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**GUI COMPONENTS**

**XML CODE**

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:gravity="center"

android:padding="16dp"

tools:context=".MainActivity">

<Button

android:id="@+id/redButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Red"

android:layout\_centerHorizontal="true"

android:layout\_centerVertical="true"

android:onClick="changeColor"/>

<Button

android:id="@+id/blueButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Blue"

android:layout\_below="@id/redButton"

android:layout\_marginTop="16dp"

android:layout\_centerHorizontal="true"

android:onClick="changeColor"/>

<SeekBar

android:id="@+id/fontSizeSeekBar"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

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

android:layout\_marginTop="16dp"

android:thumb="@android:color/transparent"

android:max="40"

android:progress="20"

android:paddingStart="16dp"

android:paddingEnd="16dp"

android:progressTint="@color/greenyellow"

android:layout\_marginStart="16dp"

android:layout\_marginEnd="16dp"

android:layout\_marginBottom="16dp"/>

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Change Me"

android:textSize="24sp"

android:layout\_below="@id/fontSizeSeekBar"

android:layout\_centerHorizontal="true"/>

</RelativeLayout>

**JAVA CODE**

package com.example.labex;

import android.graphics.Color;

import android.os.Bundle;

import android.view.View;

import android.widget.SeekBar;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private TextView textView;

private SeekBar fontSizeSeekBar;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

textView = findViewById(R.id.textView);

fontSizeSeekBar = findViewById(R.id.fontSizeSeekBar);

fontSizeSeekBar.setOnSeekBarChangeListener(new SeekBar.OnSeekBarChangeListener() {

@Override

public void onProgressChanged(SeekBar seekBar, int progress, boolean fromUser) {

textView.setTextSize(progress);

}

@Override

public void onStartTrackingTouch(SeekBar seekBar) {

// Not needed for this example

}

@Override

public void onStopTrackingTouch(SeekBar seekBar) {

// Not needed for this example

}

});

}

public void changeColor(View view) {

int color = Color.BLACK;

if (view.getId() == R.id.redButton) {

color = Color.RED;

} else if (view.getId() == R.id.blueButton) {

color = Color.BLUE;

}

textView.setTextColor(color);

}

}

CALCULATOR WITH BUTTONS

**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"

android:layout\_width="match\_parent"

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

<TextView

android:id="@+id/resultTextView"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:textSize="24sp"

android:textAlignment="textEnd"

android:text="0"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

android:layout\_marginTop="16dp"

android:layout\_marginStart="16dp"

android:layout\_marginEnd="16dp"/>

<TextView

android:id="@+id/operatorTextView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:textSize="24sp"

android:textAlignment="textEnd"

android:layout\_marginTop="8dp"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintTop\_toBottomOf="@id/resultTextView"

android:layout\_marginEnd="16dp"/>

<GridLayout

android:id="@+id/buttonsGrid"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:rowCount="5"

android:columnCount="4"

app:layout\_constraintTop\_toBottomOf="@id/operatorTextView"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

android:layout\_marginTop="16dp"

android:layout\_marginStart="16dp"

android:layout\_marginEnd="16dp">

<!-- Row 1 -->

<Button

android:id="@+id/button\_7"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="7"

android:layout\_columnWeight="1"

android:onClick="onNumberButtonClick"/>

<Button

android:id="@+id/button\_8"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="8"

android:layout\_columnWeight="1"

android:onClick="onNumberButtonClick"/>

<Button

android:id="@+id/button\_9"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="9"

android:layout\_columnWeight="1"

android:onClick="onNumberButtonClick"/>

<Button

android:id="@+id/button\_divide"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="/"

android:layout\_columnWeight="1"

android:onClick="onOperatorButtonClick"/>

<!-- Row 2 -->

<Button

android:id="@+id/button\_4"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="4"

android:layout\_columnWeight="1"

android:onClick="onNumberButtonClick"/>

<Button

android:id="@+id/button\_5"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="5"

android:layout\_columnWeight="1"

android:onClick="onNumberButtonClick"/>

<Button

android:id="@+id/button\_6"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="6"

android:layout\_columnWeight="1"

android:onClick="onNumberButtonClick"/>

<Button

android:id="@+id/button\_multiply"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="\*"

android:layout\_columnWeight="1"

android:onClick="onOperatorButtonClick"/>

<!-- Row 3 -->

<Button

android:id="@+id/button\_1"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="1"

android:layout\_columnWeight="1"

android:onClick="onNumberButtonClick"/>

<Button

android:id="@+id/button\_2"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="2"

android:layout\_columnWeight="1"

android:onClick="onNumberButtonClick"/>

<Button

android:id="@+id/button\_3"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="3"

android:layout\_columnWeight="1"

android:onClick="onNumberButtonClick"/>

<Button

android:id="@+id/button\_subtract"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="-"

android:layout\_columnWeight="1"

android:onClick="onOperatorButtonClick"/>

<!-- Row 4 -->

<Button

android:id="@+id/button\_0"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="0"

android:layout\_columnWeight="1"

android:layout\_columnSpan="2"

android:onClick="onNumberButtonClick"/>

<Button

android:id="@+id/button\_dot"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="."

