

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

<FrameLayout 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">

<FrameLayout

android:layout\_width="match\_parent"

android:layout\_height="match\_parent">

<ImageView

android:id="@+id/imageView"

android:layout\_width="match\_parent"

android:layout\_height="483dp"

app:srcCompat="@drawable/dow" />

<ImageView

android:id="@+id/imageView2"

android:layout\_width="match\_parent"

android:layout\_height="431dp"

app:srcCompat="@drawable/ee" />

</FrameLayout>

</FrameLayout>

# MainActivity.java

package com.example.framelayout;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

ImageView i1,i2;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

i1=findViewById(R.id.imageView);

i2=findViewById(R.id.imageView2);

i2.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

i1.bringToFront();

}

});

i1.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

i2.bringToFront();

}

});

**OUTPUT**

A screenshot of a cell phone

Description automatically generated with medium confidenceA screenshot of a cartoon character

Description automatically generated with medium confidence

**Program 9**

Aim : Implement Adapters and perform exception handling

# 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">

<ListView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/exception1">

</ListView>

</androidx.constraintlayout.widget.ConstraintLayout>

# MainActivity.java

package com.example.exception;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.telephony.ims.ImsMmTelManager;

import android.widget.Toast;

import java.util.ArrayList;

import java.util.List;

public class MainActivity extends AppCompatActivity {

List<String> list=new ArrayList();

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

list.add("ITEM 1");

list.add("ITEM 2");

list.add("ITEM 3");

list.add("ITEM 4");

for (int i=0;i<6;i++){

try {

list.get(i);

}catch (Exception e){

Toast.makeText(this,"exception caught",Toast.LENGTH\_SHORT).show();

}

}

}

**OUTPUT:**

A screenshot of a computer

Description automatically generated with low confidence

**Program no: 10**

**Aim:** Implement Intent to navigate between multiple activities.

**XML CODE:**

<?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:id="@+id/button"  
 android:layout\_width="110dp"  
 android:layout\_height="52dp"  
 android:text="Button"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.498"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.431" />  
  
</androidx.constraintlayout.widget.ConstraintLayout>

**Java Code**

package com.example.implicit;  
  
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 b;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
  
  
 b=findViewById(R.id.*button*);  
 b.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent i=new Intent(Intent.*ACTION\_VIEW*, Uri.*parse*("https://www.google.com/"));  
 startActivity(i);  
  
 }  
 });  
 }  
}

# OUTPUT:

# Graphical user interface, application, Teams Description automatically generatedGraphical user interface, text, application Description automatically generated

**Program no: 11**

**Aim:** Develop application that works with explicit intents.

**Activity\_main1.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:id="@+id/b1"  
 android:layout\_width="244dp"  
 android:layout\_height="119dp"  
 android:text="Button"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.425"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.482" />  
  
 <EditText  
 android:id="@+id/e2"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:ems="10"  
 android:inputType="textEmailAddress"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.398"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.333" />  
  
 <EditText  
 android:id="@+id/e1"  
 android:layout\_width="wrap\_content"  
 android:layout\_height="wrap\_content"  
 android:ems="10"  
 android:inputType="textPersonName"  
 android:text="Name"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintHorizontal\_bias="0.398"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent"  
 app:layout\_constraintVertical\_bias="0.256" />  
</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=".second">  
  
 <TextView  
 android:id="@+id/t1"  
 android:layout\_width="179dp"  
 android:layout\_height="63dp"  
 android:text="TextView"  
 app:layout\_constraintBottom\_toBottomOf="parent"  
 app:layout\_constraintEnd\_toEndOf="parent"  
 app:layout\_constraintStart\_toStartOf="parent"  
 app:layout\_constraintTop\_toTopOf="parent" />  
</androidx.constraintlayout.widget.ConstraintLayout>

**MainActivity1.java**

package com.example.first;  
  
import androidx.appcompat.app.ActionBar;  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.view.View;  
import android.widget.Button;  
  
public class MainActivity extends AppCompatActivity {  
 Button btn;  
  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_main*);  
 ActionBar action=getSupportActionBar();  
 action.setTitle("First Activity");  
  
 btn=findViewById(R.id.*button*);  
 btn.setOnClickListener(new View.OnClickListener() {  
 @Override  
 public void onClick(View v) {  
 Intent i=new Intent(MainActivity.this,MainActivity2.class);  
 startActivity(i);  
  
