

## **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"
```

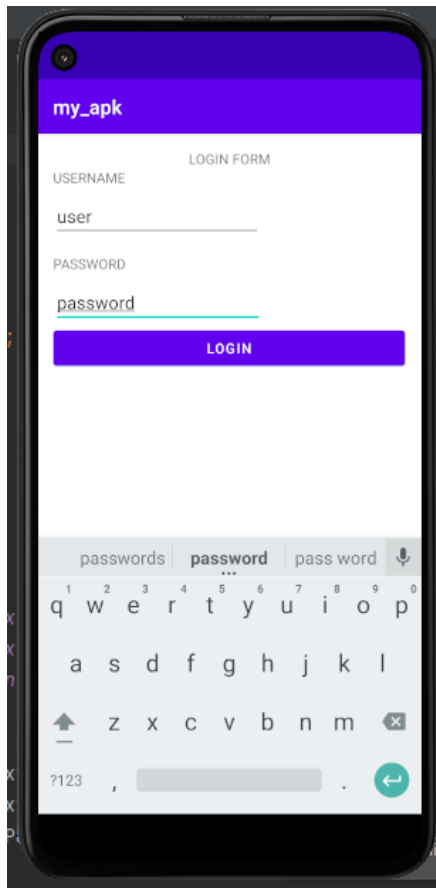
```
        android:layout_height="wrap_content"
        android:text="PASSWORD"
        android:layout_marginTop="16dp"/>
<EditText
    android:id="@+id/passwordEditText"
    android:layout_width="215dp"
    android:layout_height="wrap_content"
    android:layout_marginTop="8dp"
    android:hint="Enter 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 Successful");}  
        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 has been attained.

## **Experiment No. 2**

**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.

**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"?>
<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.java**

```
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 and CO2 has been attained.

### **Experiment No. 3**

**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.xml**

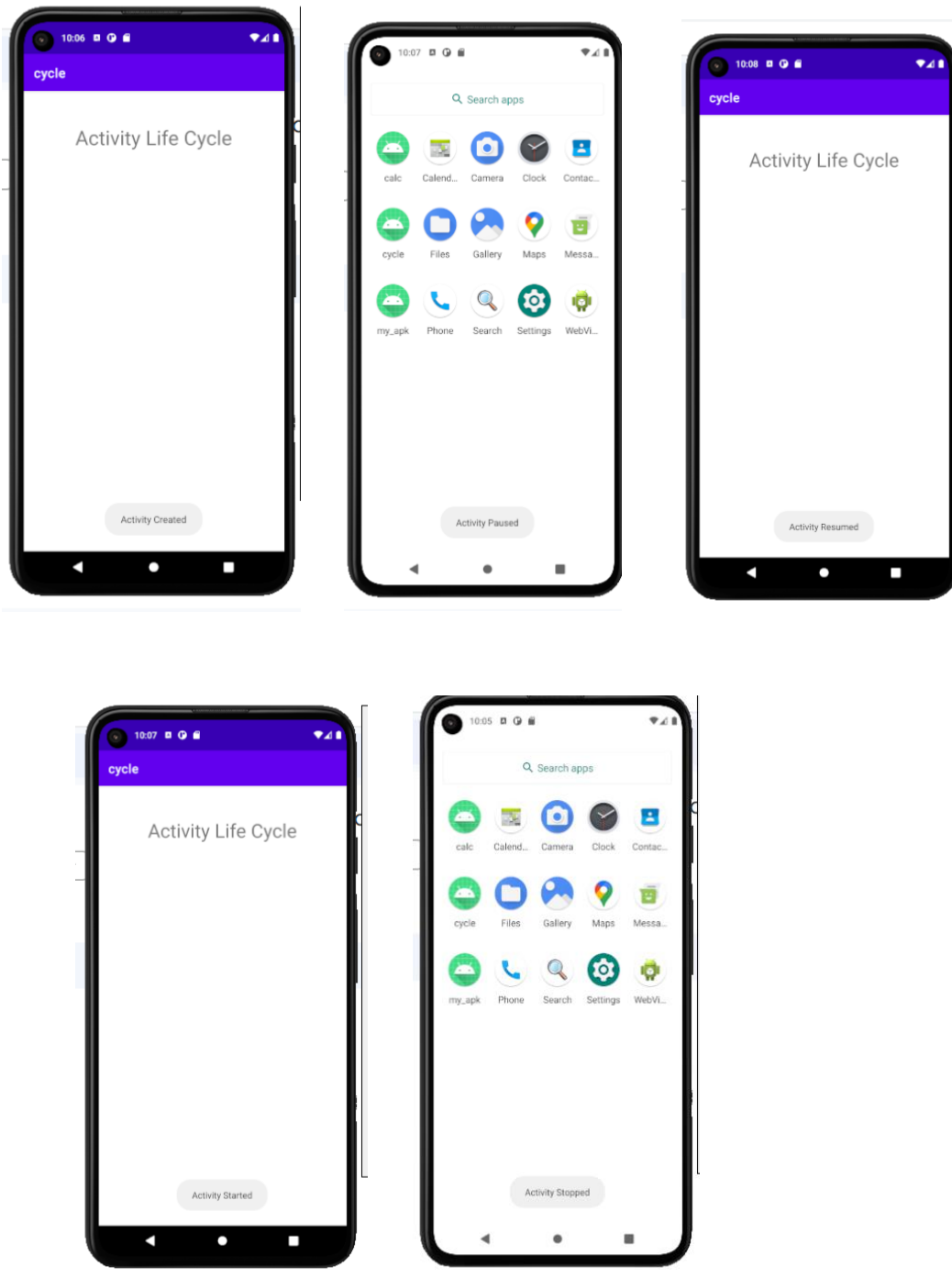
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView
        android:layout_width="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>
```

#### **MainActivity.java**

```
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();
    }
}
```

## Output



**Result:** The program was executed successfully and the output was obtained. Thus, CO1 has been 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.