android:layout\_columnWeight="1"

android:onClick="onDecimalClick"/>

<Button

android:id="@+id/button\_add"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="+"

android:layout\_columnWeight="1"

android:onClick="onOperatorButtonClick"/>

<!-- Row 5 -->

<Button

android:id="@+id/button\_clear"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="C"

android:layout\_columnWeight="1"

android:layout\_columnSpan="3"

android:onClick="onClearClick"/>

<Button

android:id="@+id/button\_equals"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

android:text="="

android:layout\_columnWeight="1"

android:onClick="onEqualsClick"/>

</GridLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

**JAVA CODE**

package com.example.labex;

import android.os.Bundle;

import android.view.View;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

import com.example.labex.R;

public class MainActivity extends AppCompatActivity {

private TextView resultTextView;

private StringBuilder numberBuilder;

private double operand1, operand2;

private char operator;

private TextView operatorTextView;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

resultTextView = findViewById(R.id.resultTextView);

operatorTextView = findViewById(R.id.operatorTextView);

numberBuilder = new StringBuilder();

}

public void onNumberButtonClick(View view) {

String number = ((TextView) view).getText().toString();

numberBuilder.append(number);

updateResultTextView();

}

public void onOperatorButtonClick(View view) {

operator = ((TextView) view).getText().charAt(0);

operand1 = Double.parseDouble(numberBuilder.toString());

updateOperatorTextView();

numberBuilder.setLength(0);

}

private void updateOperatorTextView() {

operatorTextView.setText(String.valueOf(operator));

}

public void onEqualsClick(View view) {

operand2 = Double.parseDouble(numberBuilder.toString());

double result = calculateResult();

numberBuilder.setLength(0);

numberBuilder.append(result);

updateResultTextView();

}

public void onClearClick(View view) {

numberBuilder.setLength(0);

updateResultTextView();

}

public void onDecimalClick(View view) {

if (!numberBuilder.toString().contains(".")) {

numberBuilder.append(".");

updateResultTextView();

}

}

private double calculateResult() {

switch (operator) {

case '+':

return operand1 + operand2;

case '-':

return operand1 - operand2;

case '\*':

return operand1 \* operand2;

case '/':

if (operand2 != 0) {

return operand1 / operand2;

} else {

return Double.NaN; // Indicate division by zero

}

default:

return Double.NaN; // Invalid operator

}

}

private void updateResultTextView() {

resultTextView.setText(numberBuilder.toString());

}

}

**CALCULATOR WITHOUT BUTTON COMPONENTS**

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

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

android:layout\_width="match\_parent"

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

<EditText

android:id="@+id/firstNumberEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter first number"

android:inputType="numberDecimal"

android:layout\_margin="16dp"

android:layout\_centerVertical="true"

android:layout\_centerHorizontal="true"/>

<EditText

android:id="@+id/secondNumberEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter second number"

android:inputType="numberDecimal"

android:layout\_below="@id/firstNumberEditText"

android:layout\_margin="16dp"

android:layout\_centerVertical="true" />

<TextView

android:id="@+id/resultTextView"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_below="@id/secondNumberEditText"

android:textSize="24sp"

android:gravity="center"

android:layout\_margin="16dp" />

</RelativeLayout>

**JAVA CODE**

package com.example.labex;import android.os.Bundle;

import android.text.Editable;

import android.text.TextWatcher;

import android.widget.EditText;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private EditText firstNumberEditText, secondNumberEditText;

private TextView resultTextView;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

firstNumberEditText = findViewById(R.id.firstNumberEditText);

secondNumberEditText = findViewById(R.id.secondNumberEditText);

resultTextView = findViewById(R.id.resultTextView);

// Add TextChangedListener to listen for changes in the EditText fields

firstNumberEditText.addTextChangedListener(watcher);

secondNumberEditText.addTextChangedListener(watcher);

}

private final TextWatcher watcher = new TextWatcher() {

@Override

public void beforeTextChanged(CharSequence s, int start, int count, int after) {}

@Override

public void onTextChanged(CharSequence s, int start, int before, int count) {}

@Override

public void afterTextChanged(Editable s) {

calculateResult();

}

};

private void calculateResult() {

String firstNumberStr = firstNumberEditText.getText().toString();

String secondNumberStr = secondNumberEditText.getText().toString();

if (!firstNumberStr.isEmpty() && !secondNumberStr.isEmpty()) {

double firstNumber = Double.parseDouble(firstNumberStr);

double secondNumber = Double.parseDouble(secondNumberStr);

// Perform calculations

double addition = firstNumber + secondNumber;

double subtraction = firstNumber - secondNumber;

double multiplication = firstNumber \* secondNumber;

double division = secondNumber != 0 ? firstNumber / secondNumber : 0;

// Prepare the output text

String output = "Addition of two numbers is: " + addition + "\n" +

"Subtraction of two numbers is: " + subtraction + "\n" +

"Multiplication of two numbers is: " + multiplication + "\n" +

"Division of two numbers is: " + division;

// Update the result TextView

resultTextView.setText(output);

} else {

// Clear the result TextView if any of the EditText fields is empty

resultTextView.setText("");

}

}

}

SIGNUPFORM APPLICATION

**XML CODE**

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

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

android:layout\_width="match\_parent"

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

<EditText

android:id="@+id/editTextEmail"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Email"

android:inputType="textEmailAddress"

android:layout\_margin="16dp"/>

<EditText

android:id="@+id/editTextPassword"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Password"

android:inputType="textPassword"

android:layout\_below="@id/editTextEmail"

android:layout\_margin="16dp"/>

<Button

android:id="@+id/buttonSignup"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Sign Up"

android:layout\_below="@id/editTextPassword"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="24dp"/>