 }  
 });  
 }  
}

**MainActivity2.java**

package com.example.first;  
  
import androidx.appcompat.app.AppCompatActivity;  
  
import android.content.Intent;  
import android.os.Bundle;  
import android.widget.TextView;  
  
public class second extends AppCompatActivity {  
 TextView textView;  
  
 @Override  
 protected void onCreate(Bundle savedInstanceState) {  
 super.onCreate(savedInstanceState);  
 setContentView(R.layout.*activity\_second*);  
 TextView textView=findViewById(R.id.*t1*);  
 Intent i=getIntent();  
 String intentName=i.getStringExtra("firstname");  
 String ename=i.getStringExtra("email");  
 textView.setText(""+intentName+"\n"+ename);  
  
 }  
}

**OUTPUT:**

Graphical user interface, application, Teams

Description automatically generatedA picture containing chart

Description automatically generated

**Program no: 12**

**Aim:** Implement Options Menu to navigate to activities

# XML Code:

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

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

<item android:id="@+id/item1" android:title="about" android:icon="@drawable/download"/>

<item android:id="@+id/item2" android:title="help"/>

</menu> Activitymain.xml

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="<http://schemas.android.com/apk/res/android>"

xmlns:app=["ht](http://schemas.android.com/apk/res-auto)t[p://schemas.android.com/apk/res-auto](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" />

</androidx.constraintlayout.widget.ConstraintLayout>

# Java Code:

package com.example.myapplic;

import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.Menu;

import android.view.MenuItem;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

}

@Override

public boolean onCreateOptionsMenu(Menu menu) {

getMenuInflater().inflate(R.menu.menu,menu);

return true;

}

@Override

public boolean onOptionsItemSelected(@NonNull MenuItem item) {

switch (item.getItemId())

{

case R.id.item4:

Toast.makeText(getApplicationContext(), "Good to see you", Toast.LENGTH\_LONG).show();

return true;

case R.id.item5:

Toast.makeText(getApplicationContext(), "Good to help you", Toast.LENGTH\_LONG).show();

return true;

default:

return super.onOptionsItemSelected(item);

}

}

}

**OUTPUT:**

Graphical user interface

Description automatically generated with medium confidence A screenshot of a phone

Description automatically generated with medium confidence

**Program no: 13**

**Aim:** Develop an application that uses ArrayAdapter with ListView.

# XML Code:

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android=["ht](http://schemas.android.com/apk/res/android)t[p://schemas.android.com/apk/res/android](http://schemas.android.com/apk/res/android)" xmlns:tools="<http://schemas.android.com/tools>" xmlns:app=["ht](http://schemas.android.com/apk/res-auto)t[p://schemas.android.com/apk/res-auto](http://schemas.android.com/apk/res-auto)" android:layout\_width="match\_parent" android:layout\_height="match\_parent" tools:context=".MainActivity">

<ListView android:id="@+id/mobile\_list" android:layout\_width="match\_parent" android:layout\_height="wrap\_content" >

</ListView>

</androidx.constraintlayout.widget.ConstraintLayout>

# Java Code:

package com.example.adapter;

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

import android.view.View;

import android.widget.AdapterView;import android.widget.ArrayAdapter;import android.widget.ListView; import android.widget.TextView; import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements

AdapterView.OnItemClickListener { ListView l;

String[] days={"Sunday","Monday","Tuesday","Wednesday","Thursday","Friday","Satu rday"};

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main); l=findViewById(R.id.mobile\_list);

ArrayAdapter<String> adapter= new ArrayAdapter<String>(this,R.layout.support\_simple\_spinner\_dropdown\_item,d ays);

l.setAdapter(adapter); l.setOnItemClickListener(this);

}

@Override

public void onItemClick(AdapterView<?> adapterView, View view, int i,long l) { TextView temp=(TextView) view;

Toast.makeText(this,"You clicked"+temp.getText()+"at"+i,Toast.LENGTH\_LONG).show();

}

}

**OUTPUT**

Graphical user interface, text, application, email

Description automatically generated

**Program no: 14**

**Aim:** Program to develop an application that use GridView with images and display Alert box on selection

**XML CODE**

<?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">

<GridView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/gridview"

android:numColumns="3">

</GridView>

</LinearLayout>

**Java Code**

package com.example.grid;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.widget.GridView;

public class MainActivity extends AppCompatActivity {

GridView g1;

