**Experiment No. 1**

**Aim:** Design a Login Form with username and password using LinearLayout and toast valid

Credentials.

**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"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:padding="16dp">

<TextView

android:id="@+id/textView"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="LOGIN FORM"

android:textAlignment="center" />

<TextView

android:id="@+id/textView1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="USERNAME" />

<EditText

android:id="@+id/usernameEditText"

android:layout\_width="213dp"

android:layout\_height="wrap\_content"

android:layout\_marginTop="8dp"

android:hint="Enter username" />

<TextView

android:id="@+id/textView2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="PASSWORD"

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

<EditText

android:id="@+id/passwordEditText"

android:layout\_width="215dp"

android:layout\_height="wrap\_content"

android:layout\_marginTop="8dp"

android:hint="Enter password" />

<Button

android:id="@+id/loginButton"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Login" />

</LinearLayout>

**Main.activity.java**

package com.example.my\_apk;

import android.os.Bundle;

import android.view.View;

import android.widget.EditText;

import android.widget.Button;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private static final String VALID\_USERNAME="user";

private static final String VALID\_PASSWORD="password";

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.usernameEditText);

passwordEditText=findViewById(R.id.passwordEditText);

loginButton=findViewById(R.id.loginButton);

loginButton.setOnClickListener(v -> {

String enteredUsername=usernameEditText.getText().toString();

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

if(isValidCredentials(enteredUsername,enteredPassword)) {

showToast("Login Success }

else{

showToast("Invalid Credentials") });}

private boolean isValidCredentials(String enteredUsername, String enteredPassword){

return VALID\_USERNAME.equals(enteredUsername) && VALID\_PASSWORD.equals(enteredPassword);

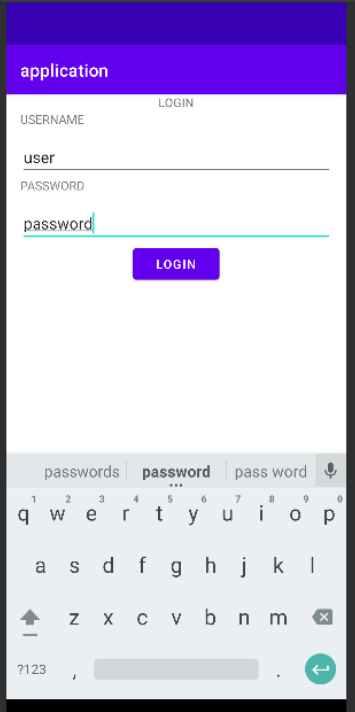
}

private void showToast(String message){

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

}}

**Output:**



**Result :** The program was executed successfully and the output was obtained.Thus CO1 was attained.

**Experiment No. 2**

**Aim:**

Write a program that demonstrates Activity Lifecycle.

**CO1:** Design and develop user interfaces for mobile apps using basic building blocks, UI components and application structure using Emulator.

**Procedure:**

Activity\_main

package com.example.cycle;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

showToast("Activity Created");

}

protected void onStart(){

super.onStart();

showToast("Activity Started");

}

protected void onResume(){

super.onResume();

showToast("Activity Resumed");

}

protected void onPause(){

super.onPause();

showToast("Activity Paused");

}

protected void onStop(){

super.onStop();

showToast("Activity Stopped");

}

protected void onRestart(){

super.onRestart();

showToast("Activity Restarted");

}

@Override

protected void onDestroy() {

super.onDestroy();

showToast("Activity Destroyed");

}

void showToast(String message){

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

}

}

MainActivity.java

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

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<TextView

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:text="Activity Life Cycle"

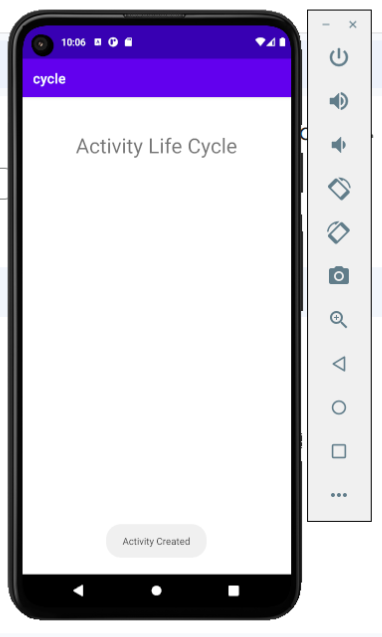
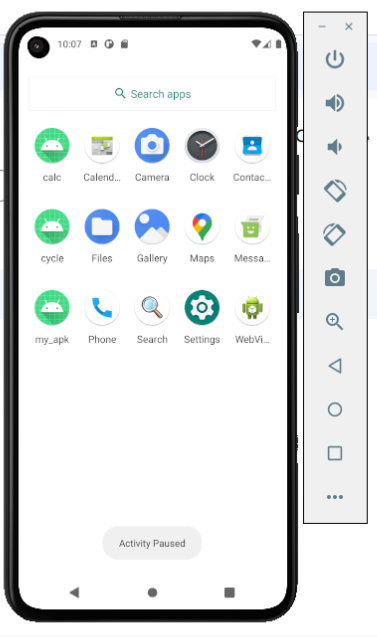
android:textAlignment="center"

android:layout\_marginTop="50dp"

android:textSize="30dp"/>

</androidx.constraintlayout.widget.ConstraintLayout>

**Output :**

**Result:** The program was executed successfully and the output was obtained.Thus CO1 was attained.

**Experiment No. 3**

**Aim:**

Implementing basic arithmetic operations of 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 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="30dp"

android:gravity="center\_horizontal">

<!-- Text View -->

<TextView

android:id="@+id/TextView1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Simple Calculator"

android:textColor="@color/black"

android:textSize="24sp"

android:layout\_gravity="center"

android:layout\_marginBottom="16dp"

android:textStyle="bold"/>

<!-- Edit Text-->

<EditText

android:id="@+id/EditText1"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_margin="30dp"

android:layout\_marginStart="50dp"

android:layout\_marginTop="50dp"

android:layout\_marginEnd="50dp"

android:layout\_marginBottom="50dp" />

<GridLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:rowCount="4"

android:columnCount="4"

android:layout\_gravity="center"

android:layout\_marginTop="40dp">

<Button

android:id="@+id/button1"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="1"

android:textSize="18sp"

android:onClick="onDigitClick"/>

<Button

android:id="@+id/button2"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="2"

android:textSize="18sp"

android:onClick="onDigitClick"/>

<Button

android:id="@+id/button3"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="3"

android:textSize="18sp"

android:onClick="onDigitClick"/>

<Button

android:id="@+id/buttonDiv"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="/"

android:textSize="18sp"

android:onClick="onOperatorClick"/>

<Button

android:id="@+id/button4"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="4"

android:textSize="18sp"

android:onClick="onDigitClick"/>

<Button

android:id="@+id/button5"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="5"

android:textSize="18sp"

android:onClick="onDigitClick"/>

<Button

android:id="@+id/button6"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="6"

android:textSize="18sp"

android:onClick="onDigitClick"/>

<Button

android:id="@+id/buttonMul"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="\*"

android:textSize="18sp"

android:onClick="onOperatorClick"/>

<Button

android:id="@+id/button7"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="7"

android:textSize="18sp"

android:onClick="onDigitClick"/>

<Button

android:id="@+id/button8"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="8"

android:textSize="18sp"

android:onClick="onDigitClick"/>

<Button

android:id="@+id/button9"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="9"

android:textSize="18sp"

android:onClick="onDigitClick"/>

<Button

android:id="@+id/buttonSub"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="-"

android:textSize="18sp"

android:onClick="onOperatorClick"/>

<Button

android:id="@+id/button0"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="0"

android:textSize="18sp"

android:onClick="onDigitClick"/>

<Button

android:id="@+id/buttonDot"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="C"

android:textSize="18sp"

android:onClick="onClearClick"/>

<Button

android:id="@+id/buttonEqual"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="="

android:textSize="18sp"

android:onClick="onEqualsClick"/>

<Button

android:id="@+id/buttonAdd"

android:layout\_width="0dp"

android:layout\_height="wrap\_content"

style="?android:attr/buttonStyleSmall"

android:layout\_columnWeight="1"

android:text="+"

android:textSize="18sp"

android:onClick="onOperatorClick"/>

</GridLayout>

</LinearLayout>

Main.activity

package com.example.calc;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

private TextView TextView1;

private Button button1;

private Button button2;

private Button button3;

private Button buttonDiv;

private Button button4;

private Button button5;

private Button button6;

private Button buttonMul;

private Button button7;

private Button button8;

private Button button9;

private Button buttonSub;

private Button button0;

private Button buttonDot;

private Button buttonEqual;

private Button buttonAdd;

private String currentInput = "";

private double operand1 = 0;

private String operator = "";

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

TextView1 = findViewById(R.id.TextView1);

}

public void onDigitClick(View view) {

Button button = (Button) view;

currentInput += button.getText().toString();

updateDisplay();

}

public void onOperatorClick(View view){

if (!currentInput.isEmpty()){

operand1 = Double.parseDouble(currentInput);

operator = ((Button) view).getText().toString();

currentInput = "";