</RelativeLayout>

**JAVA CODE**

package com.example.labex;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private EditText editTextEmail, editTextPassword;

private Button buttonSignup;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

editTextEmail = findViewById(R.id.editTextEmail);

editTextPassword = findViewById(R.id.editTextPassword);

buttonSignup = findViewById(R.id.buttonSignup);

buttonSignup.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

signUp();

}

});

}

private void signUp() {

String email = editTextEmail.getText().toString().trim();

String password = editTextPassword.getText().toString().trim();

// Perform validation

if (email.isEmpty() || password.isEmpty()) {

Toast.makeText(this, "Please fill in all fields", Toast.LENGTH\_SHORT).show();

return;

}

if (!isValidEmail(email)) {

Toast.makeText(this, "Invalid email address", Toast.LENGTH\_SHORT).show();

return;

}

if (!isStrongPassword(password)) {

Toast.makeText(this, "Password must be at least 6 characters long", Toast.LENGTH\_SHORT).show();

return;

}

// Sign up successful, handle registration logic here

Toast.makeText(this, "Sign up successful!", Toast.LENGTH\_SHORT).show();

}

private boolean isValidEmail(String email) {

// Add email validation logic

// For simplicity, check if the email contains "@" symbol

return email.contains("@");

}

private boolean isStrongPassword(String password) {

// Add password strength validation logic

// For simplicity, check if the password is at least 6 characters long

return password.length() >= 6;

}

}

**GRAPHICAL PRIMITIVES**

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

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

android:layout\_width="match\_parent"

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

<ImageView

android:id="@+id/imageView"

android:layout\_width="match\_parent"

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

</RelativeLayout>

**JAVA CODE**

package com.example.labex;

import android.app.Activity;

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 Activity

{

@Override

public void onCreate(Bundle savedInstanceState)

{

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

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

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

i.setBackgroundDrawable(new BitmapDrawable(bg));

Canvas canvas = new Canvas(bg);

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);

}

}

**DEVELOP AN APPLICATION THAT MAKES USE OF DATABASE**

**XML CODE**

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

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

android:layout\_width="match\_parent"

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

<EditText

android:id="@+id/RRN"

android:layout\_width="150dp"

android:layout\_height="wrap\_content"

android:layout\_marginTop="30dp"

android:hint="RRN"

android:layout\_alignParentTop="true"

android:layout\_centerHorizontal="true" />

<EditText

android:id="@+id/Name"

android:layout\_width="150dp"

android:layout\_height="wrap\_content"

android:layout\_below="@id/RRN"

android:layout\_marginTop="20dp"

android:hint="Name"

android:layout\_centerHorizontal="true" />

<EditText

android:id="@+id/CGPA"

android:layout\_width="150dp"

android:layout\_height="wrap\_content"

android:layout\_below="@id/Name"

android:layout\_marginTop="20dp"

android:hint="CGPA"

android:layout\_centerHorizontal="true" />

<Button

android:id="@+id/Insert"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Insert"

android:layout\_below="@id/CGPA"

android:layout\_marginTop="20dp"

android:layout\_centerHorizontal="true" />

<Button

android:id="@+id/Delete"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Delete"

android:layout\_below="@id/Insert"

android:layout\_marginTop="20dp"

android:layout\_centerHorizontal="true" />

<Button

android:id="@+id/Update"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Update"

android:layout\_below="@id/Delete"

android:layout\_marginTop="20dp"

android:layout\_centerHorizontal="true" />

<Button

android:id="@+id/View"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="View"

android:layout\_below="@id/Update"

android:layout\_marginTop="20dp"

android:layout\_centerHorizontal="true" />

<Button

android:id="@+id/ViewAll"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="View All"

android:layout\_below="@id/View"

android:layout\_marginTop="20dp"

android:layout\_centerHorizontal="true" />

</RelativeLayout>

**JAVA CODE**

package com.example.labex;

import android.app.Activity;

import android.app.AlertDialog.Builder;

import android.content.Context;

import android.database.Cursor;

import android.database.sqlite.SQLiteDatabase;

import android.os.Bundle;

import android.view.View;

import android.view.View.OnClickListener;

import android.widget.Button;

import android.widget.EditText;

public class MainActivity extends Activity implements OnClickListener {

EditText RRN, Name, CGPA;

Button Insert, Delete, Update, View, ViewAll;

SQLiteDatabase db;

@Override

public void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

RRN = findViewById(R.id.RRN);

Name = findViewById(R.id.Name);

CGPA = findViewById(R.id.CGPA);

Insert = findViewById(R.id.Insert);

Delete = findViewById(R.id.Delete);

Update = findViewById(R.id.Update);

View = findViewById(R.id.View);

ViewAll = findViewById(R.id.ViewAll);

Insert.setOnClickListener(this);

Delete.setOnClickListener(this);

Update.setOnClickListener(this);

View.setOnClickListener(this);

ViewAll.setOnClickListener(this);

db = openOrCreateDatabase("StudentDB", Context.MODE\_PRIVATE, null);

db.execSQL("CREATE TABLE IF NOT EXISTS student(rrn VARCHAR, name VARCHAR, cgpa VARCHAR);");