**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"?>
<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>
```

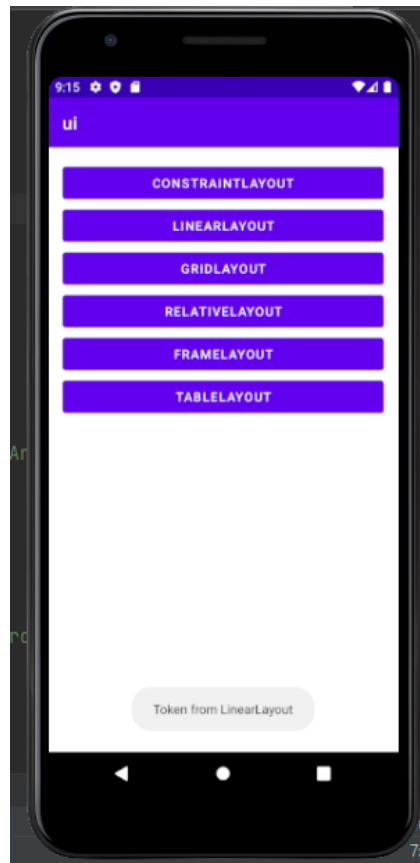
### **MainActivity.java**

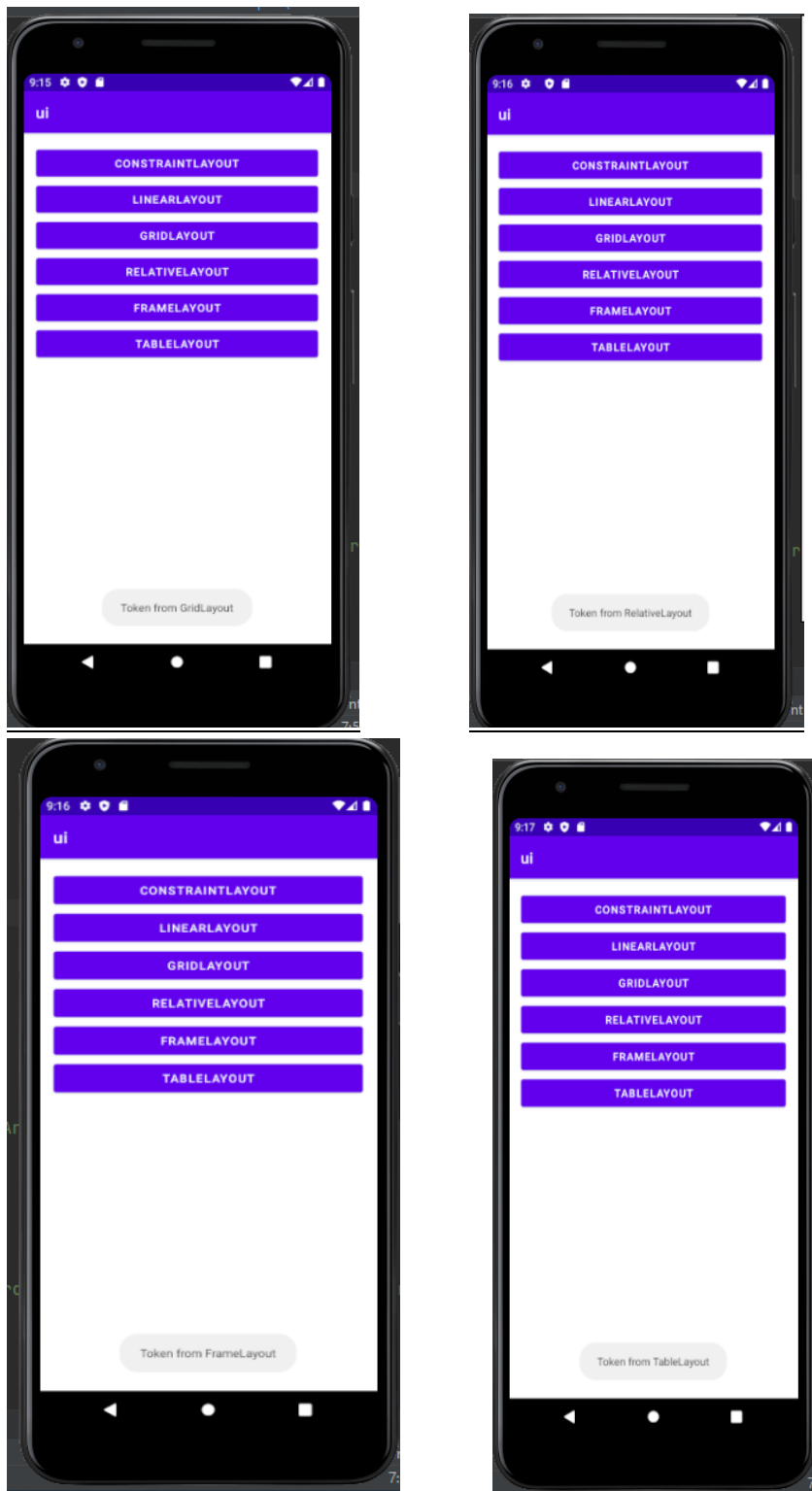
```
package com.example.ui;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.Toast;
import androidx.appcompat.app.AppCompatActivity;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        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);
            }
        };
    }
}
```



```
    }    };\n\n    constraintButton.setOnClickListener(buttonClickListener);\n    linearButton.setOnClickListener(buttonClickListener);\n    gridButton.setOnClickListener(buttonClickListener);\n    relativeButton.setOnClickListener(buttonClickListener);\n    frameButton.setOnClickListener(buttonClickListener);\n    tableButton.setOnClickListener(buttonClickListener);\n}\n\nprivate void displayToken(String layoutName) {\n    Toast.makeText(this, "Token from " + layoutName, Toast.LENGTH_SHORT).show();\n}\n}
```

## Output





**Result:** The program was executed successfully and the output was obtained. Thus, CO1 and CO2 has been attained.

## **Experiment No. 5**

**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**

```
<?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() {
            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() {
            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, CO1 has been attained.