}

}

public void onEqualsClick(View view){

if (!currentInput.isEmpty()){

double operand2 = Double.parseDouble(currentInput);

double result = performOperation(operand1,operand2,operator);

currentInput = String.valueOf((result));

updateDisplay();

}

}

public void onClearClick(View view){

currentInput = "";

operand1 = 0;

operator = "";

updateDisplay();

}

private double performOperation(double operand1, double operand2, String operator){

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;

}

default:

return 0;

}

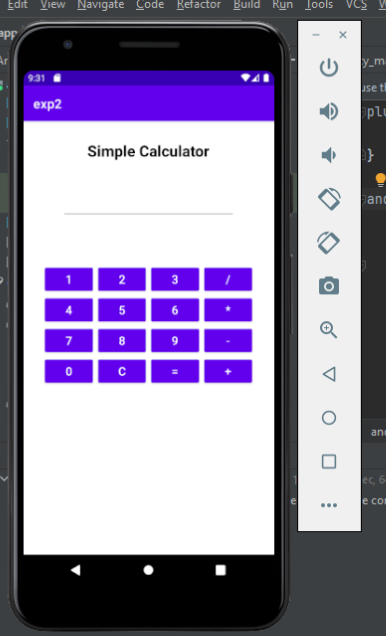
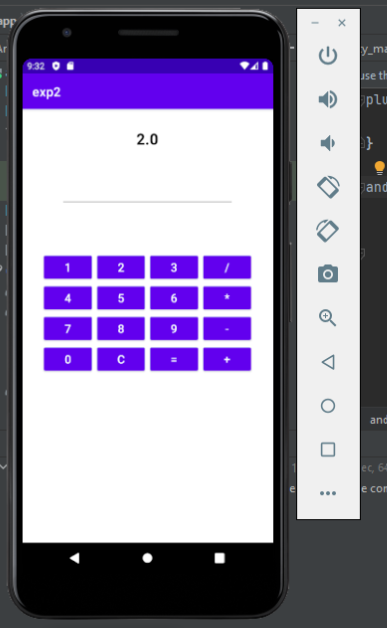
}

public void updateDisplay(){

TextView1.setText(currentInput);

}

**Output:**

**Result:**

The program was executed successfully and the output was obtained.Thus CO1 was attained.

**Experiment No. 4**

**Aim:** Implement validations on various UI controls

**CO1:**

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

**Procedure:**

Activity\_main

<?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="16dp"

tools:context=".MainActivity">

<Button

android:id="@+id/constraintButton"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="ConstraintLayout" />

<Button

android:id="@+id/linearButton"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="LinearLayout" />

<Button

android:id="@+id/gridButton"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="GridLayout" />

<Button

android:id="@+id/relativeButton"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="RelativeLayout" />

<Button

android:id="@+id/frameButton"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="FrameLayout" />

<Button

android:id="@+id/tableButton"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="TableLayout" />

</LinearLayout>

**MainActivity.java**

package com.example.ui;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

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

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

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

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

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

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

View.OnClickListener buttonClickListener = new View.OnClickListener() {

@Override

public void onClick(View v) {

String layoutName = ((Button) v).getText().toString();

displayToken(layoutName);}};

constraintButton.setOnClickListener(buttonClickListener);

linearButton.setOnClickListener(buttonClickListener);

gridButton.setOnClickListener(buttonClickListener);

relativeButton.setOnClickListener(buttonClickListener);

frameButton.setOnClickListener(buttonClickListener);

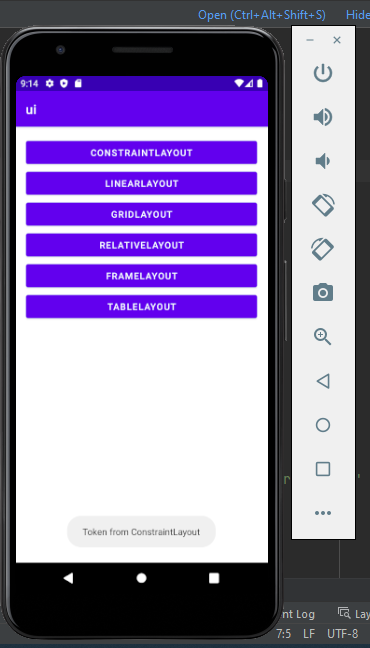
tableButton.setOnClickListener(buttonClickListener);}

private void displayToken(String layoutName) {

Toast.makeText(this, "Token from " + layoutName, Toast.LENGTH\_SHORT).show();

}}

**Output**



**Result:**The program was executed successfully and the output was obtained.Thus CO1 is obtained.

**Experiment No. 5**

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

**CO2:**

Write simple programs and develop small applications using the concepts of UI design, layouts and preferences

**Procedure:**

Activity\_main

<?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="16dp"

android:gravity="center"

<EditText

android:id="@+id/usernameEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Username"

android:inputType="text" />

<EditText

android:id="@+id/emailEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Email"

android:inputType="textEmailAddress" />

<EditText

android:id="@+id/passwordEditText"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Password"

android:inputType="textPassword" />

<Button

android:id="@+id/registerButton"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_gravity="center"

android:text="Register" />

</LinearLayout>

**MainActivity.java**

package com.example.registration;

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.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {

private EditText usernameEditText, emailEditText, passwordEditText;

private Button registerButton;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

usernameEditText = findViewById(R.id.usernameEditText);

emailEditText = findViewById(R.id.emailEditText);

passwordEditText = findViewById(R.id.passwordEditText);

registerButton = findViewById(R.id.registerButton);

registerButton.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

String username = usernameEditText.getText().toString();

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

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

// Store registration details in SharedPreferences

SharedPreferences preferences = getSharedPreferences("MyPrefs", MODE\_PRIVATE);

SharedPreferences.Editor editor = preferences.edit();

editor.putString("username", username);

editor.putString("email", email);

editor.putString("password", password);

editor.apply();

Toast.makeText(MainActivity.this, "Registration successful", Toast.LENGTH\_SHORT).show();

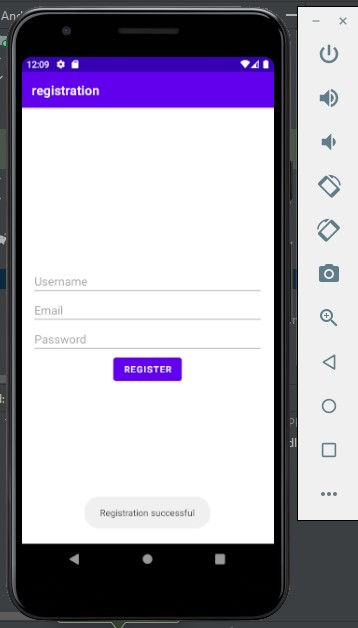
// Start another activity, e.g., MainActivity, using an Intent

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

startActivity(intent);

}

**Output:**



**Result :** The program was executed successfully and the output was obtained.Thus CO2 is obtained.

**Experiment No. 6**

**Aim:**

Create a Facebook page using RelativeLayout; set properties using .xml file.

**CO2:**

Write simple programs and develop small applications using the concepts of UI design, layouts and preferences

**Procedure:**

Activity\_main

<?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="fill\_parent"

android:layout\_height="fill\_parent"

android:paddingLeft="16dp"

android:paddingRight="16dp" >

<ScrollView

android:layout\_width="match\_parent"

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

<LinearLayout

android:layout\_width="fill\_parent"

android:layout\_height="fill\_parent"

android:orientation="vertical">

<ImageView

android:id="@+id/facebookView"

android:layout\_width="200dp"

android:layout\_height="80dp"

android:layout\_gravity="center"

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

<ImageView

android:id="@+id/imageView4"

android:layout\_width="match\_parent"

android:layout\_height="281dp"

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

<GridLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_gravity="center"

android:layout\_marginTop="40dp"

android:columnCount="4"

android:rowCount="4">

<!-- Like ImageView -->

<ImageView

android:id="@+id/likeImageView"

android:layout\_width="110dp"

android:layout\_height="83dp"

android:layout\_gravity="center"

android:clickable="true"

android:onClick="onLikeClick"

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

<!-- Comment ImageView -->

<ImageView

android:id="@+id/commentImageView"

android:layout\_width="111dp"

android:layout\_height="66dp"

android:layout\_row="0"

android:layout\_column="1"

android:layout\_gravity="center"

android:clickable="true"

android:onClick="onCommentClick"

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

<ImageView

android:id="@+id/shareImageView"

android:layout\_width="93dp"

android:layout\_height="86dp"

android:layout\_row="0"

android:layout\_column="3"

android:layout\_gravity="center"

android:clickable="true"

android:onClick="onShareClick"

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

</GridLayout>

<LinearLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:orientation="vertical">

<ImageView

android:id="@+id/imageView7"

android:layout\_width="match\_parent"

android:layout\_height="281dp"

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

<GridLayout

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_gravity="center"

android:layout\_marginTop="40dp"

android:columnCount="4"

android:rowCount="4">

<!-- Like ImageView -->

<ImageView

android:id="@+id/likeImageView2"

android:layout\_width="110dp"

android:layout\_height="83dp"

android:layout\_gravity="center"

android:clickable="true"

android:onClick="onLikeClick"