}

public void onClick(View view) {

if (view == Insert) {

String rrnValue = RRN.getText().toString();

String nameValue = Name.getText().toString();

String cgpaValue = CGPA.getText().toString();

if (rrnValue.isEmpty() || nameValue.isEmpty() || cgpaValue.isEmpty()) {

showMessage("Error", "Please enter all values");

return;

}

db.execSQL("INSERT INTO student(rrn, name, cgpa) VALUES('" + rrnValue + "','" + nameValue + "','" + cgpaValue + "')");

showMessage("Success", "Record added");

clearText();

}

else if (view == Delete) {

String rrnValue = RRN.getText().toString();

if (rrnValue.isEmpty()) {

showMessage("Error", "Please enter RRN");

return;

}

Cursor c = db.rawQuery("SELECT \* FROM student WHERE rrn='" + rrnValue + "'", null);

if (c.moveToFirst()) {

db.execSQL("DELETE FROM student WHERE rrn='" + rrnValue + "'");

showMessage("Success", "Record Deleted");

} else {

showMessage("Error", "Invalid RRN");

}

clearText();

}

// Similarly, add logic for Update, View, and ViewAll

else if (view == View) {

// View logic

String rrnValue = RRN.getText().toString();

if (rrnValue.isEmpty()) {

showMessage("Error", "Please enter RRN");

return;

}

Cursor c = db.rawQuery("SELECT \* FROM student WHERE rrn='" + rrnValue + "'", null);

if (c.moveToFirst()) {

Name.setText(c.getString(1));

CGPA.setText(c.getString(2));

} else {

showMessage("Error", "Invalid RRN");

clearText();

}

}

else if (view == ViewAll) {

// ViewAll logic

Cursor c = db.rawQuery("SELECT \* FROM student", null);

if (c.getCount() == 0) {

showMessage("Error", "No records found");

return;

}

StringBuffer buffer = new StringBuffer();

while (c.moveToNext()) {

buffer.append("RRN: " + c.getString(0) + "\n");

buffer.append("Name: " + c.getString(1) + "\n");

buffer.append("CGPA: " + c.getString(2) + "\n\n");

}

showMessage("Student Details", buffer.toString());

}

}

public void showMessage(String title, String message) {

Builder builder = new Builder(this);

builder.setCancelable(true);

builder.setTitle(title);

builder.setMessage(message);

builder.show();

}

public void clearText() {

RRN.setText("");

Name.setText("");

CGPA.setText("");

RRN.requestFocus();

}

}

MULTITHREADING

**JAVA CODE**

package com.example.labex;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.ImageView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

ImageView img;

Button bt1, bt2;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

bt1 = findViewById(R.id.button);

bt2 = findViewById(R.id.button2);

img = findViewById(R.id.imageView);

bt1.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

new Thread(new Runnable() {

@Override

public void run() {

img.post(new Runnable() {

@Override

public void run() {

img.setImageResource(R.drawable.logo1);

}

});

}

}).start();

}

});

bt2.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

new Thread(new Runnable() {

@Override

public void run() {

img.post(new Runnable() {

@Override

public void run() {

img.setImageResource(R.drawable.logo2);

}

});

}

}).start();

}

});

}

}

**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"

android:orientation="vertical">

<ImageView

android:id="@+id/imageView"

android:layout\_width="400dp"

android:layout\_height="280dp"

android:layout\_margin="100dp"

android:layout\_gravity="center" />

<Button

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_margin="1dp"

android:layout\_gravity="center"

android:text="Load Image 1" />

<Button

android:id="@+id/button2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_gravity="center"

android:layout\_margin="15dp"

android:text="Load image 2" />

</LinearLayout>

NOTIFICATION

package com.example.practical;

import androidx.appcompat.app.AppCompatActivity;

import androidx.core.app.ActivityCompat;

import androidx.core.app.NotificationCompat;

import androidx.core.app.NotificationManagerCompat;

import android.app.Notification;

import android.app.NotificationChannel;

import android.app.NotificationManager;

import android.content.pm.PackageManager;

import android.os.Build;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

public class MainActivity extends AppCompatActivity {

NotificationManagerCompat notificationManagerCompat;

Notification notification;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

if (Build.VERSION.SDK\_INT >= Build.VERSION\_CODES.O) {

NotificationChannel channel = new NotificationChannel("Notify", "First Notification", NotificationManager.IMPORTANCE\_DEFAULT);

NotificationManager manager = getSystemService(NotificationManager.class);

manager.createNotificationChannel(channel);

}

NotificationCompat.Builder builder = new NotificationCompat.Builder(this, "Notify")

.setSmallIcon(R.drawable.ic\_launcher\_foreground)

.setContentTitle("Notification")

.setContentText("First Notification App");

notification = builder.build();

notificationManagerCompat = NotificationManagerCompat.from(this);

}

public void push(View view) {

if (ActivityCompat.checkSelfPermission(this, android.Manifest.permission.POST\_NOTIFICATIONS) != PackageManager.PERMISSION\_GRANTED) {

// TODO: Consider calling

// ActivityCompat#requestPermissions

return;

}

notificationManagerCompat.notify(1, notification);

}

}

**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"

android:orientation="vertical"

android:gravity="center"

tools:context=".MainActivity">

<Button

android:onClick="push"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Push Notification" />