## **Experiment No. 6**

**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**

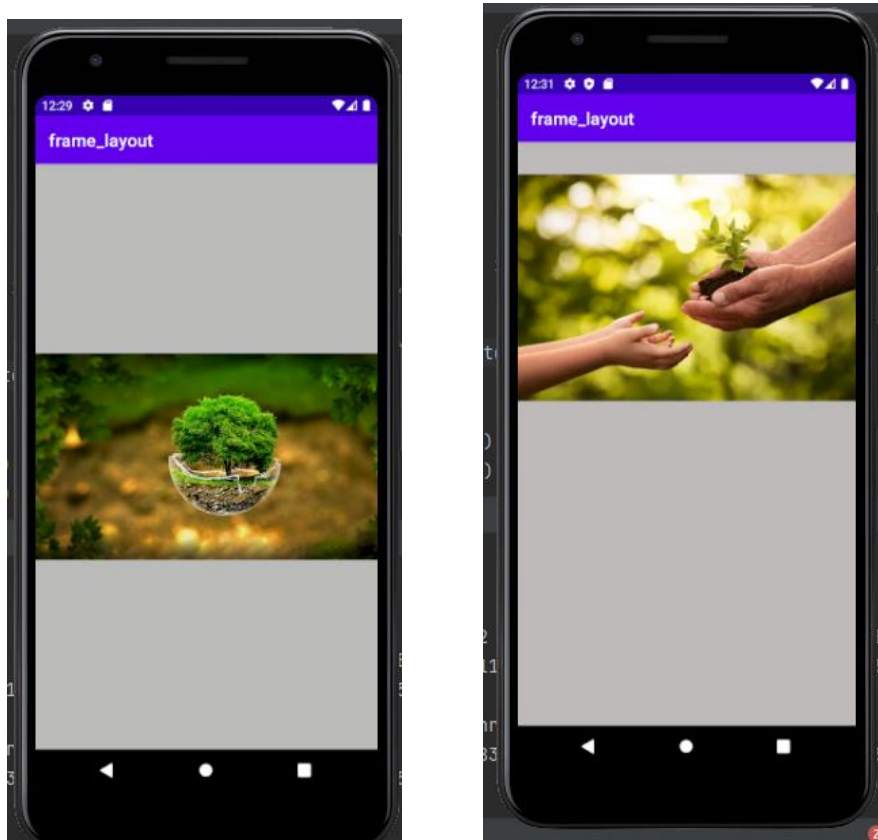
```
<?xml version="1.0" encoding="utf-8"?>
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:background="#BDBABA"
    tools:context=".MainActivity">
    <ImageView
        android:id="@+id/imageView1"
        android:layout_width="427dp"
        android:layout_height="wrap_content"
        android:layout_gravity="left|top"
        android:background="#CACAC8"
        app:srcCompat="@drawable/s1" />
    <ImageView
        android:id="@+id/imageView2"
        android:layout_width="396dp"
        android:layout_height="wrap_content"
        android:layout_gravity="left|top"
        android:visibility="gone"
        app:srcCompat="@drawable/f1" />
</FrameLayout>
```



**MainActivity.java**

```
javapackage com.example.frame_layout;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.ImageView;
public class MainActivity extends AppCompatActivity implements View.OnClickListener {
    ImageView i1,i2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        i1=(ImageView) findViewById(R.id.imageView1);
        i2=(ImageView) findViewById(R.id.imageView2);
        i1.setOnClickListener(this);
        i2.setOnClickListener(this);
    }
    @Override
    public void onClick(View v) {
        if(v.getId()==R.id.imageView1)
        {
            i1.setVisibility(v.GONE);
            i2.setVisibility(v.VISIBLE);
        }
        else
        {
            i2.setVisibility(v.GONE);
            i1.setVisibility(v.VISIBLE);
        }
    }
}
```