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

<!-- (Your existing ImageView code) -->

<!-- Comment ImageView -->

<ImageView

android:id="@+id/commentImageView2"

android:layout\_width="111dp"

android:layout\_height="66dp"

android:layout\_row="0"

android:layout\_column="1"

android:layout\_gravity="center"

android:clickable="true"

android:onClick="onCommentClick"

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

<ImageView

android:id="@+id/shareImageView2"

android:layout\_width="93dp"

android:layout\_height="86dp"

android:layout\_row="0"

android:layout\_column="3"

android:layout\_gravity="center"

android:clickable="true"

android:onClick="onShareClick"

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

<!-- (Your existing ImageView code) -->

</GridLayout>

</LinearLayout>

</LinearLayout>

</ScrollView>

</RelativeLayout>

MainActivity.java

package com.example.facebook;

import androidx.appcompat.app.AppCompatActivity;

import android.app.Activity;

import android.os.Bundle;

import android.view.View;

import android.widget.ImageView;

import android.widget.Toast;

public class MainActivity extends Activity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

// Find the ImageView elements by their IDs

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

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

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

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

// Set click listeners for the ImageViews

likeImageView.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

showToast("You clicked the Like button");

}

});

commentImageView.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

showToast("You clicked the Comment button");

}

});

shareImageView.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View v) {

showToast("You clicked the Share button");

}

});

}

// Helper method to display a toast message

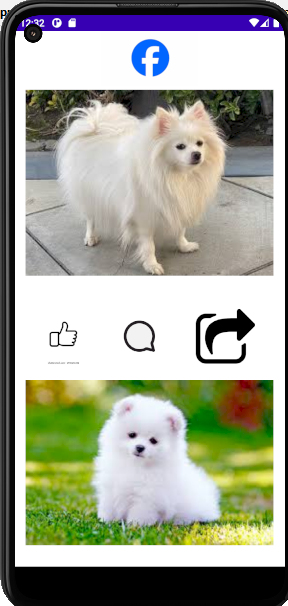
private void showToast(String message) {

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

}

}

**Output**



**Result:**

The program was executed successfully and the output was obtained.Thus CO3 is obtained.

**Experiment No. 7**

**Aim:**

Develop an application that toggles image using FrameLayout.

**CO2:**

Write simple programs and develop small applications using the concepts of UI design, layouts and preferences

**Procedure:**

**Activity\_main.xml**

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<ImageView

android:id="@+id/imageView"

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:scaleType="centerCrop"

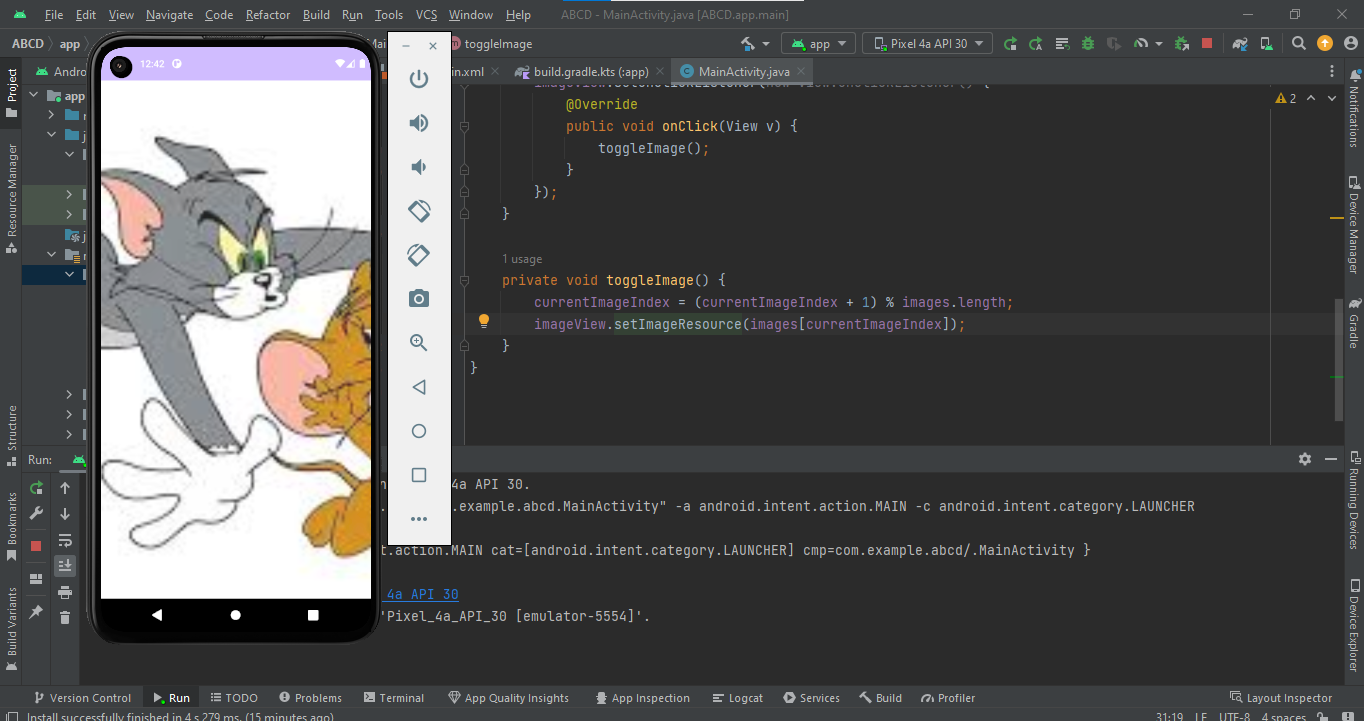
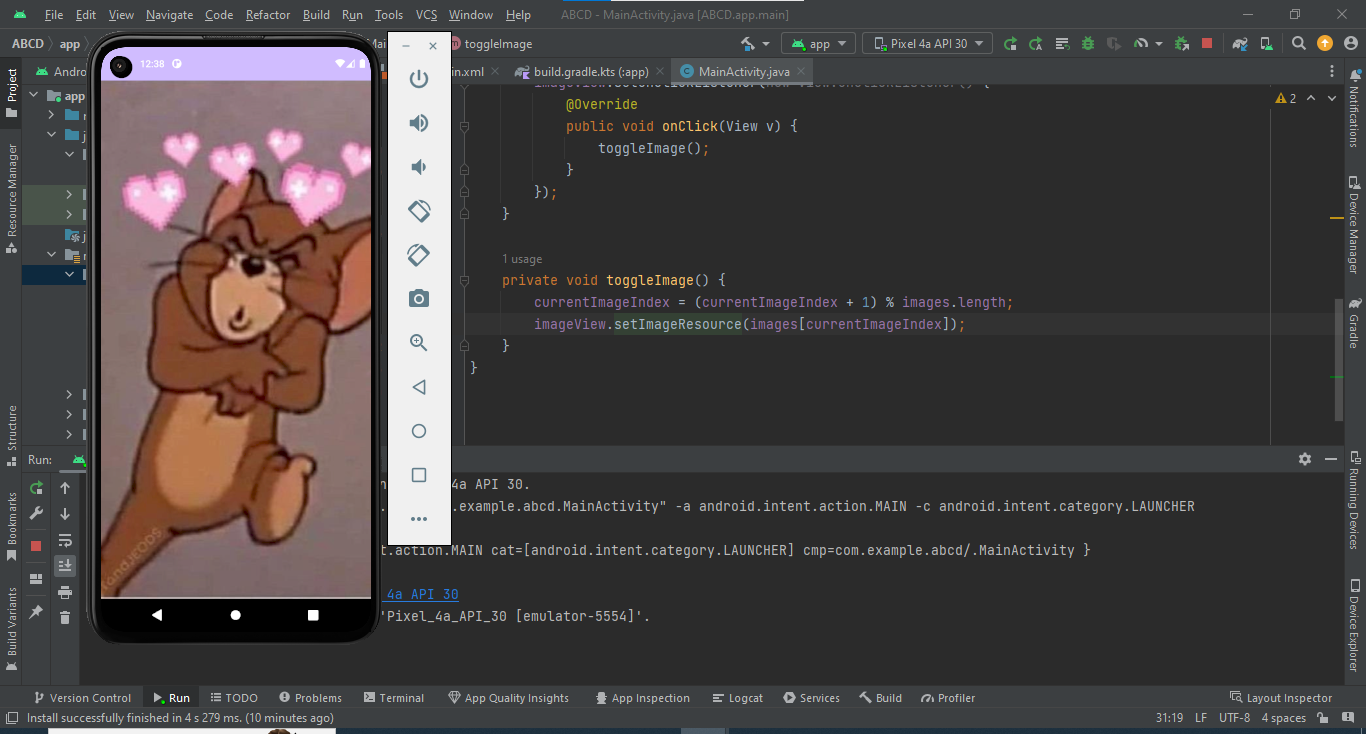
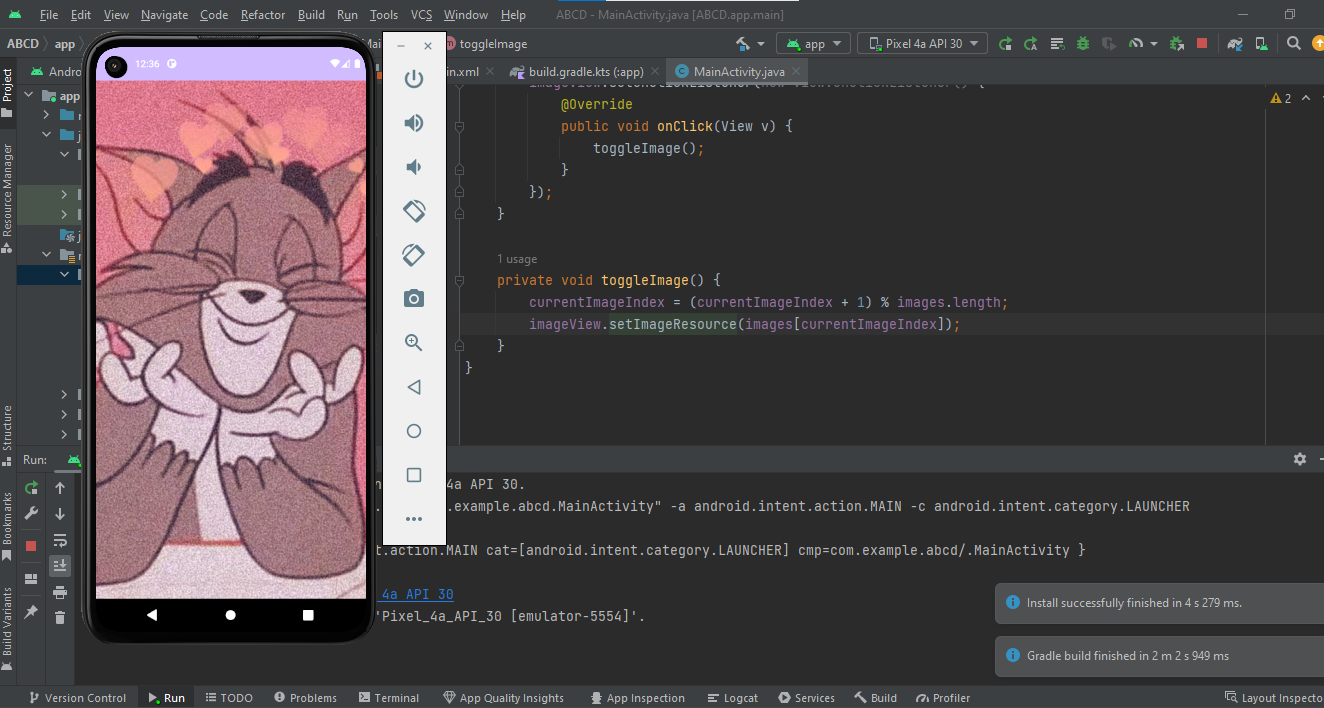
android:src="@drawable/image1" />