</LinearLayout>

**TODOLIST**

**Xml code**

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<EditText

android:id="@+id/taskEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter task"

android:layout\_margin="16dp"

android:layout\_alignParentTop="true"

android:layout\_alignParentStart="true"

android:layout\_toStartOf="@+id/addButton"/>

<Button

android:id="@+id/addButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Add"

android:layout\_margin="16dp"

android:layout\_alignParentTop="true"

android:layout\_alignParentEnd="true"/>

<ListView

android:id="@+id/taskListView"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

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

android:layout\_alignParentStart="true"

android:layout\_marginTop="16dp"/>

</RelativeLayout>

**JAVA CODE**

package com.example.practical;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.Button;

import android.widget.EditText;

import android.widget.ListView;

import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {

private EditText taskEditText;

private Button addButton;

private ListView taskListView;

private ArrayList<String> taskList;

private ArrayAdapter<String> taskAdapter;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

// Initialize views

taskEditText = findViewById(R.id.taskEditText);

addButton = findViewById(R.id.addButton);

taskListView = findViewById(R.id.taskListView);

// Initialize task list

taskList = new ArrayList<>();

// Initialize adapter

taskAdapter = new ArrayAdapter<>(this, android.R.layout.simple\_list\_item\_1, taskList);

// Set adapter to list view

taskListView.setAdapter(taskAdapter);

// Add button click listener

addButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

addTask();

}

});

// ListView item click listener to remove task

taskListView.setOnItemClickListener(new AdapterView.OnItemClickListener() {

@Override

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

removeTask(position);

}

});

}

private void addTask() {

String task = taskEditText.getText().toString().trim();

if (!task.isEmpty()) {

taskList.add(task);

taskAdapter.notifyDataSetChanged();

taskEditText.setText("");

}

}

private void removeTask(int position) {

taskList.remove(position);

taskAdapter.notifyDataSetChanged();

}

}

EXTRA QUESTIONS

Welcome cresecnt

JAVA

package com.example.practical;import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private EditText nameEditText;

private Button okButton;

private TextView welcomeMessageTextView;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

nameEditText = findViewById(R.id.nameEditText);

okButton = findViewById(R.id.okButton);

welcomeMessageTextView = findViewById(R.id.welcomeMessageTextView);

okButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String name = nameEditText.getText().toString();

String welcomeMessage = "WELCOME CRESCENT, " + name + "!";

welcomeMessageTextView.setText(welcomeMessage);

welcomeMessageTextView.setVisibility(View.VISIBLE);

}

});

}

}

XML

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

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

android:layout\_width="match\_parent"

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

<EditText

android:id="@+id/nameEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_margin="16dp"

android:hint="Enter your name"/>

<Button

android:id="@+id/okButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/nameEditText"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="16dp"

android:text="OK"/>

<TextView

android:id="@+id/welcomeMessageTextView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/okButton"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="16dp"

android:textSize="20sp"

android:textStyle="bold"

android:visibility="gone"/>

</RelativeLayout>

Fitness tracker

package com.example.practical;

import android.os.Bundle;

import android.view.View;

import android.widget.ArrayAdapter;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Spinner;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private Spinner workoutTypeSpinner;

private EditText durationEditText, distanceEditText, setsEditText, repsEditText;

private Button saveButton;

// Define workout types array directly in Java

private String[] workoutTypes = {"Running", "Cycling", "Weightlifting"};

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

// Initialize UI elements

workoutTypeSpinner = findViewById(R.id.workoutTypeSpinner);

durationEditText = findViewById(R.id.durationEditText);

distanceEditText = findViewById(R.id.distanceEditText);

setsEditText = findViewById(R.id.setsEditText);

repsEditText = findViewById(R.id.repsEditText);

saveButton = findViewById(R.id.saveButton);

// Set up spinner with workout types

ArrayAdapter<String> adapter = new ArrayAdapter<>(this,

android.R.layout.simple\_spinner\_item, workoutTypes);

adapter.setDropDownViewResource(android.R.layout.simple\_spinner\_dropdown\_item);

workoutTypeSpinner.setAdapter(adapter);

// Handle save button click event

saveButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

saveWorkout();

}

});

}

private void saveWorkout() {

// Get workout details from EditText fields

String workoutType = workoutTypes[workoutTypeSpinner.getSelectedItemPosition()];

String duration = durationEditText.getText().toString();

String distance = distanceEditText.getText().toString();

String sets = setsEditText.getText().toString();

String reps = repsEditText.getText().toString();

// Validate input

if (duration.isEmpty() || distance.isEmpty() || sets.isEmpty() || reps.isEmpty()) {

Toast.makeText(this, "Please fill in all fields", Toast.LENGTH\_SHORT).show();

return;

}

// Save workout data (you can implement your saving logic here)

// For now, let's just display the entered workout details

String workoutDetails = "Workout Type: " + workoutType + "\n"

+ "Duration: " + duration + " minutes\n"

+ "Distance: " + distance + " km\n"

+ "Sets: " + sets + "\n"

+ "Reps: " + reps;

Toast.makeText(this, workoutDetails, Toast.LENGTH\_LONG).show();

}

}

XML CODE

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

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

android:layout\_width="match\_parent"

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

<!-- Workout Type Spinner -->

<Spinner

android:id="@+id/workoutTypeSpinner"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_margin="16dp"/>

