**Experiment No. 01**

**Aim:**

Design a page with a background color and add an image.

**CO1:**

Design and develop user interfaces for mobile apps, using basic building blocks, UI components and application structure using Emulator.

**Procedure:**

**activity\_main.xml**

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

<RelativeLayout

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:background="#000000"

tools:context=".MainActivity">

<ImageView

android:id="@+id/imageView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_centerInParent="true"

android:src="@drawable/androidlogo"/>

</RelativeLayout>

**MainActivity.java**

package com.example.imagebgcolor;

import android.os.Bundle;

import android.widget.ImageView;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

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

}

}

**Output:**



**Result:**

The program was successfully executed and the result was obtained, thus CO1 was attained.

**Experiment No. 02**

**Aim:**

Find the sum of two numbers.

**CO1:**

Design and develop user interfaces for mobile apps, using basic building blocks, UI components and application structure using Emulator.

**Procedure:**

**activity\_main.xml**

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

<TableLayout 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="horizontal"

tools:context=".MainActivity">

<TableRow

android:layout\_width="wrap\_content"

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

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Enter Number 1:" />

<EditText

android:id="@+id/eid1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:inputType="text" />

</TableRow>

<TableRow

android:layout\_width="wrap\_content"

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

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Enter Number 2:" />

<EditText

android:id="@+id/eid2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:inputType="text" />

</TableRow>

<TableRow

android:layout\_width="wrap\_content"

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

<Button

android:id="@+id/b"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Calculate"/>

<TextView

android:id="@+id/txtid"

android:layout\_width="wrap\_content"

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

</TableRow>

</TableLayout>

**MainActivity.java**

package com.example.sumoftwo;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;

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;

EditText ed1, ed2;

TextView t1;

@SuppressLint("MissingInflatedId")

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

ed1=findViewById(R.id.eid1);

ed2=findViewById(R.id.eid2);

t1=findViewById(R.id.txtid);

b=findViewById(R.id.b);

b.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

String val1=ed1.getText().toString();

String val2=ed2.getText().toString();

Integer x=Integer.parseInt(val1);

Integer y=Integer.parseInt(val2);

Integer sum=x+y;

Toast.makeText(MainActivity.this, String.valueOf(sum), Toast.LENGTH\_SHORT).show();

}

});

}

}

**Output:**



**Result:**

The program was successfully executed and the result was obtained, thus CO1 was attained.

**Experiment No. 03**

**Aim:**

Check whether the number is Odd or Even.

**CO1:**

Design and develop user interfaces for mobile apps, using basic building blocks, UI components and application structure using Emulator.

**Procedure:**

**activity\_main.xml**

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

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:padding="50dp"

tools:context=".MainActivity">

<EditText

android:id="@+id/numberInput"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter a number"

android:inputType="number"/>

<Button

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

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

android:layout\_centerHorizontal="true"

android:layout\_marginTop="20dp"

android:text="Check Odd/Even"

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

</RelativeLayout>

**MainActivity.java**

package com.example.oddeven;

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 {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

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

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

checkButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

String inputText = numberInput.getText().toString();

if (inputText.isEmpty()) {

Toast.makeText(MainActivity.this, "Please enter a number", Toast.LENGTH\_SHORT).show();

} else {

int number = Integer.parseInt(inputText);

if (number % 2 == 0) {

Toast.makeText(MainActivity.this, number + " is EVEN", Toast.LENGTH\_SHORT).show();

} else {

Toast.makeText(MainActivity.this, number + " is ODD", Toast.LENGTH\_SHORT).show();

}

}

}

});

}

}

**Output:**

**Result:**

The program was successfully executed and the result was obtained, thus CO1 was attained.

**Experiment No. 04**

**Aim:**

Design a Simple Login Page.

**CO1:**

Design and develop user interfaces for mobile apps, using basic building blocks, UI components and application structure using Emulator.

**Procedure:**

**activity\_main.xml**

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

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:padding="50dp"

tools:context=".MainActivity">

<EditText

android:id="@+id/email"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Email"

android:inputType="textEmailAddress" />

<EditText

android:id="@+id/password"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

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

android:layout\_marginTop="20dp"

android:hint="Password"

android:inputType="textPassword" />

<Button

android:id="@+id/loginButton"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

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

android:layout\_marginTop="20dp"

android:text="Login" />

</RelativeLayout>

**MainActivity.java**

package com.example.loginpage;

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 email;

private EditText password;

private Button loginButton;

private final String predefinedEmail = "amal@icloud.com";

private final String predefinedPassword = "Amal@123";

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

email = findViewById(R.id.email);

password = findViewById(R.id.password);

loginButton = findViewById(R.id.loginButton);

loginButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

String enteredEmail = email.getText().toString();

String enteredPassword = password.getText().toString();

if (enteredEmail.equals(predefinedEmail) && enteredPassword.equals(predefinedPassword)) {

showToast("Login Successful");