</FrameLayout>

**MainActivity.java**

package com.example.abcd  
import android.os.Bundle;  
import android.view.View;  
import android.widget.ImageView;  
import androidx.appcompat.app.AppCompatActivity;  
public class MainActivity extends AppCompatActivity {  
    private ImageView imageView;  
    private int[] images = {R.drawable.*image1*, R.drawable.*image2*, R.drawable.*image3*};  
    private int currentImageIndex = 0;  
  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.*activity\_main*);  
  
        imageView = findViewById(R.id.*imageView*);  
        imageView.setOnClickListener(new View.OnClickListener() {  
            @Override  
            public void onClick(View v) {  
                toggleImage();  
            }  
        });  
    }  
  
    private void toggleImage() {  
        currentImageIndex = (currentImageIndex + 1) % images.length;  
        imageView.setImageResource(images[currentImageIndex]);  
    }  
}

**Output:**



**Result:**

The program was executed successfully and the output was obtained.Thus CO3 is obtained.

**Experiment No. 8**

**Aim:**

Implement Adapters and perform exception handling.

**CO3:**

Develop applications with multiple activities using intents, array adapter, exceptions and options menu

**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"

tools:context=".MainActivity"

<ListView

android:id="@+id/list"

android:layout\_width="match\_parent"

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

</RelativeLayout>

**MainActivity.java**

package com.example.atry

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

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<5;i++){

try{

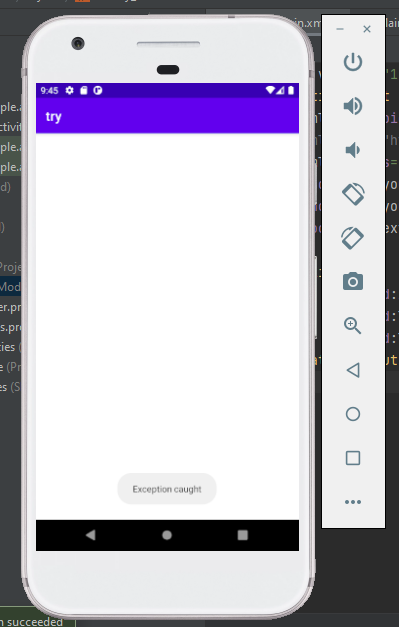
list.get(i);}

catch(Exception e){

Toast.makeText(this,"Exception caught",Toast.LENGTH\_LONG).show();

}}

**Output**

****

**Result :**

The program was executed successfully and the output was obtained.Thus CO3 is obtained.

**Experiment No. 9**

**Aim:**

Implement Intent to navigate between multiple activities.

**CO3:**

Develop applications with multiple activities using intents, array adapter, exceptions and options menu

**Procedure:**

**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">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="activity1"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

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

<Button

android:id="@+id/button"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Button"

android:onClick="switchActivity"

tools:layout\_editor\_absoluteX="158dp"

tools:layout\_editor\_absoluteY="390dp" /

</androidx.constraintlayout.widget.ConstraintLayout>

**MainActivity.java**

package com.example.activity1;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);}

public void switchActivity(View view){

Intent intent=new Intent(this, activity2.class);

intent.putExtra("user","anagha");

startActivity(intent);}

**activity\_2.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=".activity2"

<TextView

android:id="@+id/textView"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="activity2"

tools:layout\_editor\_absoluteX="172dp"

tools:layout\_editor\_absoluteY="354dp" />

</androidx.constraintlayout.widget.ConstraintLayout>

**activity2.java**

package com.example.activity1;

import androidx.appcompat.app.AppCompatActivity

import android.content.Intent;

import android.os.Bundle;

import android.widget.TextView

public class activity2 extends AppCompatActivity {

TextView tv;

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_2);

Intent intent=getIntent();

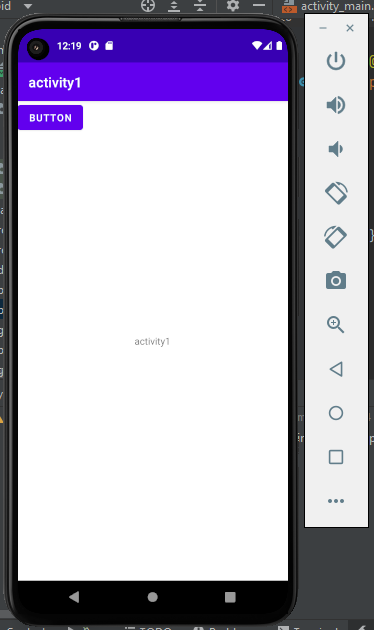
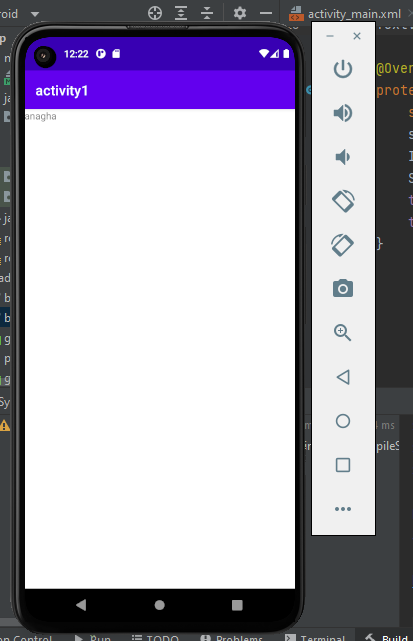
String user=intent.getStringExtra("user");

tv=findViewById(R.id.textView);

tv.setText(user);

}

**Output**

** **

**Result :** The program was executed successfully and the output was obtained.Thus CO3 is obtained.

.

**Experiment No. 10**

**Aim:**

Develop application that works with explicit intents.