## Output



**Result:** The program was executed successfully and the output was obtained. Thus, CO2 has been attained.

## **Experiment No. 7**

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

**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"?>
<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"
```

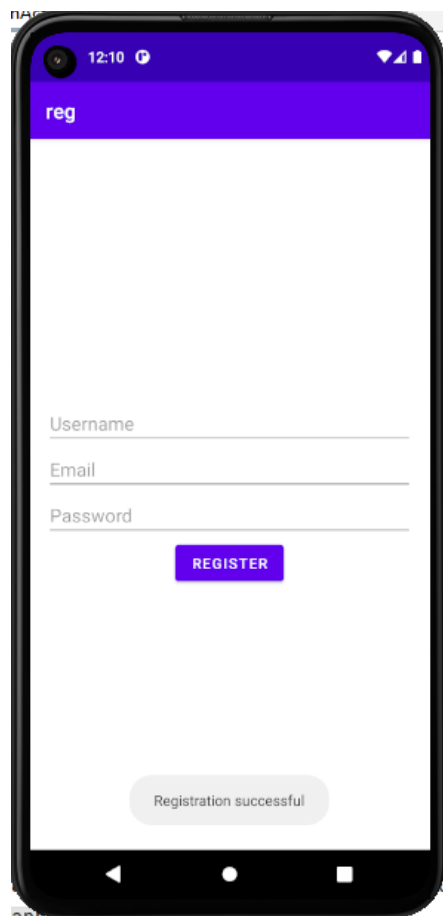
```
        android:inputType="textPassword" />
    <Button
        android:id="@+id/registerButton"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_gravity="center"
        android:text="Register" />
</LinearLayout>
```

### **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 has been attained.

## **Experiment No:8**

**Aim:** Develop an application using array adapter with List view

**CO3:** Develop application with multiple activities using intents array adapter, exception and options menu.

### **Procedure:**

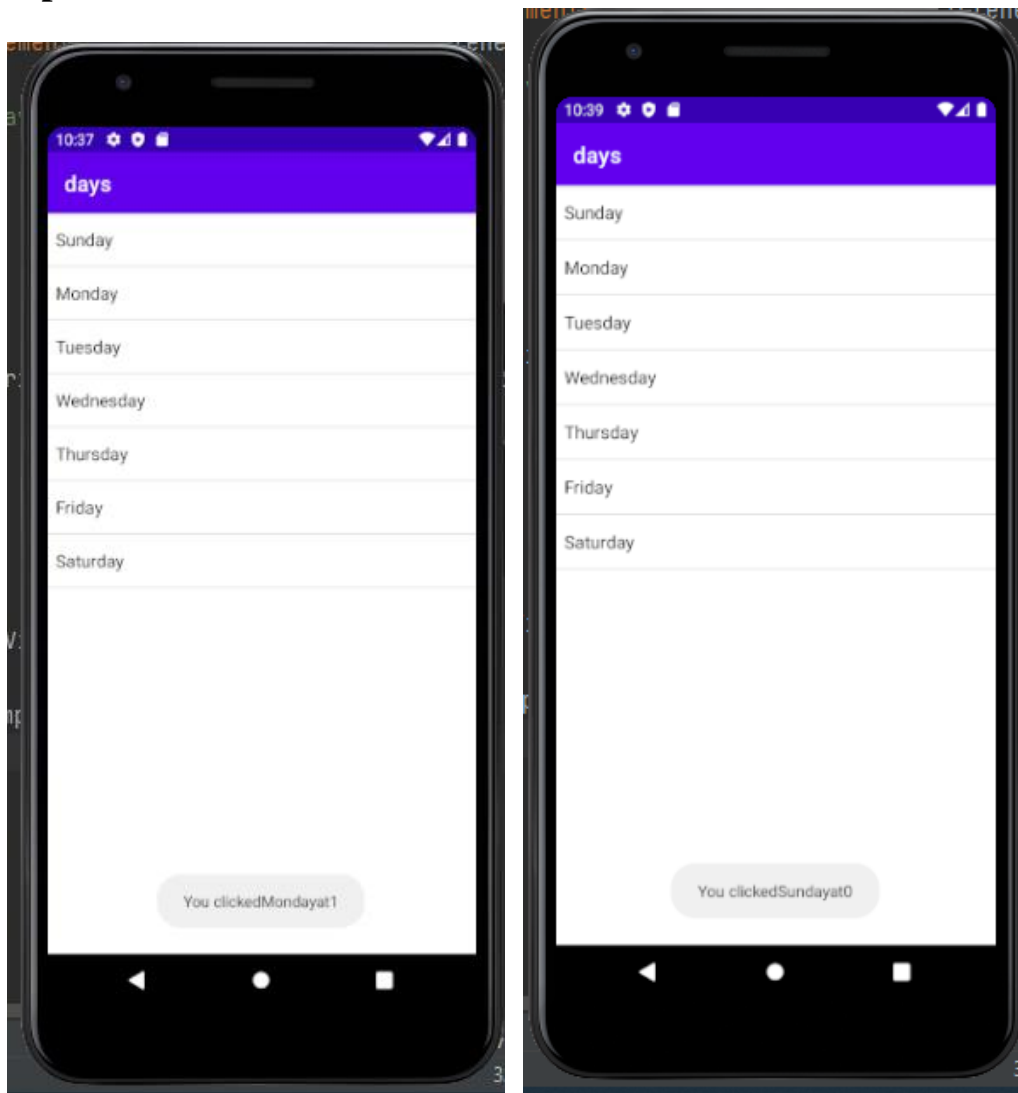
#### **Activity\_main.xml**

```
<?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.AdapterView.OnItemClickListener;
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 was executed successfully and the output was obtained. Thus, CO3 has been attained.

## **Experiment No:9**

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

**CO3:** Develop application with multiple activities using intents array adapter, exception 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/messages"
        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>
```

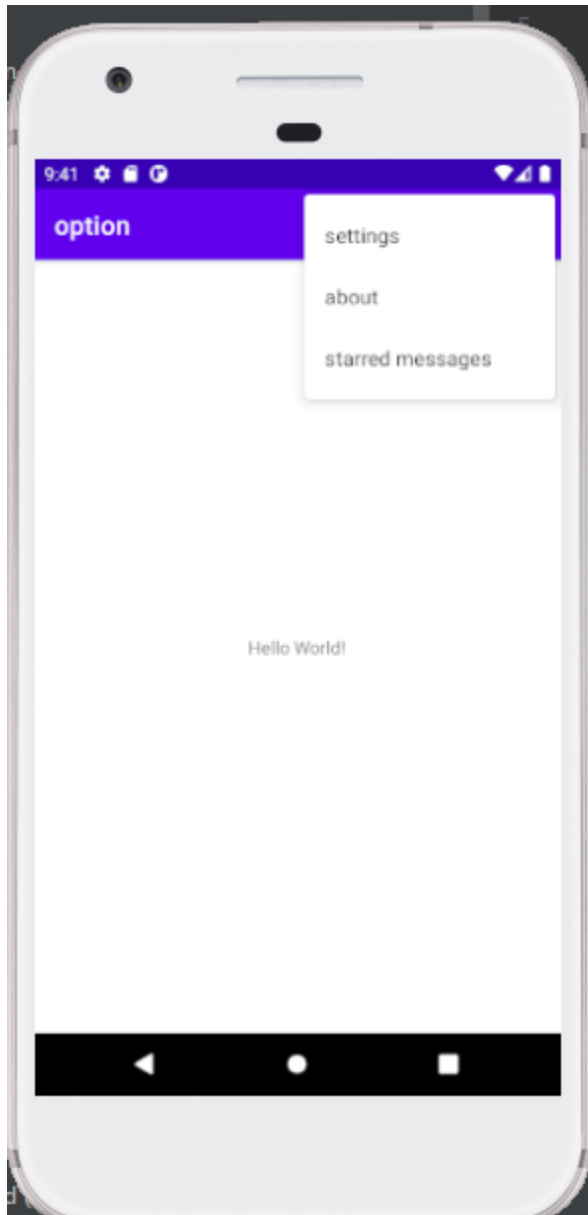
### **settingspage.java**

```
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 was executed successfully and the output was obtained. Thus, CO3 has been attained.