<!-- Duration -->

<EditText

android:id="@+id/durationEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_below="@id/workoutTypeSpinner"

android:layout\_margin="16dp"

android:hint="Duration (minutes)"/>

<!-- Distance -->

<EditText

android:id="@+id/distanceEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_below="@id/durationEditText"

android:layout\_margin="16dp"

android:hint="Distance (km)"/>

<!-- Sets -->

<EditText

android:id="@+id/setsEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_below="@id/distanceEditText"

android:layout\_margin="16dp"

android:hint="Sets"/>

<!-- Reps -->

<EditText

android:id="@+id/repsEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_below="@id/setsEditText"

android:layout\_margin="16dp"

android:hint="Reps"/>

<!-- Save Button -->

<Button

android:id="@+id/saveButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_below="@id/repsEditText"

android:layout\_centerHorizontal="true"

android:layout\_marginTop="24dp"

android:text="Save"/>

</RelativeLayout>

EXPENSE TRACKER

package com.example.practical;

import android.os.Bundle;

import android.view.View;

import android.widget.ArrayAdapter;

import android.widget.Button;

import android.widget.EditText;

import android.widget.Spinner;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private EditText expenseNameEditText, expenseAmountEditText, expenseDateEditText;

private Spinner expenseCategorySpinner;

private Button saveExpenseButton;

// Define expense categories array

private String[] expenseCategories = {"Groceries", "Utilities", "Transportation", "Entertainment", "Other"};

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

// Initialize UI elements

expenseNameEditText = findViewById(R.id.expenseNameEditText);

expenseAmountEditText = findViewById(R.id.expenseAmountEditText);

expenseCategorySpinner = findViewById(R.id.expenseCategorySpinner);

expenseDateEditText = findViewById(R.id.expenseDateEditText);

saveExpenseButton = findViewById(R.id.saveExpenseButton);

// Set up spinner with expense categories

ArrayAdapter<String> adapter = new ArrayAdapter<>(this, android.R.layout.simple\_spinner\_item, expenseCategories);

adapter.setDropDownViewResource(android.R.layout.simple\_spinner\_dropdown\_item);

expenseCategorySpinner.setAdapter(adapter);

// Handle save expense button click event

saveExpenseButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

saveExpense();

}

});

}

private void saveExpense() {

// Retrieve data from EditText fields

String expenseName = expenseNameEditText.getText().toString();

String expenseAmount = expenseAmountEditText.getText().toString();

String expenseCategory = expenseCategories[expenseCategorySpinner.getSelectedItemPosition()];

String expenseDate = expenseDateEditText.getText().toString();

// Basic validation

if (expenseName.isEmpty() || expenseAmount.isEmpty() || expenseDate.isEmpty()) {

Toast.makeText(this, "Please fill in all fields", Toast.LENGTH\_SHORT).show();

return;

}

// Save expense data (you can implement your saving logic here)

// For now, let's just display the entered expense details

String expenseDetails = "Expense Name: " + expenseName + "\n"

+ "Amount: $" + expenseAmount + "\n"

+ "Category: " + expenseCategory + "\n"

+ "Date: " + expenseDate;

Toast.makeText(this, expenseDetails, Toast.LENGTH\_LONG).show();

}

}

**XML CODE**

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:padding="16dp">

<!-- Expense Name -->

<EditText

android:id="@+id/expenseNameEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Expense Name"

android:inputType="text"/>

<!-- Expense Amount -->

<EditText

android:id="@+id/expenseAmountEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Expense Amount"

android:inputType="numberDecimal"/>

<!-- Expense Category -->

<Spinner

android:id="@+id/expenseCategorySpinner"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Expense Category"/>

<!-- Expense Date -->

<EditText

android:id="@+id/expenseDateEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Expense Date"

android:inputType="date"/>

<!-- Save Button -->

<Button

android:id="@+id/saveExpenseButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_gravity="center"

android:layout\_marginTop="16dp"

android:text="Save Expense"/>

</LinearLayout>

BASIC NAME AND AGE

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:padding="16dp">

<EditText

android:id="@+id/nameEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter your name"/>

<EditText

android:id="@+id/ageEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter your age"

android:inputType="number"/>

<Button

android:id="@+id/displayButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_gravity="center"

android:text="Display"/>

<TextView

android:id="@+id/resultTextView"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginTop="16dp"

android:textSize="18sp"

android:textStyle="bold"/>

</LinearLayout>

**JAVA CODE**

package com.example.practical;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private EditText nameEditText, ageEditText;

private Button displayButton;

private TextView resultTextView;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

// Initialize UI elements

nameEditText = findViewById(R.id.nameEditText);

ageEditText = findViewById(R.id.ageEditText);

displayButton = findViewById(R.id.displayButton);

resultTextView = findViewById(R.id.resultTextView);

// Set click listener for Display button

displayButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

displayUserInfo();

}

});

}

private void displayUserInfo() {

// Retrieve user input from EditText fields

String name = nameEditText.getText().toString();

String age = ageEditText.getText().toString();

// Display the user input on the TextView

String userInfo = "Name: " + name + "\nAge: " + age;

resultTextView.setText(userInfo);