**CO3:**

Develop applications with multiple activities using intents, array adapter, exceptions and options menu

**Procedure:**

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="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:padding="16dp"

android:gravity="center">

<EditText

android:id="@+id/e"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:inputType="text"

android:hint="enter the name" />

<EditText

android:id="@+id/e1"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:inputType="text"

android:hint="enter the age"/>

<Button

android:id="@+id/b1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:layout\_gravity="center"

android:onClick="switchActivity"

android:text="Submit" />

</LinearLayout>

**Activitymain.java**

package com.example.in3;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.View;

import android.widget.Button;

import android.widget.TextView;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

}

public void switchActivity(View view) {

TextView text = findViewById(R.id.e);

TextView text2 = findViewById(R.id.e1);

String data=text.getText().toString();

String data2=text2.getText().toString();

// Create an Intent to start MainActivity2

Intent intent = new Intent(this, MainActivity2.class);

// Put the data into the Intent

intent.putExtra("key",data );

intent.putExtra("key2", data2);

// Start MainActivity2 with the Intent

startActivity(intent);

}

}

Activitymain 2.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="16dp"

android:gravity="center">

<TextView

android:id="@+id/t1"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="TextView"

tools:layout\_editor\_absoluteX="181dp"

tools:layout\_editor\_absoluteY="190dp" />

<TextView

android:id="@+id/t2"

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="TextView"

tools:layout\_editor\_absoluteX="175dp"

tools:layout\_editor\_absoluteY="237dp" />

</LinearLayout>

Activity main 2.java

package com.example.in3;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.widget.TextView;

public class MainActivity2 extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main2);

Intent intent = getIntent();

String receivedData = intent.getStringExtra("key");

String receivedData2 = intent.getStringExtra("key2");

// Display the received data in a TextView or do whatever you want with it

TextView data = findViewById(R.id.t1); // replace with the actual ID of your TextView

data.setText(receivedData);

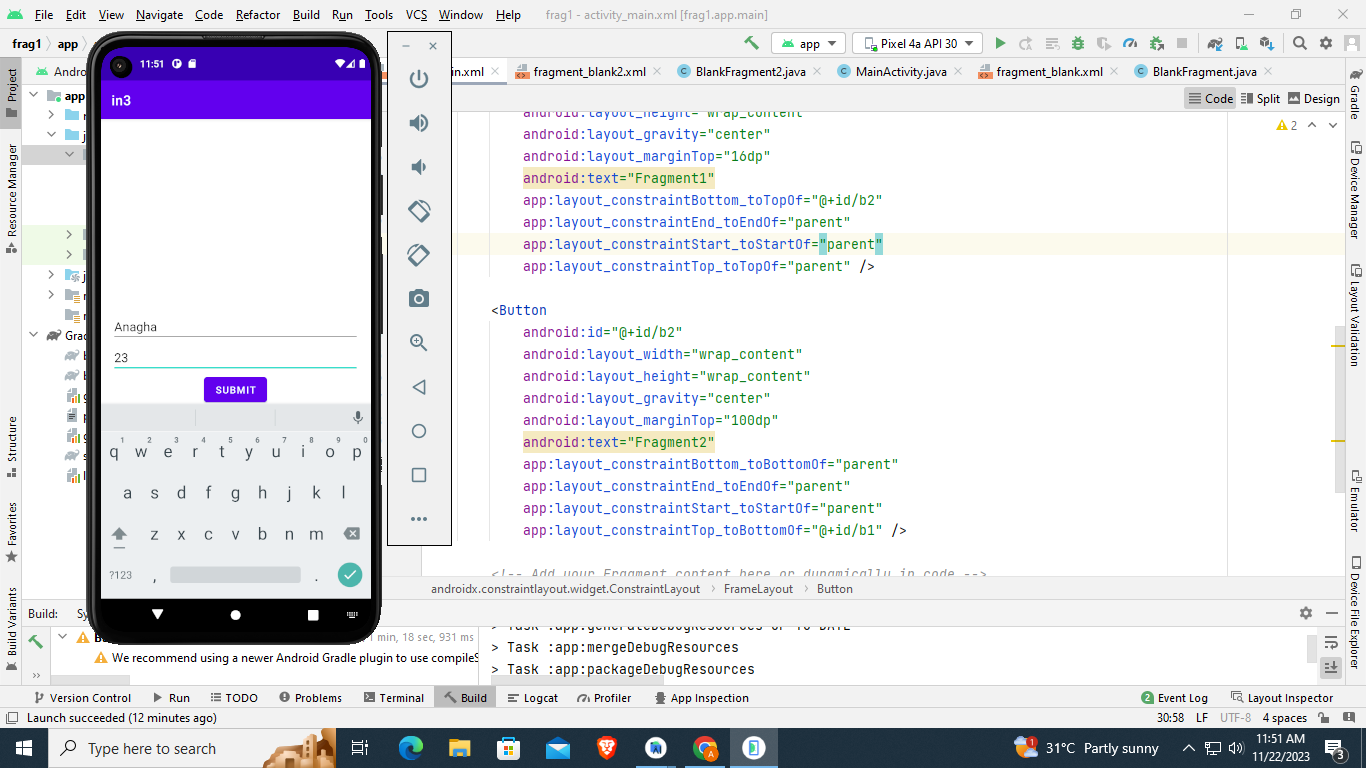
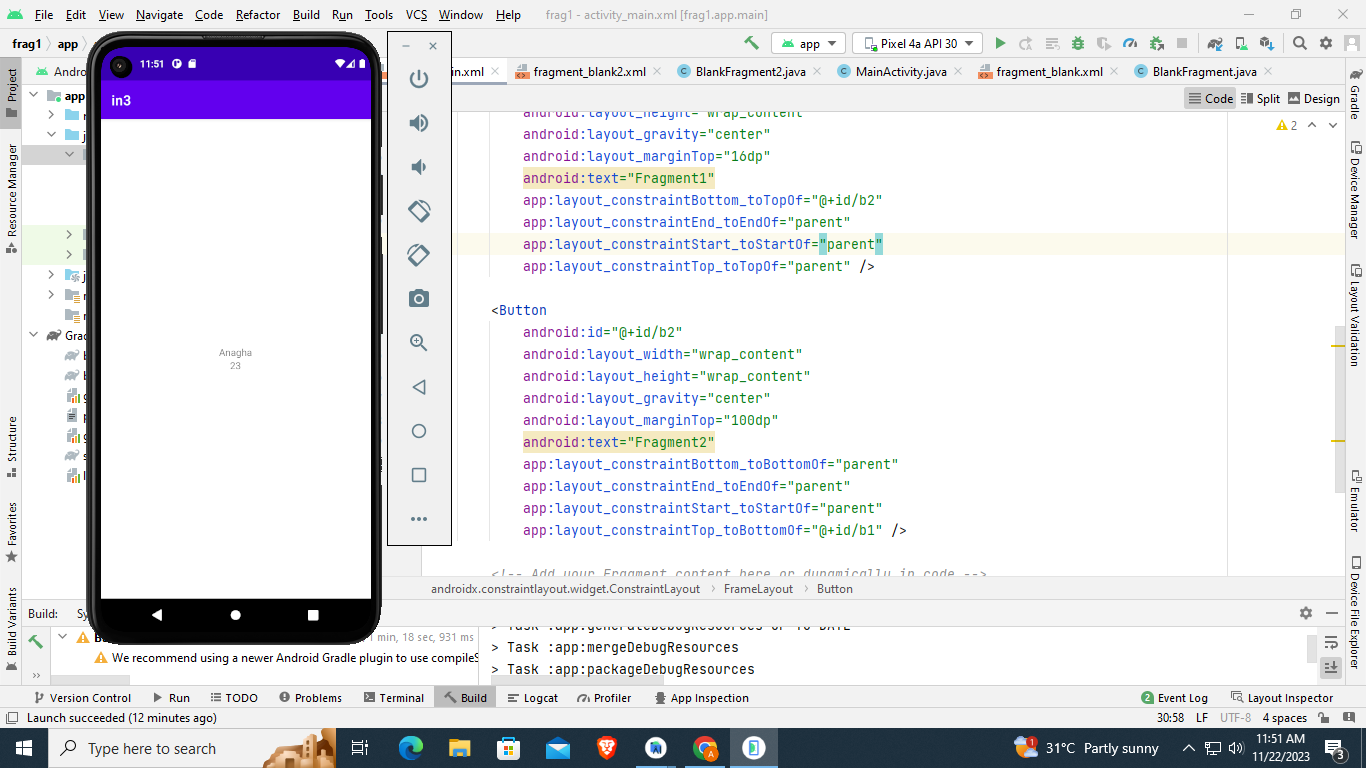
TextView data2 = findViewById(R.id.t2); // replace with the actual ID of your TextView

data2.setText(receivedData2);

}

}

**Output**

** **

**Result :** The program was executed successfully and the output was obtained.Thus CO3 is obtained.

**Experiment No. 11**

**Aim:**

Implement Options Menu to navigate to activities.