String arr[]={"a1","a2","a3","a4","a5","a6","a7","a8"};

int img[]={R.drawable.f1,R.drawable.f2,R.drawable.f3,R.drawable.f4,R.drawable.f5,R.drawable.f6,R.drawable.f7,R.drawable.f8};

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

g1=findViewById(R.id.gridview);

CustomAdapter customAdapter=new CustomAdapter(MainActivity.this,arr,img);

g1.setAdapter(customAdapter);

}

}

**Customadapter.java**

package com.example.grid;

import android.content.Context;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.BaseAdapter;

import android.widget.ImageView;

import android.widget.TextView;

public class CustomAdapter extends BaseAdapter {

Context context;

String str[];

int im[];

LayoutInflater layoutInflater;

public CustomAdapter(MainActivity mainActivity, String[] arr, int[] img) {

this.context=mainActivity;

this.str=arr;

this.im=img;

layoutInflater=(layoutInflater.from(mainActivity));

}

@Override

public int getCount() {

return im.length;

}

@Override

public Object getItem(int i) {

return null;

}

@Override

public long getItemId(int i) {

return 0;

}

@Override

public View getView(int i, View view, ViewGroup viewGroup) {

view=layoutInflater.inflate(R.layout.gridview,null);

TextView textview=(TextView)view.findViewById(R.id.t1);

ImageView imageView=(ImageView)view.findViewById(R.id.img1);

textview.setText(str[i]);

imageView.setImageResource(im[i]);

return view;

}

}

**Gridview.xml**

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

<androidx.appcompat.widget.LinearLayoutCompat xmlns:android="http://schemas.android.com/apk/res/android"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical">

<ImageView

android:layout\_width="150dp"

android:layout\_height="150dp"

android:id="@+id/img1">

</ImageView>

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:id="@+id/t1"

android:textSize="25sp">

</TextView>

</androidx.appcompat.widget.LinearLayoutCompat>

**OUTPUT**

Graphical user interface, application

Description automatically generated

**Program no: 15**

**Aim:** Develop an application that implements Spinner component and perform event handling

Activity\_Main.xml

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="[http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android)

xmlns:app="[http://schemas.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:tools="[http://schemas.android.com/tools"](http://schemas.android.com/tools) android:layout\_width="match\_parent" android:layout\_height="match\_parent" tools:context=".MainActivity">

<Spinner android:id="@+id/spinner"

android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:spinnerMode="dropdown" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintEnd\_toEndOf="parent" app:layout\_constraintStart\_toStartOf="parent" app:layout\_constraintTop\_toTopOf="parent" tools:ignore="MissingConstraints"></Spinner>

</androidx.constraintlayout.widget.ConstraintLayout>

Java Code

package com.example.spinner1;

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 { Spinner spinner;

String[] courses={"MCA", "MTech", "BTech"};

@Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main); spinner=findViewById(R.id.spinner);

ArrayAdapter a=new ArrayAdapter(this,R.layout.support\_simple\_spinner\_dropdown\_item,courses);

spinner.setAdapter(a);

spinner.setOnItemSelectedListener(new AdapterView.OnItemSelectedListener() { @Override

public void onItemSelected(AdapterView<?> parent, View view, int position, long id) { Toast.makeText(getApplicationContext(), "You Have Clicked"+courses[position],

Toast.LENGTH\_LONG).show();

}

@Override

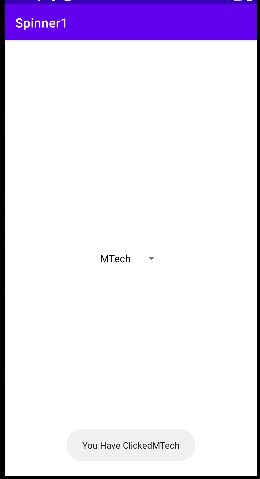
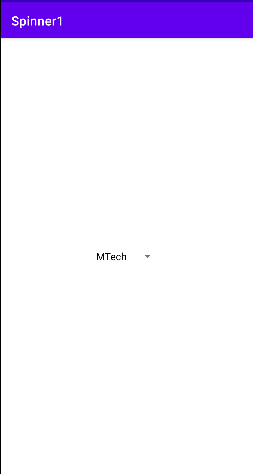
public void onNothingSelected(AdapterView<?> parent) { return;

}

});