## **Experiment No:10**

**Aim:** Develop an application that with explicit intent.

**CO3:** Develop application with multiple activities using intents array adapter, exception and options menu.

### **Procedure:**

#### **Activity Main1.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="switchActivity"
        android:text="Button"
        app:layout_constraintBottom_toTopOf="@+id/editText1"
        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="0.5" />
    <EditText
        android:id="@+id/editText1"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:ems="10"
        android:text="Enter Your Name"
        app:layout_constraintTop_toBottomOf="@+id/button"
        app:layout_constraintStart_toStartOf="parent"
```

---

```
        app:layout_constraintEnd_toEndOf="parent" />

<EditText
    android:id="@+id/editText2"
    android:layout_width="0dp"
    android:layout_height="wrap_content"
    android:ems="10"
    android:text="Enter age"
    app:layout_constraintTop_toBottomOf="@+id/editText1"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintEnd_toEndOf="parent" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

### **Activity main1.java**

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
public class MainActivity extends AppCompatActivity {
    EditText name;
    EditText age;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        name=findViewById(R.id.editText1);
        age=findViewById(R.id.editText2);
    }
    public void switchActivity(View view){
        Intent intent=new Intent(this,MainActivity2.class);
        intent.putExtra("user",name.getText().toString());
        intent.putExtra("age",age.getText().toString());
        startActivity(intent);
    }
}
```

**Activity Main2.xml**

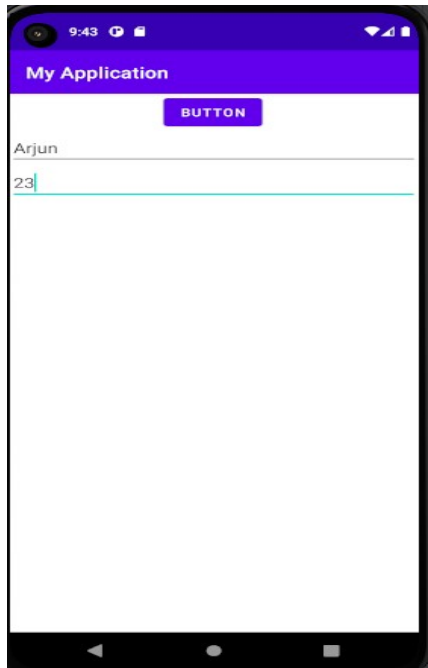
```
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity2">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Activity 2"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintBottom_toBottomOf="parent"
        android:layout_margin="16dp" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

**Activity Main2.java**

```
package com.example.myapplication;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
import android.widget.TextView;
public class MainActivity2 extends AppCompatActivity {
    TextView tv;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
        Intent intent=getIntent();
        String user=intent.getStringExtra("user");
        String age =intent.getStringExtra("age");
        tv=findViewById(R.id.textView);
    }
}
```

```
        tv.setText("welcome"+user+"age :"+age);  
    }  
}
```

**Output:**

**Result:** The program was executed successfully and the output was obtained. Thus, CO3 has been attained.

## **Experiment No:11**

**Aim:** Program to navigate the activity using intent.

**CO3:** Implement activities with dialogs spinners 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:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <TextView
        android:id="@+id/textview1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        android:layout_marginTop="50dp"
        android:layout_marginLeft="150dp"/>
    <Spinner
        android:id="@+id/spinner2"
        android:layout_height="50dp"
        android:layout_width="200dp"
        android:layout_marginTop="100dp"
        android:layout_marginLeft="110dp"/>
</RelativeLayout>
```

#### **Main activity.java**

```
package com.example.spin;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
```



```
import android.widget.Spinner;
import android.widget.TextView;
public class MainActivity extends AppCompatActivity {
    String []names = {"values1","values2","values3","value4","value5"};
    String []text = {"values1 text","values2 text","values3 text","value4 text","value5 text"};
    ArrayAdapter<String> adapter;
    Spinner spinner;
    TextView textView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        spinner = findViewById(R.id.spinner2);
        textView = findViewById(R.id.textview1);
        adapter = new ArrayAdapter<String>(getApplicationContext(),
android.R.layout.simple_list_item_1,names);
        spinner.setAdapter(adapter);
        spinner.setOnItemClickListener(new AdapterView.OnItemClickListener() {
            @Override
            public void onItemClick(AdapterView<?> adapterView, View view, int i, long l) {
                switch (i)
                {
                    case 0:
                        textView.setText(""+text[i]);
                        break;
                    case 1:
                        textView.setText(""+text[i]);
                        break;
                    case 2:
                        textView.setText(""+text[i]);
                        break;
                    case 3:
                        textView.setText(""+text[i]);
                        break;
                    case 4:
                        textView.setText(""+text[i]);
                        break;
                }
            }
        })
    }
}
```