**CO3:**

Develop applications with multiple activities using intents, array adapter, exceptions and options menu

**Procedure:**

**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">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Hello World!"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

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

</androidx.constraintlayout.widget.ConstraintLayout>

**menu\_main.xml**

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

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

<item

android:id="@+id/settings"

android:title="settings"/>

<item

android:id="@+id/about"

android:title="about"/>

<item

android:id="@+id/msgs"

android:title="starred messages"/>

</menu>

**activity\_settingspage.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=".settingspage">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

android:text="Hello!"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

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

</androidx.constraintlayout.widget.ConstraintLayout>

**settingspage.java**

package com.example.option;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

public class settingspage extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_settingspage);

}}

**MainActivity.java**

package com.example.option;

import androidx.annotation.NonNull;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;

import android.os.Bundle;

import android.view.Menu;

import android.view.MenuInflater;

import android.view.MenuItem;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

}

@Override

public boolean onCreateOptionsMenu(Menu menu) {

MenuInflater inflater = getMenuInflater();

inflater.inflate(R.menu.menu\_main,menu);

return super.onCreateOptionsMenu(menu);

}

@Override

public boolean onOptionsItemSelected(@NonNull MenuItem item) {

switch(item.getItemId())

{

case R.id.settings:

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

startActivity(intent);

break;

case R.id.about:

Toast.makeText(this,"you clicked about",Toast.LENGTH\_LONG).show();

break;

case R.id.msgs:

Toast.makeText(this,"you clicked starred messages",Toast.LENGTH\_LONG).show();

break;

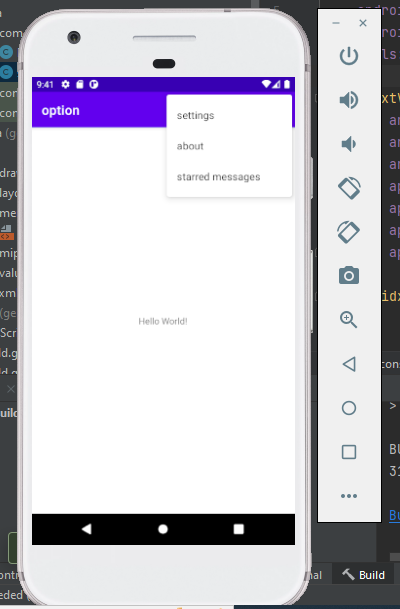
}

return super.onOptionsItemSelected(item);

}

}

**Output:**

****

**Result:** The program is executed successfully and the output is verified.Thus CO3 was attained.

**Experiment No. 12**

**Aim:**

Develop an application that uses ArrayAdapter with ListView

**CO3:**

Develop applications with multiple activities using intents, array adapter, exceptions and options menu

**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"

tools:context=".MainActivity" >

<ListView

android:id="@+id/MyLists"

android:layout\_width="match\_parent"

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

</RelativeLayout>

**Main\_Activity.java**

package com.example.days;

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", "Saturday"};

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

l = findViewById(R.id.MyLists);

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

l.setAdapter(adapter);

l.setOnItemClickListener(this);

}

@Override

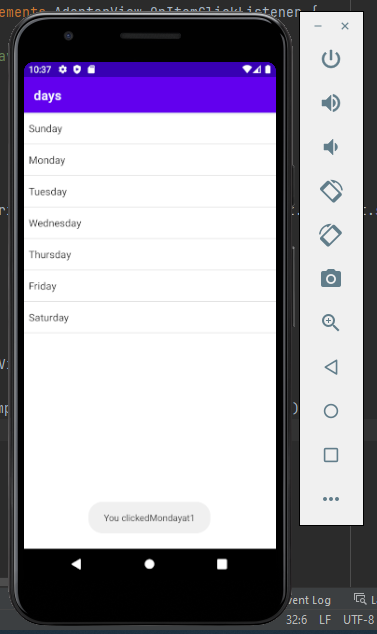
public void onItemClick(AdapterView<?> adapterView, View view, int position, long id) {

TextView temp = (TextView) view;

Toast.makeText(this,"You Clicked" +temp.getText()+ "at"+position,Toast.LENGTH\_SHORT).show();

}}

**Output:**

****

**Result:** The program is executed successfully and the output is verified.Thus CO3 was attained.

**Experiment No. 13**

**Aim:**

Develop an application that use GridView with images and display Alert box on selection.

**CO4:**

Implement activities with dialogs, spinner, fragments and navigation drawer by applying themes

**Procedure:**

**Activity\_main.xml**

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<GridView

android:id="@+id/grid"

android:numColumns="2"

android:horizontalSpacing="2dp"

android:verticalSpacing="2dp"

android:layout\_width="match\_parent"

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

</RelativeLayout>

**Grid\_item.xml**

<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="5dp">

<ImageView

android:id="@+id/imageView"

android:layout\_width="match\_parent"

android:layout\_height="100dp"

android:scaleType="centerCrop" />

<TextView

android:id="@+id/textView"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text=""

android:textAlignment="center"/>

</LinearLayout>

**MainActivity.java**

package com.example.gridview

import android.content.Context;

import android.content.DialogInterface;

import android.os.Bundle;

import android.view.LayoutInflater;

import android.view.View;

import android.view.ViewGroup;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.GridView;

import android.widget.ImageView;

import android.widget.LinearLayout;

import android.widget.TextView;

import android.widget.Toast;

import androidx.appcompat.app.AlertDialog;

import androidx.appcompat.app.AppCompatActivity;

import androidx.annotation.NonNull;

import androidx.annotation.Nullable;

public class MainActivity extends AppCompatActivity {

private String[] flowers = { "Jasmine",  "Lilly", "Sunflower", "Tulip"};

private int[] flowerImages = {

R.drawable.jasmine,

R.drawable.lilly,

R.drawable.sunflower,

R.drawable.tulip

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

GridView gridView = findViewById(R.id.grid);

CustomAdapter customAdapter = new CustomAdapter(this, flowers, flowerImages);

gridView.setAdapter(customAdapter);

gridView.setOnItemClickListener(new AdapterView.OnItemClickListener() {

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

showAlertDialog(flowers[position], flowerImages[position])

private void showAlertDialog(String flowerName, int imageResId) {

AlertDialog.Builder builder = new AlertDialog.Builder(this);

builder.setTitle("Selected Flower");

builder.setMessage("You have selected " + flowerName);

ImageView imageView = new ImageView(this);

imageView.setImageResource(imageResId);

builder.setView(imageView);

builder.setPositiveButton("OK", new DialogInterface.OnClickListener() {

@Override

public void onClick(DialogInterface dialog, int which) {

dialog.dismiss();

}

});

builder.show();

private static class CustomAdapter extends ArrayAdapter<String> {

private Context context;

private String[] flowers;

pvate int[] flowerImages;

public CustomAdapter(Context context, String[] flowers, int[] flowerImages) {

super(context, R.layout.grid\_item, flowers);

this.context = context;

this.flowers = flowers;

this.flowerImages = flowerImages

@NonNull

@Override

public View getView(int position, @Nullable View convertView, @NonNull ViewGroup parent) {

LayoutInflater inflater = (LayoutInflater) context.getSystemService(Context.LAYOUT\_INFLATER\_SERVICE);

View gridView;

if (convertView == null) {

gridView = new View(context);

gridView = inflater.inflate(R.layout.grid\_item, null);

TextView textView = gridView.findViewById(R.id.textView);

textView.setText(flowers[position]);

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

imageView.setImageResource(flowerImages[position]);

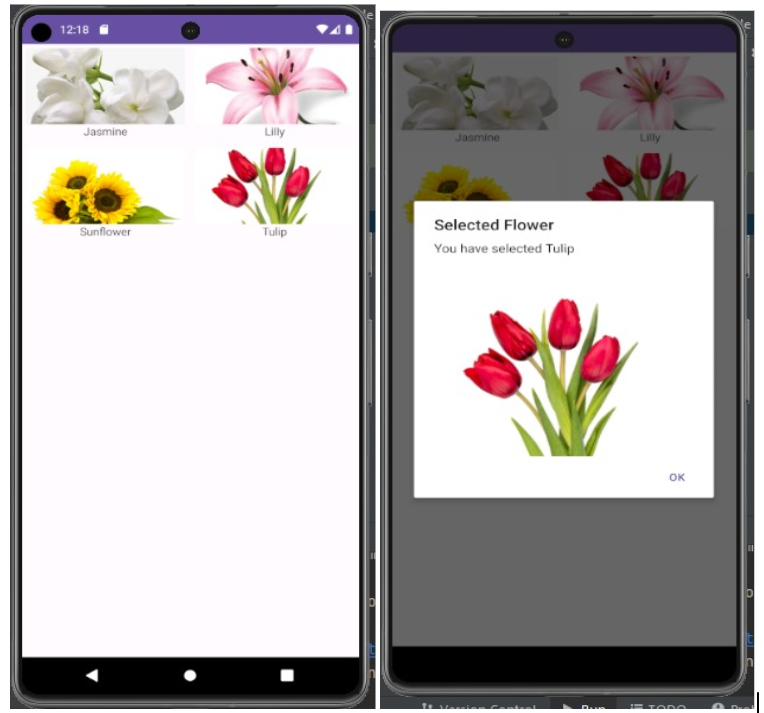
} else {

gridView = convertView;

return gridView;

}

**Output:**



**Result:** The program is executed successfully and the output is verified.Thus CO4 was attained.

**Experiment No. 14**

**Aim:**

Develop an application that implements Spinner component and perform event handling.