}

}

**OUTPUT**

**Program no: 16**

**Aim:** Apply themes via code and manifest file

# XML Code:

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

<androidx.constraintlayout.widget.ConstraintLayout xmlns:android="[http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android)

xmlns:app="[http://schemas.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:tools="[http://schemas.android.com/tools"](http://schemas.android.com/tools) android:layout\_width="match\_parent" android:layout\_height="match\_parent" tools:context=".MainActivity">

<EditText android:id="@+id/editTextTextPersonName" android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:ems="10" android:inputType="textPersonName" android:text="" app:layout\_constraintBottom\_toBottomOf="parent" app:layout\_constraintTop\_toTopOf="parent" tools:layout\_editor\_absoluteX="100dp" />

</androidx.constraintlayout.widget.ConstraintLayout>

AndroidManifest.xml

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

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

<application android:allowBackup="true" android:icon="@mipmap/ic\_launcher" android:label="@string/app\_name"

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

android:supportsRtl="true" android:theme="@style/Theme.newstyle">

<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> themes.xml

<resources xmlns:tools="[http://schemas.android.com/tools"](http://schemas.android.com/tools)>

<!-- Base application theme. -->

<style name="Theme.newstyle" parent="Theme.MaterialComponents.DayNight.DarkActionBar">

<item name="colorPrimary">@color/black</item>

<item name="colorPrimaryDark">@color/yellow</item>

<item name="colorAccent">@color/teal</item>

<item name="android:textColorPrimary">@color/red</item>

</style>

</resources> colors.xml

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

<resources>

<color name="purple\_200">#FFBB86FC</color>

<color name="purple\_500">#FF6200EE</color>

<color name="purple\_700">#FF3700B3</color>

<color name="teal\_200">#FF03DAC5</color>

<color name="teal\_700">#FF018786</color>

<color name="black">#B30707</color>

<color name="white">#FFFFFFFF</color>

<color name="teal">#FF018786</color>

<color name="yellow">#6377E4</color>

<color name="red">#F80F0F</color>

</resources>

# Java Code

package com.example.myappp;

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);

}

}

# OUTPUT

# A picture containing graphical user interface Description automatically generated

**Program no: 17**

**Aim:** Develop application using Fragments.

# Activity\_main.xml

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

<LinearLayout xmlns:android="[http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:app="[http://schemas.android.com/apk/res-auto"](http://schemas.android.com/apk/res-auto) xmlns:tools="[http://schemas.android.com/tools"](http://schemas.android.com/tools) android:layout\_width="match\_parent" android:layout\_height="match\_parent"

android:orientation="vertical" tools:context=".MainActivity">

<FrameLayout android:layout\_width="match\_parent" android:layout\_height="0dp" android:layout\_weight="4" android:background="@color/blah" android:id="@+id/fl"/>

<RelativeLayout android:layout\_width="match\_parent" android:layout\_height="0dp" android:layout\_weight="1"

>

<Button

android:id="@+id/b1" android:layout\_width="160dp" android:layout\_height="50dp" android:layout\_alignParentBottom="true" android:layout\_marginStart="30dp" android:layout\_marginBottom="30dp" android:text="Fragment1" />

<Button

android:id="@+id/b2" android:layout\_width="160dp" android:layout\_height="50dp" android:layout\_alignParentBottom="true" android:layout\_alignParentRight="true" android:layout\_marginRight="30dp"

android:layout\_marginBottom="30dp" android:text="Fragment2" />

</RelativeLayout>

</LinearLayout>

# Fragment\_1.xml

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

<RelativeLayout xmlns:android="[http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:tools="[http://schemas.android.com/tools"](http://schemas.android.com/tools) android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:background="@color/white"

tools:context=".fragment1">

<!-- TODO: Update blank fragment layout -->

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Fragment 1" android:layout\_centerInParent="true" android:textSize="30dp"/>

</RelativeLayout>

# Fragment\_2.xml

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

<RelativeLayout xmlns:android="[http://schemas.android.com/apk/res/android"](http://schemas.android.com/apk/res/android) xmlns:tools="[http://schemas.android.com/tools"](http://schemas.android.com/tools) android:layout\_width="match\_parent" android:layout\_height="match\_parent" android:background="@color/black"

tools:context=".fragment2">

<!-- TODO: Update blank fragment layout -->

<TextView android:layout\_width="wrap\_content" android:layout\_height="wrap\_content" android:text="Fragment 2" android:textColor="@color/white" android:layout\_centerInParent="true" android:textSize="30dp"/>