```
@Override  
public void onNothingSelected(AdapterView<?> adapterView) {  
  
}    };    }}
```

**Output:**

**Result:** The program was executed successfully and the output was obtained. Thus, CO3 has been attained.

## **Experiment No:12**

**Aim:** Develop an application using fragments

**CO4:** Implement activities with dialogs spinners 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**

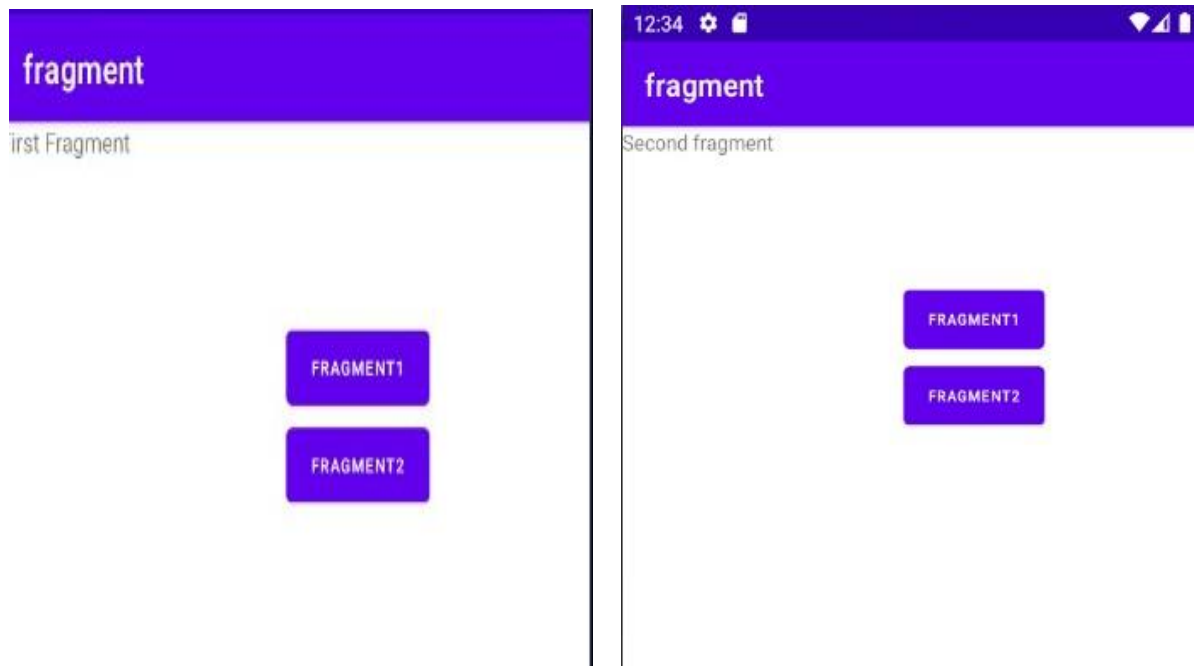
```
package com.example.fragment;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        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 was executed successfully and the output was obtained. Thus, CO4 has been attained.

## **Experiment No:13**

**Aim:** Implement adapter and perform exception

**CO4:** Implement activities with dialogs spinners fragments and navigation drawer by applying themes.

### **Procedure:**

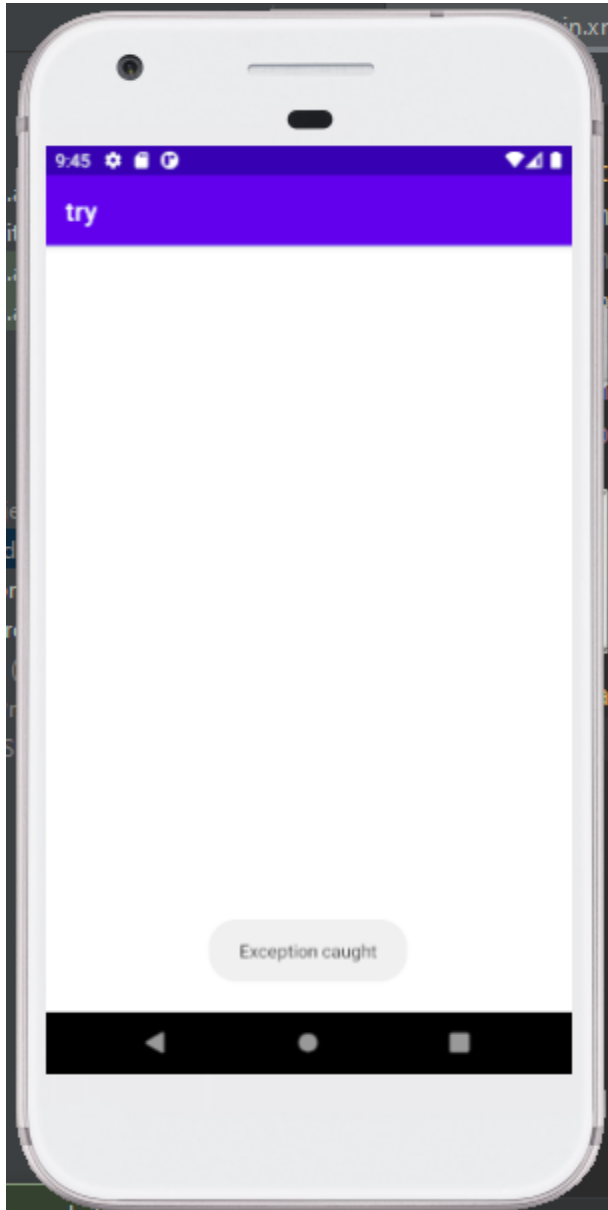
#### **Activity main.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns: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 caught",Toast.LENGTH_LONG).show();  
    } } }
```

**Output:**

**Result:** The program was executed successfully and the output was obtained. Thus, CO4 has been attained.



## **Experiment No:14**

**Aim:** Create database using SQLite and perform INSERT and SELECT

**CO5:** Develop mobile application using SQLite

### **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">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="STUDENT DETAILS"
        android:layout_centerHorizontal="true"
        />

    <EditText
        android:id="@+id/edit1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter Rollno"
        android:layout_margin="10dp"
        android:layout_centerHorizontal="true"
        android:layout_below="@id/textView"
        />

    <EditText
        android:id="@+id/edit2"
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="Enter Name"
    android:layout_margin="10dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/edit1"
/>
```

<EditText

```
    android:id="@+id/edit3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="Enter Department"
    android:layout_margin="10dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/edit2"
/>
```

<Button

```
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="INSERT"
    android:onClick="onInsert"
    android:layout_margin="10dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/edit3" />
```

<Button

```
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="READ"
    android:onClick="onRead"
    android:layout_margin="10dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/button2" />
```

</RelativeLayout>

**MainActivity.java**

```
package com.example.sql;
import androidx.appcompat.app.AppCompatActivity;
import android.content.ContentValues;
import android.database.sqlite.SQLiteDatabase;
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 {
    TextView textView;
    EditText edit1, edit2, edit3;
    Button button1, button2, button3, button4;
    String rno;
    String name;
    String dept;
    SQLiteDatabase db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        textView = findViewById(R.id.textView);
        edit1 = findViewById(R.id.edit1);
        edit2 = findViewById(R.id.edit2);
        edit3 = findViewById(R.id.edit3);
        button1 = findViewById(R.id.button1);
        button2 = findViewById(R.id.button2);
        button3 = findViewById(R.id.button3);
        button4 = findViewById(R.id.button4);
        DBHelper dbHelper = new DBHelper(this);
        db = dbHelper.getWritableDatabase();
        db = dbHelper.getReadableDatabase(); }
    public void onInsert(View view) {
        rno = edit1.getText().toString();
        name = edit2.getText().toString();
        dept = edit3.getText().toString();
```