**CO4:**

Implement activities with dialogs, spinner, fragments and navigation drawer by applying themes

**Procedure:**

**Activity\_main.xml**

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

<LinearLayout

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:padding="16dp"

tools:context=".MainActivity">

<Spinner

android:id="@+id/coursesSpinner"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginTop="10dp"

android:layout\_marginBottom="10dp" />

</LinearLayout>

**ACTIVITYmain.java**

package com.example.spinnerapp;

import android.os.Bundle;

import android.view.View;

import android.widget.AdapterView;

import android.widget.ArrayAdapter;

import android.widget.Spinner;

import android.widget.Toast;

import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity implements AdapterView.OnItemSelectedListener {

String[] courses = {"C", "Data structures", "DSA with java", "OS"};

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

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

coursesSpinner.setOnItemSelectedListener(this);

ArrayAdapter<String> adapter = new ArrayAdapter<>(

this,

android.R.layout.simple\_spinner\_item,

courses

);

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

coursesSpinner.setAdapter(adapter);

}

@Override

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

Toast.makeText(getApplicationContext(), courses[position], Toast.LENGTH\_LONG).show();

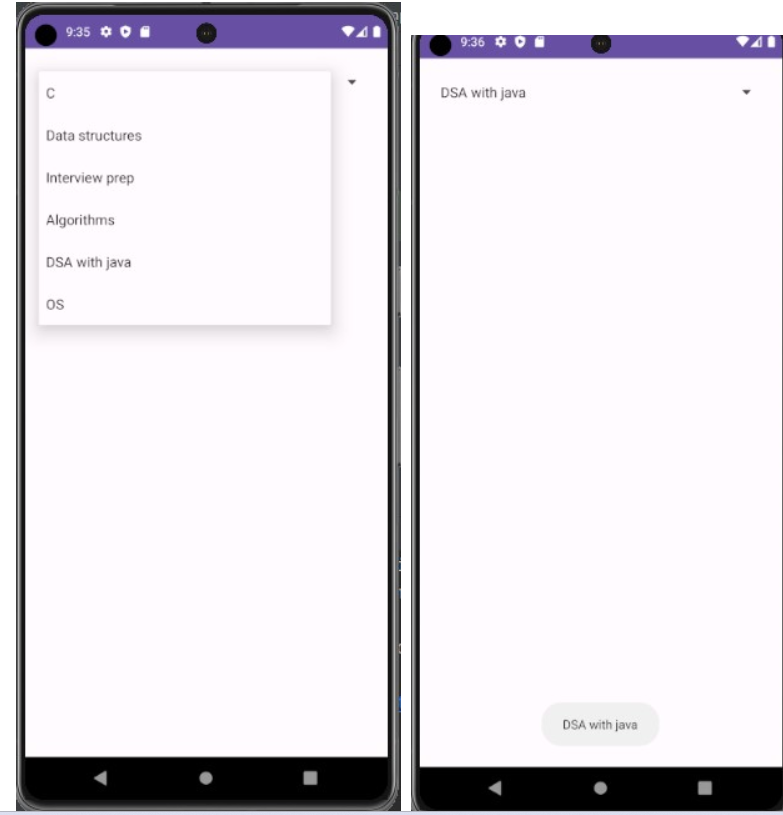
}

@Override

public void onNothingSelected(AdapterView<?> parent) {

}}

**OUTPUT :**

****

**Result:**

The program is executed successfully and the output is verified.Thus CO4 was attained.

**Experiment No. 15**

**Aim:**

Develop application using Fragments.

**CO4:**

Implement activities with dialogs, spinner, fragments and navigation drawer by applying themes

**Procedure:**

**Activity\_main.xml**

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

<FrameLayout

android:id="@+id/fragment\_container"

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<TextView

android:layout\_width="wrap\_content"

android:layout\_height="wrap\_content"

app:layout\_constraintBottom\_toBottomOf="parent"

app:layout\_constraintEnd\_toEndOf="parent"

app:layout\_constraintStart\_toStartOf="parent"

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

<Button

android:id="@+id/fragment1"

android:layout\_width="100dp"

android:layout\_height="50dp"

android:layout\_marginStart="200dp"

android:layout\_marginTop="100"

android:layout\_marginEnd="100dp"

android:text="Fragment1"

android:textSize="10dp"

tools:layout\_editor\_absoluteX="16dp"

tools:layout\_editor\_absoluteY="16dp" />

<Button

android:id="@+id/fragment2"

android:layout\_width="100dp"

android:layout\_height="50dp"

android:layout\_marginStart="200dp"

android:layout\_marginTop="150"

android:layout\_marginEnd="300dp"

android:text="Fragment2"

android:textSize="10dp"

tools:ignore="MissingConstraints"

tools:layout\_editor\_absoluteX="17dp"

tools:layout\_editor\_absoluteY="67dp" />

</FrameLayout>

**Activity\_main.java**

package com.example.fragment;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

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 buttonFragment1 = findViewById(R.id.fragment1);

Button buttonFragment2 = findViewById(R.id.fragment2);

buttonFragment1.setOnClickListener(new View.OnClickListener() {

public void onClick(View v) {

getSupportFragmentManager().beginTransaction()

.replace(R.id.fragment\_container, new firstfragment())

.commit();

} });

buttonFragment2.setOnClickListener(new View.OnClickListener() {

@Override

public void onClick(View view) {

getSupportFragmentManager().beginTransaction()

.replace(R.id.fragment\_container, new secondfragment())

.commit();

} }); }}

**FirstFragment.xml**

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".firstfragment">

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

<TextView

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:text="First Fragment" />

</FrameLayout>

**SecondFragment.xml**

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".secondfragment">

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

<TextView

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:text="Second fragment" />

</FrameLayout>

**Output:**

****

**Result:** The program is executed Successfully and the output is verified.Thus CO4 was attained.

**Experiment No. 16**

**Aim:**

Implement Navigation drawer.

**CO4:**

Implement activities with dialogs, spinner, fragments and navigation drawer by applying themes

**Procedure:**

**Main\_activty.xml**

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

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

tools:context=".MainActivity">

<ListView

android:id="@+id/listview"

android:layout\_width="wrap\_content"

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

</RelativeLayout>

**Activity\_main.java**

package com.example.exception2;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;

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("Item1");

list.add("Item2");

list.add("Item3");

list.add("Item4");

for(int i=0;i<5;i++){

try{

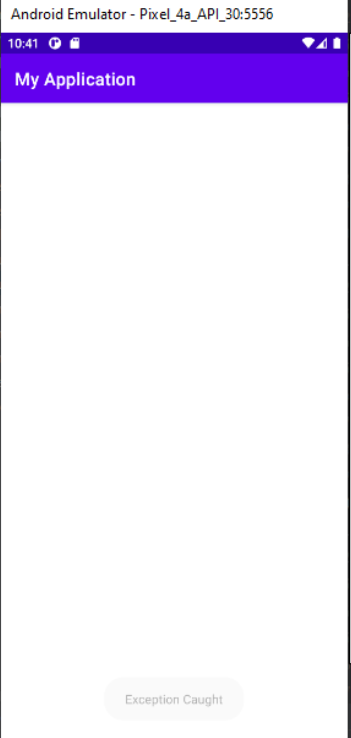
list.get(i); }

catch (Exception e){

Toast.makeText(this,"Exception caught0",Toast.LENGTH\_LONG).show();

} } }}

**Output :**

****

**Result:** The program is executed successfully and the output is verified.Thus CO4 was attained.

**Experiment No. 17**

**Aim:**

Create database using SQLite and perform INSERT and SELECT.

**CO5:**

Develop mobile applications using SQLite

**Procedure:**

**Activity\_main.XML**

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:padding="16dp"

tools:context=".MainActivity">

<EditText

android:id="@+id/ed1"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginBottom="16dp"

android:hint="rollno" />

<EditText

android:id="@+id/ed2"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Name"

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

<EditText

android:id="@+id/ed3"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Address"

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

<Button

android:id="@+id/btnInsert"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Insert"

android:onClick="insertDB"

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

<Button

android:id="@+id/btnRead"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Read"

android:onClick="readDB"/>

</LinearLayout>

**DbHelper.java**

package com.example.crudapp;

import android.content.Context;

import android.database.sqlite.SQLiteDatabase;

import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DbHelper extends SQLiteOpenHelper {

public DbHelper(@Nullable Context context) {

super(context, "student.db", null, 1);

}

public void onCreate(SQLiteDatabase sqLiteDatabase) {

sqLiteDatabase.execSQL("create table stud\_tbl(rollno int ,name varchar(10),address varchar(25))");

@Override

public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {

}

**MainActivity.java**

package com.example.crudapp;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;

import android.content.ContentValues;

import android.database.Cursor;

import android.database.sqlite.SQLiteDatabase;

import android.os.Bundle;

import android.view.View;

import android.widget.EditText;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

EditText e1,e2,e3;

DbHelper helper= new DbHelper(this);

SQLiteDatabase db;

@SuppressLint("MissingInflatedId")

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

db=helper.getReadableDatabase();

db=helper.getWritableDatabase();

e1=findViewById(R.id.ed1);

e2=findViewById(R.id.ed2);

e3=findViewById(R.id.ed3);

public void insertDB(View view) {

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

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

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

ContentValues data=new ContentValues();

data.put("rollno",r);

data.put("name",n);

data.put("address",a);

db.insert("stud\_tbl",null,data);

Toast.makeText(this, "Data Inserted", Toast.LENGTH\_LONG).show();

public void readDB(View view) {

StringBuffer buffer=new StringBuffer();

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

while (c.moveToNext()){

buffer.append("ID:"+c.getString(0)+"\t");