} else {

showToast("Invalid Email or Password");

}

}

});

}

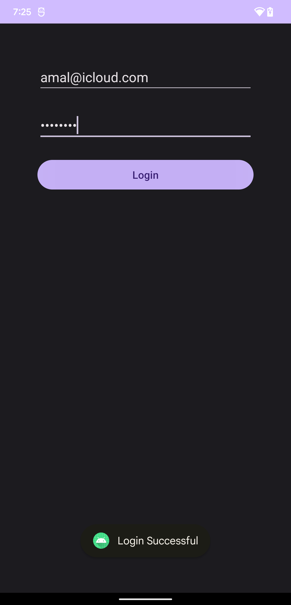
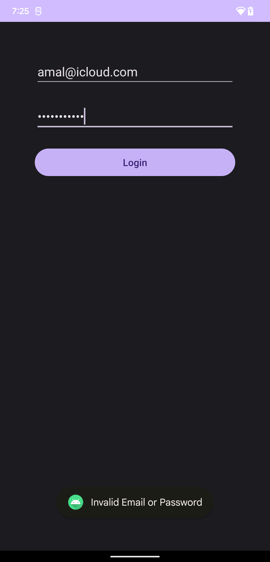
private void showToast(String message) {

Toast.makeText(this, message, Toast.LENGTH\_SHORT).show();

}

}

**Output:**

**Result:**

The program was successfully executed and the result was obtained, thus CO1 was attained.

**Experiment No. 05**

**Aim:**

Design a Simple Calculator.

**CO1:**

Design and develop user interfaces for mobile apps, using basic building blocks, UI components and application structure using Emulator.

**Procedure:**

**activity\_main.xml**

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

<LinearLayout

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:padding="50dp"

tools:context=".MainActivity">

<EditText

android:id="@+id/num1"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter number 1"

android:inputType="numberDecimal"/>

<EditText

android:id="@+id/num2"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Enter number 2"

android:inputType="numberDecimal"/>

<Button

android:id="@+id/add"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Add"/>

<Button

android:id="@+id/subtract"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Subtract"/>

<Button

android:id="@+id/multiply"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Multiply"/>

<Button

android:id="@+id/divide"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Divide"/>

</LinearLayout>

**MainActivity.java**

package com.example.simplecalculator;

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 num1, num2;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

num1 = findViewById(R.id.num1);

num2 = findViewById(R.id.num2);

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

Button subtractButton = findViewById(R.id.subtract);

Button multiplyButton = findViewById(R.id.multiply);

Button divideButton = findViewById(R.id.divide);

addButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

performCalculation("+");

}

});

subtractButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

performCalculation("-");

}

});

multiplyButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

performCalculation("\*");

}

});

divideButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

performCalculation("/");

}

});

}

private void performCalculation(String operator) {

String num1Str = num1.getText().toString();

String num2Str = num2.getText().toString();

if (num1Str.isEmpty() || num2Str.isEmpty()) {

showToast("Please enter both numbers.");

return;

}

double num1 = Double.parseDouble(num1Str);

double num2 = Double.parseDouble(num2Str);

double result = 0;

switch (operator) {

case "+":

result = num1 + num2;

break;

case "-":

result = num1 - num2;

break;

case "\*":

result = num1 \* num2;

break;

case "/":

if (num2 == 0) {

showToast("Division by zero is not allowed.");

return;

}

result = num1 / num2;

break;

}

showToast("Result: " + result);

}

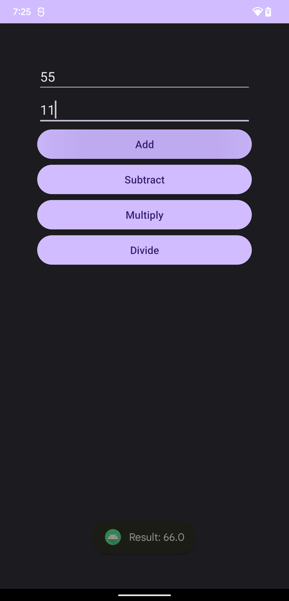
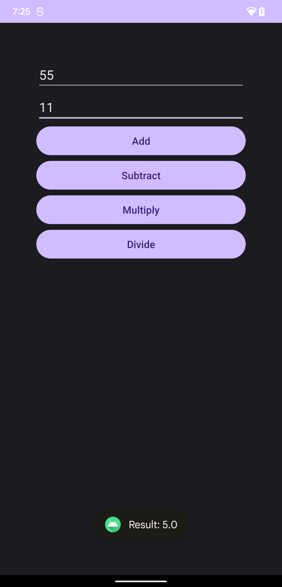
private void showToast(String message) {

Toast.makeText(this, message, Toast.LENGTH\_SHORT).show();

}

}

**Output:**

**Result:**

The program was successfully executed and the result was obtained, thus CO1 was attained.