---

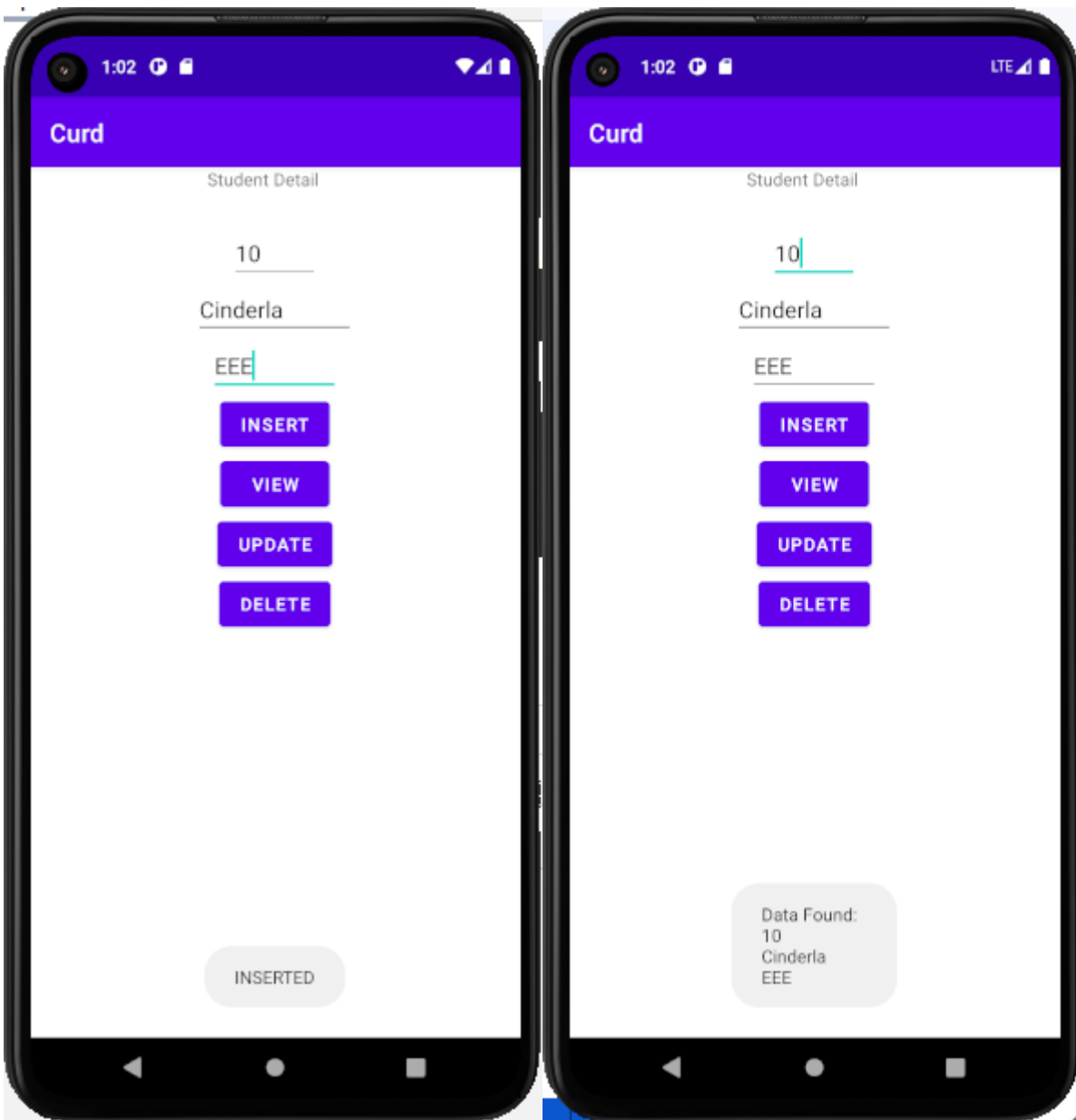
```
        if(rno.equals("") || name.equals("") || dept.equals(""))
        {
            Toast.makeText(this, "Please Enter Values", Toast.LENGTH_SHORT).show();}
        else
        {
            ContentValues values = new ContentValues();
            values.put("rollno", rno);
            values.put("name", name);
            values.put("dept", dept);
            db.insert("student", null, values);
            Toast.makeText(this, "Inserted", Toast.LENGTH_SHORT).show();
        } }
    public void onRead(View view) {
    }
}
```

### **DBHelper.java**

```
package com.example.sql;
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 student(rollno int, name varchar(20), dept
varchar(10))");
    }

    @Override
    public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1) {
        sqLiteDatabase.execSQL("drop table if exists student");
        onCreate(sqLiteDatabase);
    }
}
```

**Output:**

**Result:** The program was executed successfully and the output was obtained. Thus, CO5 has been attained.

## **Experiment No:15**

**Aim:** Perform UPDATE and DELETE on SQLite database

**CO5:** Develop mobile application using SQLite

### **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">

    <TextView
        android:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="STUDENT DETAILS"
        android:layout_centerHorizontal="true" />

    <EditText
        android:id="@+id/edit1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter Rollno"
        android:layout_margin="10dp"
        android:layout_centerHorizontal="true"
        android:layout_below="@id/textView"/>

    <EditText
        android:id="@+id/edit2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Enter Name"
```

```
    android:layout_margin="10dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/edit1"/>
```

```
<EditText
```

```
    android:id="@+id/edit3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="Enter Department"
    android:layout_margin="10dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/edit2"/>
```

```
<Button
```

```
    android:id="@+id/button1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="INSERT"
    android:onClick="onInsert"
    android:layout_margin="10dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/edit3" />
```