}

}

Hamdan ka

[5/15, 6:43 AM] Mohamed Faraazman: package com.example.calc;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import androidx.activity.EdgeToEdge;

import androidx.appcompat.app.AppCompatActivity;

import androidx.core.graphics.Insets;

import androidx.core.view.ViewCompat;

import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

EditText inputEditText1;

EditText inputEditText2;

TextView resultText;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

EdgeToEdge.enable(this);

setContentView(R.layout.activity\_main);

inputEditText1=findViewById(R.id.num1);

inputEditText2=findViewById(R.id.num2);

resultText=findViewById(R.id.result);

findViewById(R.id.add).setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

perform('+');

}

});

findViewById(R.id.subtract).setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

perform('-');

}

}

);

findViewById(R.id.multiplication).setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

perform('\*');

}

}

);

findViewById(R.id.division).setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

perform('/');

}

}

);

ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) -> {

Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());

v.setPadding(systemBars.left, systemBars.top, systemBars.right, systemBars.bottom);

return insets;

});

}

private void perform(char operator){

double number1=Double.parseDouble(inputEditText1.getText().toString());

double number2=Double.parseDouble(inputEditText2.getText().toString());

double result=0;

switch (operator) {

case '+':

result=number1+number2;

break;

case '-':

result=number1-number2;

break;

case '/':

if (number2 != 0) {

result = number1 / number2;

} else {

// Handle division by zero error

resultText.setText("Cannot divide by zero");

return;

}

break;

case '\*':

result=number1\*number2;

break;

}

resultText.setText(String.valueOf(result));

}

}

[5/15, 6:43 AM] Mohamed Faraazman: <?xml version="1.0" encoding="utf-8"?>

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

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

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

android:id="@+id/main"

android:layout\_width="match\_parent"

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="My Calculator"

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="0.06" />

<Button

android:id="@+id/add"

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="0.148"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.502" />

<Button

android:id="@+id/subtract"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="subtract"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.709"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.502" />

<Button

android:id="@+id/multiplication"

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="0.173"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.609" />

<Button

android:id="@+id/division"

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="0.747"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.625" />

<EditText

android:id="@+id/num1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="text"

android:hint="Enter Num1:"

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="0.214" />

<EditText

android:id="@+id/num2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="text"

android:hint="Enter Num2:"

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="0.346" />

<TextView

android:id="@+id/result"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Result is:"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.46"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.775" />

</androidx.constraintlayout.widget.ConstraintLayout>

[5/15, 6:43 AM] Mohamed Faraazman: package com.example.calcwithout;

import android.annotation.SuppressLint;

import android.os.Bundle;

import android.view.View;

import android.widget.EditText;

import android.widget.TextView;

import androidx.activity.EdgeToEdge;

import androidx.appcompat.app.AppCompatActivity;

import androidx.core.graphics.Insets;

import androidx.core.view.ViewCompat;

import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

private EditText num1,num2;

private TextView result;

@SuppressLint("MissingInflatedId")

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

EdgeToEdge.enable(this);

setContentView(R.layout.activity\_main);

num1=findViewById(R.id.num1);

num2=findViewById(R.id.num2);

result=findViewById(R.id.result);

num1.setOnFocusChangeListener(new View.OnFocusChangeListener(){

@Override

public void onFocusChange(View v, boolean hasFocus) {

if(!hasFocus){

calculateResult();

}

}

});

num2.setOnFocusChangeListener(new View.OnFocusChangeListener(){

@Override

public void onFocusChange(View v, boolean hasFocus) {

if(!hasFocus){

calculateResult();

}

}

});

ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) -> {

Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());

v.setPadding(systemBars.left, systemBars.top, systemBars.right, systemBars.bottom);

return insets;

});

}

private void calculateResult() {

String num1Input=num1.getText().toString().trim();

String num2Input=num2.getText().toString().trim();

if(!num1Input.isEmpty() && !num2Input.isEmpty()){

double num1C=Double.parseDouble(num1Input);

double num2C=Double.parseDouble(num2Input);

double resultC=num1C+num2C;

result.setText(String.valueOf(resultC));

}

else{

result.setText("");

}

}

}

[5/15, 6:43 AM] Mohamed Faraazman: <?xml version="1.0" encoding="utf-8"?>

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

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

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

android:id="@+id/main"

android:layout\_width="match\_parent"

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="Calculator without Button"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.467"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.078" />

<EditText

android:id="@+id/num1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="Num:1"

android:inputType="text"

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="0.204" />

<EditText

android:id="@+id/num2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="text"

android:hint="Num2:"

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="0.327" />

<TextView

android:id="@+id/result"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_marginTop="404dp"

android:text="TextView"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.464"

app:layout\_constraintStart\_toStartOf="parent"

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

</androidx.constraintlayout.widget.ConstraintLayout>

[5/15, 6:43 AM] Mohamed Faraazman: package com.example.signup;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.EditText;

import android.widget.TextView;

import androidx.activity.EdgeToEdge;

import androidx.appcompat.app.AppCompatActivity;

import androidx.core.graphics.Insets;

import androidx.core.view.ViewCompat;

import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

private Button registerButton;

private EditText nameEditText, passwordEditText, emailEditText;

private TextView messageTextView;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