</RelativeLayout> MainActivity.java

package com.example.fram;

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

import androidx.fragment.app.FragmentManager; import androidx.fragment.app.FragmentTransaction;

import android.os.Bundle;

import android.text.style.TtsSpan; import android.view.View; import android.widget.Button;

public class MainActivity extends AppCompatActivity { @Override

protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState); setContentView(R.layout.activity\_main);

Button b1=findViewById(R.id.b1); Button b2=findViewById(R.id.b2);

b1.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View v) { replaceFragment(new fragment1());

}

});

b2.setOnClickListener(new View.OnClickListener() { @Override

public void onClick(View v) { replaceFragment(new fragment2());

}

});

}

private void replaceFragment(Fragment fragment) {

FragmentManager fragmentManager=getSupportFragmentManager(); FragmentTransaction fragmentTransaction = fragmentManager.beginTransaction(); fragmentTransaction.replace(R.id.fl,fragment);

fragmentTransaction.commit();

}

}

fragment1.java

package com.example.fram;

import android.os.Bundle;

import androidx.fragment.app.Fragment; import android.view.LayoutInflater; import android.view.View;

import android.view.ViewGroup;

public class fragment1 extends Fragment { @Override

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

// Inflate the layout for this fragment

return inflater.inflate(R.layout.fragment\_1, container, false);

}

}

fragment2.java

package com.example.fram;

import android.os.Bundle;

import androidx.fragment.app.Fragment; import android.view.LayoutInflater; import android.view.View;

import android.view.ViewGroup;

public class fragment2 extends Fragment { @Override

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

// Inflate the layout for this fragment

return inflater.inflate(R.layout.fragment\_2, container, false);

}

}

# OUTPUT:

# Chart, treemap chart Description automatically generated



**Program no: 18**

**Aim:** Implement Navigation drawer

**XML Code**

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

<androidx.drawerlayout.widget.DrawerLayout 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:id="@+id/d1g"

tools:context=".MainActivity">

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content">

<TextView

android:id="@+id/Textview2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:layout\_gravity="center"

android:text="TextView">

</TextView>

</LinearLayout>

<com.google.android.material.navigation.NavigationView

android:layout\_width="wrap\_content"

android:layout\_height="match\_parent"

android:layout\_gravity="start"

app:menu="@menu/navi\_menu">

</com.google.android.material.navigation.NavigationView>

</androidx.drawerlayout.widget.DrawerLayout>

**String.xml**

<resources>

<string name="app\_name">navigation</string>

<string name="nav\_open">Open</string>

<string name="nav\_close">Close</string>

</resources>

**Activitymain.java**

package com.example.navigation;

import androidx.annotation.NonNull;

import androidx.appcompat.app.ActionBarDrawerToggle;

import androidx.appcompat.app.AppCompatActivity;

import androidx.drawerlayout.widget.DrawerLayout;

import android.os.Bundle;

import android.view.MenuItem;

public class MainActivity extends AppCompatActivity {

DrawerLayout drawerLayout;

ActionBarDrawerToggle actionBarDrawerToggle;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

drawerLayout=findViewById(R.id.d1g);

actionBarDrawerToggle=new ActionBarDrawerToggle(this,drawerLayout,R.string.nav\_open,R.string.nav\_close);

drawerLayout.addDrawerListener(actionBarDrawerToggle);

actionBarDrawerToggle.syncState();

getSupportActionBar().setDisplayHomeAsUpEnabled(true);

}

@Override

public boolean onOptionsItemSelected(@NonNull MenuItem item) {

if(actionBarDrawerToggle.onOptionsItemSelected(item))

return true;

return super.onOptionsItemSelected(item);

}

}

**Navi\_menu.xml**

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

<menu xmlns:app="http://schemas.android.com/apk/res-auto"

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

<item

android:id="@+id/Item1"

android:title="menu1"

android:icon="@drawable/p4" />

<item android:id="@+id/Item2"

android:title="menu2"

android:icon="@drawable/p4" />

<item android:id="@+id/Item3"

android:title="menu3"

android:icon="@drawable/p4" />

</menu>

**OUTPUT**

A screenshot of a cell phone

Description automatically generated with medium confidence

**Program 19**

**Aim:** Program to implement various SQLite operations: (INSERT, UPDATE, DELETE

, SELECT)