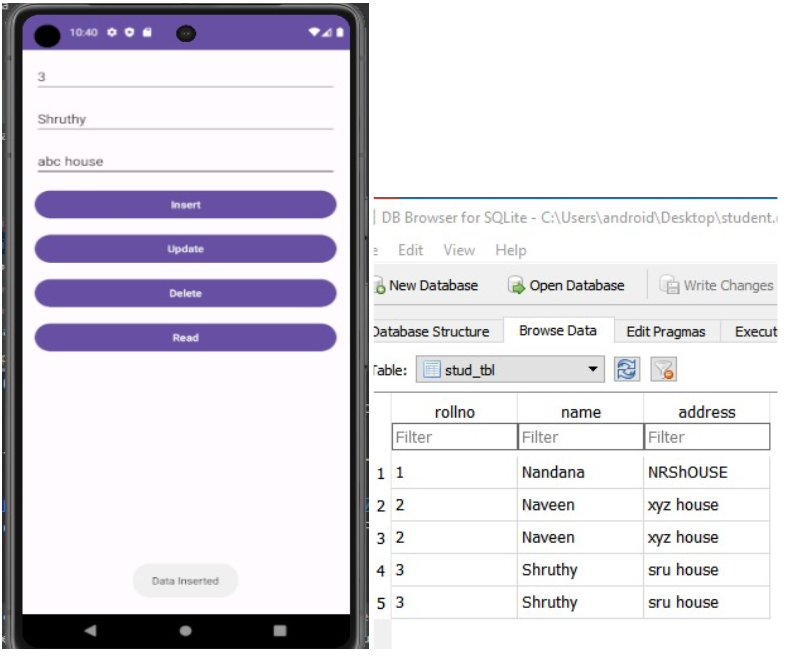
buffer.append("NAME:"+c.getString(1)+"\t");

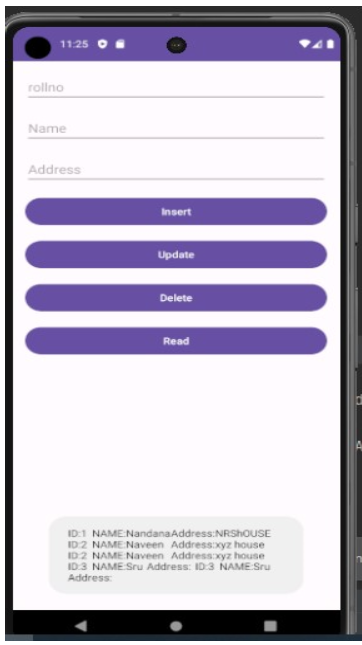
buffer.append("Address:"+c.getString(2)+"\t");}

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

}

**Output :**

****

****

**Result:** The program is executed successfully and the output is verified.Thus CO5 was attained.

**Experiment No. 18**

**Aim:**

Perform UPDATE and DELETE on SQLite database.

**CO5:**

Develop mobile applications using SQLite

**Procedure:**

**Activity\_main.XML**

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

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

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

android:layout\_width="match\_parent"

android:layout\_height="match\_parent"

android:orientation="vertical"

android:padding="16dp"

tools:context=".MainActivity">

<EditText

android:id="@+id/ed1"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:layout\_marginBottom="16dp"

android:hint="rollno" />

<EditText

android:id="@+id/ed2"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Name"

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

<EditText

android:id="@+id/ed3"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:hint="Address"

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

<Button

android:id="@+id/btnInsert"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Insert"

android:onClick="insertDB"

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

<Button

android:id="@+id/btnUpdate"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Update"

android:onClick="updateDB"

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

<Button

android:id="@+id/btnDelete"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Delete"

android:onClick="deleteDB"

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

<Button

android:id="@+id/btnRead"

android:layout\_width="match\_parent"

android:layout\_height="wrap\_content"

android:text="Read"

android:onClick="readDB"/>

</LinearLayout>

**DbHelper.java**

package com.example.crudapp;

import android.content.Context;

import android.database.sqlite.SQLiteDatabase;

import android.database.sqlite.SQLiteOpenHelper;

import androidx.annotation.Nullable;

public class DbHelper extends SQLiteOpenHelper {

public DbHelper(@Nullable Context context) {

super(context, "student.db", null, 1);

}

@Override

public void onCreate(SQLiteDatabase sqLiteDatabase) {

sqLiteDatabase.execSQL("create table stud\_tbl(rollno int ,name varchar(10),address varchar(25))");

}

@Override

public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {

}

}

**MainActivity.java**

package com.example.crudapp;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;

import android.content.ContentValues;

import android.database.Cursor;

import android.database.sqlite.SQLiteDatabase;

import android.os.Bundle;

import android.view.View;

import android.widget.EditText;

import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

EditText e1,e2,e3;

DbHelper helper= new DbHelper(this);

SQLiteDatabase db;

@SuppressLint("MissingInflatedId")

@Override

protected void onCreate(Bundle savedInstanceState) {

super.onCreate(savedInstanceState);

setContentView(R.layout.activity\_main);

//important steps

//        DbHelper helper= new DbHelper(this);

//        SQLiteDatabase db;

db=helper.getReadableDatabase();

db=helper.getWritableDatabase();

//important steps

e1=findViewById(R.id.ed1);

e2=findViewById(R.id.ed2);

e3=findViewById(R.id.ed3);

}

public void insertDB(View view) {

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

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

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

ContentValues data=new ContentValues();

data.put("rollno",r);

data.put("name",n);

data.put("address",a);

db.insert("stud\_tbl",null,data);

Toast.makeText(this, "Data Inserted", Toast.LENGTH\_LONG).show();

}

public void updateDB(View view) {

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

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

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

ContentValues data=new ContentValues();

data.put("rollno",r);

data.put("name",n);

data.put("address",a);

db.update("stud\_tbl",data,"rollno="+r,null);

Toast.makeText(this, "Data Updated...", Toast.LENGTH\_LONG).show();

}

public void deleteDB(View view) {

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

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

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

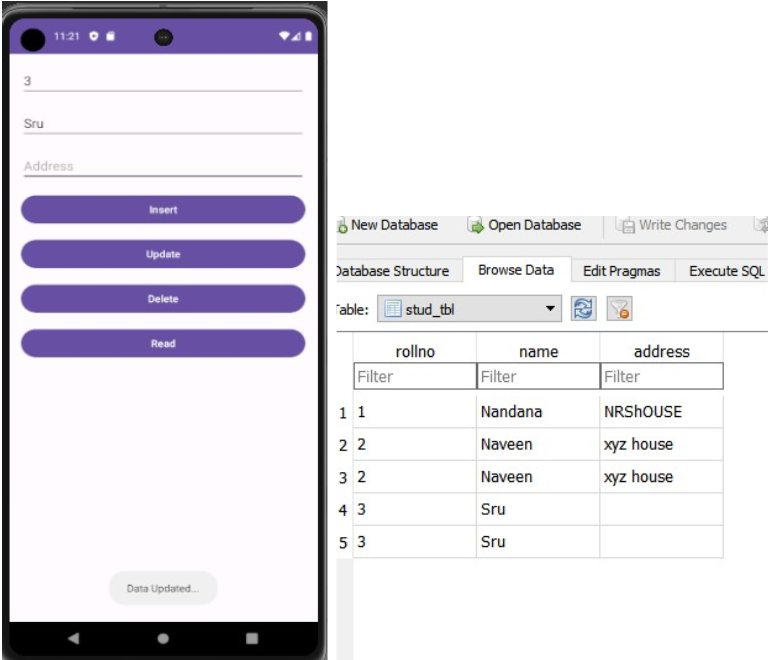
db.delete("stud\_tbl","rollno="+r,null);

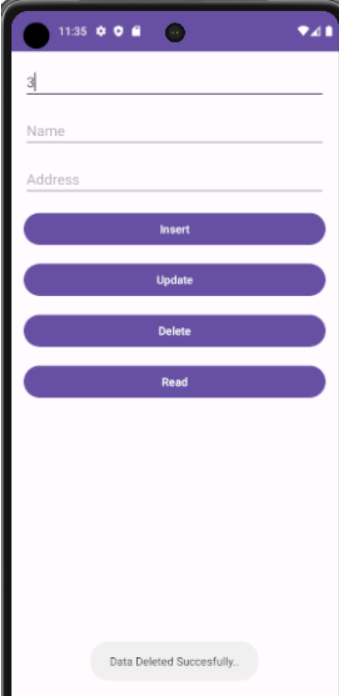
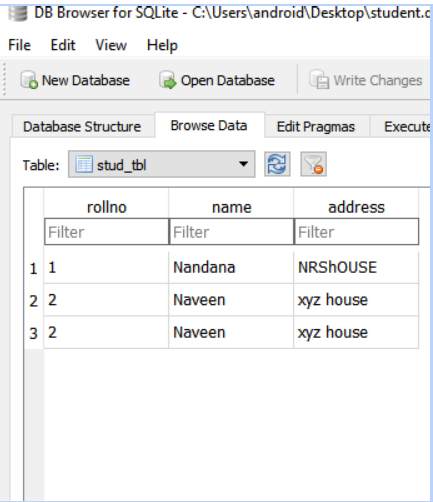
Toast.makeText(this, "Data Deleted Succesfully..", Toast.LENGTH\_LONG).show();

}

}

**OUTPUT :**

****

**** ****

**Result:** The program is executed successfully and the output is verified.Thus CO5 was attained.