EdgeToEdge.enable(this);

setContentView(R.layout.activity\_main);

nameEditText = findViewById(R.id.name);

passwordEditText = findViewById(R.id.password);

emailEditText = findViewById(R.id.email);

messageTextView = findViewById(R.id.message);

registerButton = findViewById(R.id.button);

registerButton.setOnClickListener(new View.OnClickListener(){

@Override

public void onClick(View v) {

String name = nameEditText.getText().toString().trim();

String password = passwordEditText.getText().toString().trim();

String email = emailEditText.getText().toString().trim();

if (!name.isEmpty() && !password.isEmpty() && !email.isEmpty()) {

// All fields are filled, append the result

messageTextView.append("\nRegistered successfully");

} else {

// If any field is empty, display an error message

messageTextView.setText("Please fill in all fields");

}

}

});

ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) -> {

Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());

v.setPadding(systemBars.left, systemBars.top, systemBars.right, systemBars.bottom);

return insets;

});

}

}

[5/15, 6:43 AM] Mohamed Faraazman: <?xml version="1.0" encoding="utf-8"?>

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

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

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

android:id="@+id/main"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:background="#463232"

android:backgroundTint="#90C890"

tools:context=".MainActivity">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Sign Up Form"

android:textColor="#101010"

android:textSize="24sp"

android:textStyle="bold"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.456"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.064" />

<EditText

android:id="@+id/name"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:inputType="text"

android:hint="Name:"

android:textStyle="bold"

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="0.205" />

<EditText

android:id="@+id/password"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="pasword"

android:inputType="textPassword"

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="0.322" />

<EditText

android:id="@+id/email"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:ems="10"

android:hint="Enter Email:"

android:inputType="textEmailAddress"

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="0.448" />

<Button

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:background="#171515"

android:backgroundTint="#100F0F"

android:backgroundTintMode="screen"

android:text="Register"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.454"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.597" />

<TextView

android:id="@+id/message"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Message:"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintHorizontal\_bias="0.464"

app:layout\_constraintStart\_toStartOf="parent"

app:layout\_constraintTop\_toTopOf="parent"

app:layout\_constraintVertical\_bias="0.707" />

</androidx.constraintlayout.widget.ConstraintLayout>

[5/15, 6:43 AM] Mohamed Faraazman: package com.example.graphical;

import android.content.Context;

import android.graphics.Canvas;

import android.graphics.Color;

import android.graphics.Paint;

import android.util.AttributeSet;

import android.view.View;

public class myCustomView extends View {

private Paint paint;

public myCustomView(Context context) {

super(context);

init();

}

public myCustomView(Context context, AttributeSet attrs) {

super(context, attrs);

init();

}

public myCustomView(Context context, AttributeSet attrs, int defStyleAttr) {

super(context, attrs, defStyleAttr);

init();

}

private void init() {

paint = new Paint();

paint.setColor(Color.RED);

paint.setStyle(Paint.Style.FILL);

}

@Override

protected void onDraw(Canvas canvas) {

super.onDraw(canvas);

// Draw a circle

int cx = getWidth() / 2;

int cy = getHeight() / 2;

int radius = 100;

canvas.drawCircle(cx, cy, radius, paint);

// Draw other shapes or lines as needed

int left = 100;

int top = 100;

int right = 400;

int bottom = 300;

canvas.drawRect(left, top, right, bottom, paint);

}

}

[5/15, 6:43 AM] Mohamed Faraazman: <?xml version="1.0" encoding="utf-8"?>

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

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

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

android:id="@+id/main"

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\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

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

<com.example.graphical.myCustomView

android:layout\_width="match\_parent"

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

</androidx.constraintlayout.widget.ConstraintLayout> xml

[5/15, 6:43 AM] Mohamed Faraazman: package com.example.multithreading;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.ProgressBar;

import android.widget.TextView;

import androidx.activity.EdgeToEdge;

import androidx.appcompat.app.AppCompatActivity;

import androidx.core.graphics.Insets;

import androidx.core.view.ViewCompat;

import androidx.core.view.WindowInsetsCompat;

public class MainActivity extends AppCompatActivity {

private Button startButton;

private TextView resultText;

private ProgressBar progressBar;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

EdgeToEdge.enable(this);

setContentView(R.layout.activity\_main);

startButton=findViewById(R.id.button);

resultText=findViewById(R.id.result);

progressBar=findViewById(R.id.progressBar);

startButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

progressBar.setVisibility(View.VISIBLE);

startButton.setEnabled(false);

new Thread(new Runnable() {

@Override

public void run() {

try {

Thread.sleep(3000);

}catch (InterruptedException e){

e.printStackTrace();

}

runOnUiThread(new Runnable() {

@Override

public void run() {

progressBar.setVisibility(View.GONE);

startButton.setEnabled(true);

resultText.setText("Task completed!");

}

});

}

}).start();

}

});

ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v, insets) -> {

Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());

v.setPadding(systemBars.left, systemBars.top, systemBars.right, systemBars.bottom);

return insets;

});

}

}

[5/15, 6:43 AM] Mohamed Faraazman: <?xml version="1.0" encoding="utf-8"?>

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

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

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

android:id="@+id/main"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<TextView

android:id="@+id/result"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="result will"

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="0.608" />

<Button

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Start Task"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

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

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Multi Threading"

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="0.165" />

<ProgressBar

android:id="@+id/progressBar"

style="?android:attr/progressBarStyleHorizontal"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:visibility="gone"

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="0.727" />

</androidx.constraintlayout.widget.ConstraintLayout>