Activitymain.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="wrap\_content"

android:layout\_height="wrap\_content"

tools:context=".MainActivity"

android:orientation="vertical">

<TextView

android:id="@+id/textView"

android:layout\_width="289dp"

android:layout\_height="45dp"

android:layout\_weight="1"

android:textColor="@color/black"

android:textStyle="bold"

android:text="Name"

android:textSize="20dp"/>

<EditText

android:id="@+id/Name"

android:layout\_width="500dp"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:ems="10"

android:inputType="textPersonName"

/>

<TextView

android:id="@+id/textView2"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:textColor="@color/black"

android:textStyle="bold"

android:text="address"

android:textSize="20dp"/>

<EditText

android:id="@+id/edit2"

android:layout\_width="500dp"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPersonName"

/>

<Button

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="150dp"

android:text="Insert" />

<Button

android:id="@+id/button1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="150dp"

android:text="view" />

<EditText

android:id="@+id/edit3"

android:layout\_width="500dp"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="textPersonName"

/>

<Button

android:id="@+id/button2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="150dp"

android:text="Delete" />

<TextView

android:id="@+id/textView3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_weight="1"

android:textColor="@color/black"

android:textStyle="bold"

android:text="Name"

android:textSize="20dp"/>

<Button

android:id="@+id/button3"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginLeft="150dp"

android:text="update" />

</LinearLayout>

Mainactivity.java

package com.example.database;

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.TextView;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

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

EditText e2=findViewById(R.id.edit2);

EditText e3=findViewById(R.id.edit3);

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

Button b2=findViewById(R.id.button1);

Button b3=findViewById(R.id.button2);

Button b4=findViewById(R.id.button3);

TextView t5=findViewById(R.id.textView3);

helperdb helper=new helperdb(this);

b1.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

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

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

helper.insert(na,pa);

}

});

b2.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

Cursor cr=helper.viewdb();

StringBuffer sb=new StringBuffer();//store fetched value cursor

while (cr.moveToNext()){

sb.append("id :"+cr.getString(0)+"\n");

sb.append("name :"+cr.getString(1)+"\n");

sb.append("address :"+cr.getString(2)+"\n");

}

Toast.makeText(getApplicationContext(),sb.toString(),Toast.LENGTH\_LONG).show();

//t5.setText(sb.toString());

}

});

b3.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

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

helper.deletedb(del);

}

});

b4.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

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

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

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

helper.updatedb(up,na,add);

}

});

}

}

helperdb.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 helperdb extends SQLiteOpenHelper {

private static String dbName="student";

private static int dbVersion=1;

SQLiteDatabase db;

public helperdb( Context context) {

super(context,dbName, null, dbVersion);

}

@Override

public void onCreate(SQLiteDatabase db) {

db.execSQL("create table tbl\_stud(sid integer primary key autoincrement,sname varchar(20),saddress varchar(50))");

}

@Override

public void onUpgrade(SQLiteDatabase db, int oldVersion, int newVersion) {

}

public void insert(String name,String address)

{

db=getWritableDatabase();

ContentValues data=new ContentValues();

data.put("sname",name);

data.put("saddress",address);

db.insert("tbl\_stud",null,data);

}

public Cursor viewdb(){

db=getReadableDatabase();

Cursor cr=db.rawQuery("Select \* from tbl\_stud",null);

return cr;

}

public void deletedb(String del){

db=getWritableDatabase();

db.delete("tbl\_stud","sid=?",new String[]{del});

}

public void updatedb(String up,String na,String add){

db=getWritableDatabase();

ContentValues data=new ContentValues();

data.put("sname",na);

data.put("saddress",add);

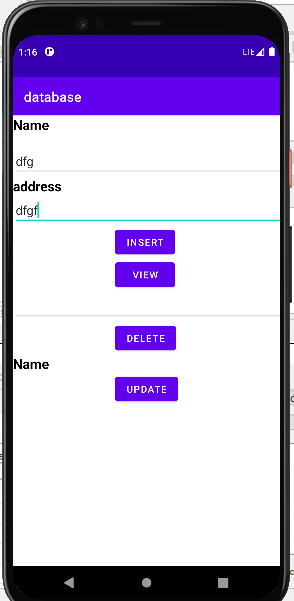
db.update("tbl\_stud",data,"sid=?",new String[]{up});

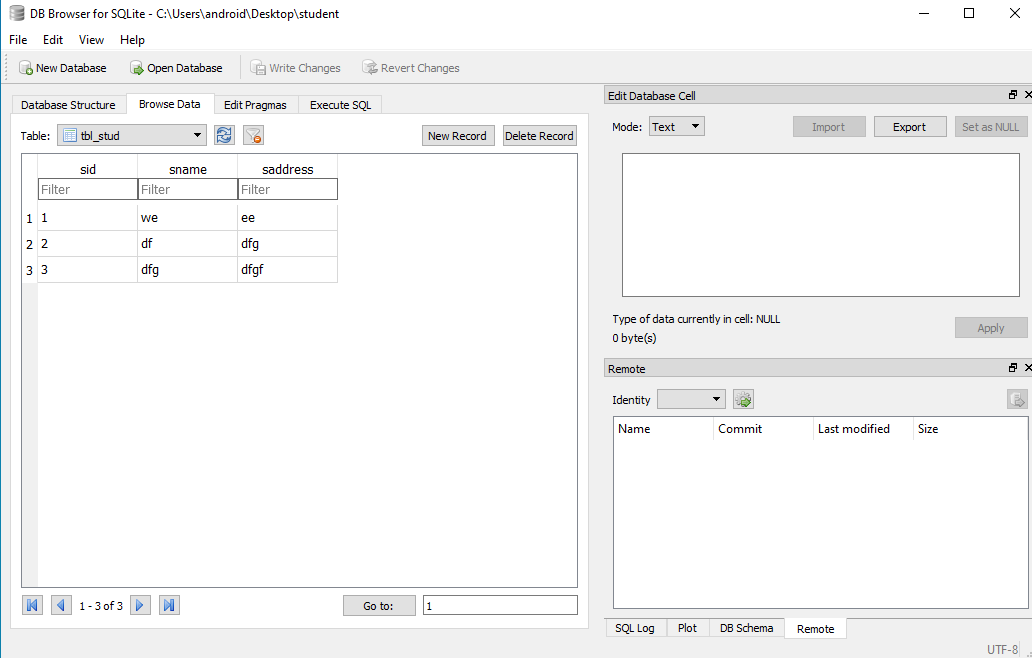
}

}

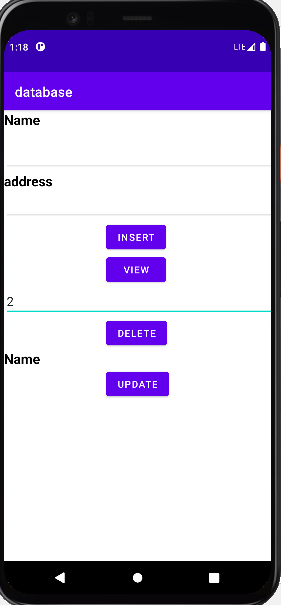
Output

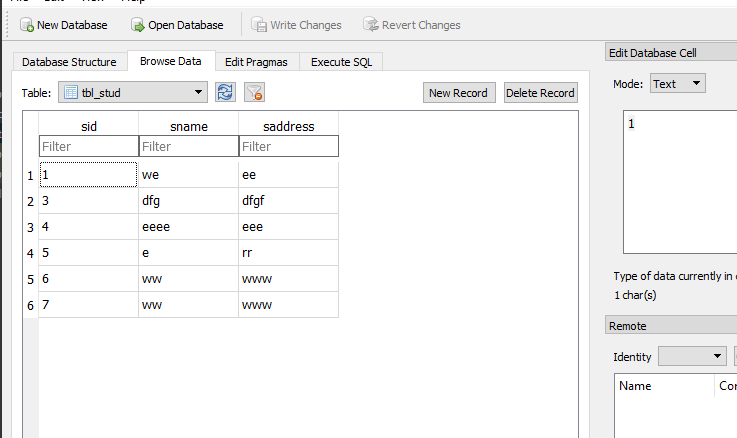
insert



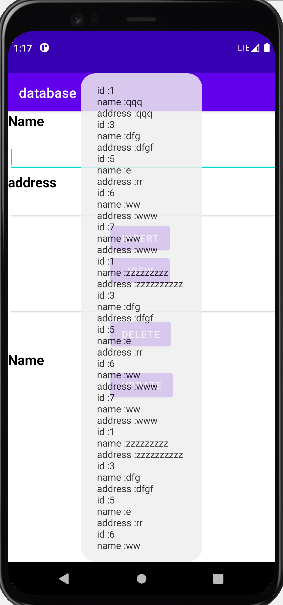


Delete





view



Update