```
<Button
```

```
    android:id="@+id/button2"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="UPDATE"
    android:onClick="onUpdate"
    android:layout_margin="10dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/button1" />
```

```
<Button
```

```
    android:id="@+id/button3"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="READ"
    android:onClick="onRead"
    android:layout_margin="10dp"
```

```
    android:layout_centerHorizontal="true"
    android:layout_below="@id/button2" />
```

```
<Button
    android:id="@+id/button4"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="DELETE"
    android:onClick="onDelete"
    android:layout_margin="10dp"
    android:layout_centerHorizontal="true"
    android:layout_below="@id/button3" />
```

```
</RelativeLayout>
```

### **MainActivity.java**

```
package com.example.sql;
import androidx.appcompat.app.AppCompatActivity;
import android.content.ContentValues;
import android.database.sqlite.SQLiteDatabase;
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 {

    TextView textView;
    EditText edit1, edit2, edit3;
    Button button1, button2, button3, button4;
    String rno;
    String name;
    String dept;
    SQLiteDatabase db;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
```

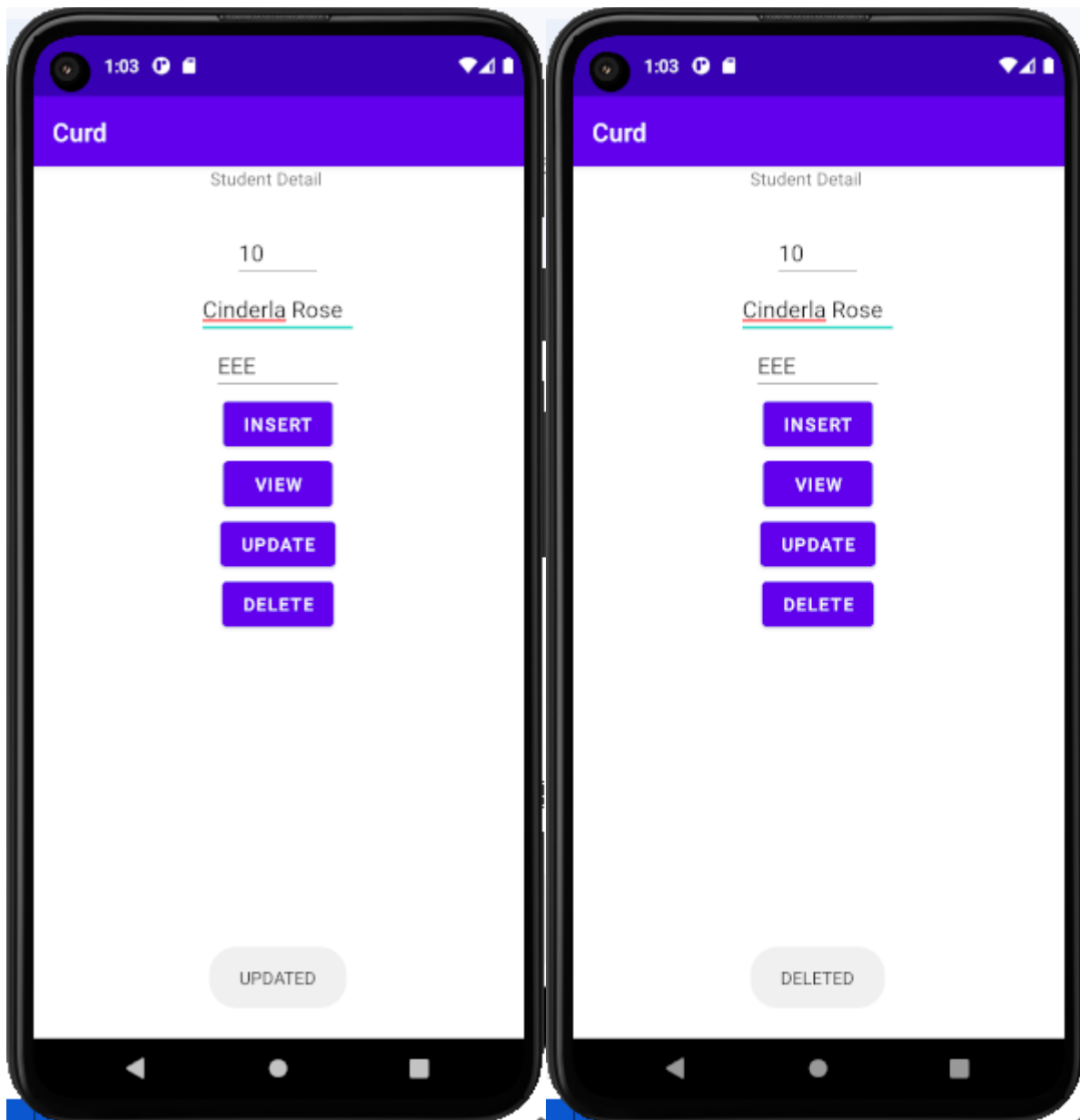


```
        textView = findViewById(R.id.textView);
        edit1 = findViewById(R.id.edit1);
        edit2 = findViewById(R.id.edit2);
        edit3 = findViewById(R.id.edit3);
        button1 = findViewById(R.id.button1);
        button2 = findViewById(R.id.button2);
        button3 = findViewById(R.id.button3);
        button4 = findViewById(R.id.button4);
        DBHelper dbHelper = new DBHelper(this);
        db = dbHelper.getWritableDatabase();
        db = dbHelper.getReadableDatabase();
    }
    public void onInsert(View view) {
        rno = edit1.getText().toString();
        name = edit2.getText().toString();
        dept = edit3.getText().toString();
        if(rno.equals("") || name.equals("") || dept.equals(""))
        {
            Toast.makeText(this, "Please Enter Values", Toast.LENGTH_SHORT).show();
        }
    else
    {
        ContentValues values = new ContentValues();
        values.put("rollno", rno);
        values.put("name", name);
        values.put("dept", dept);
        db.insert("student", null, values);
        Toast.makeText(this, "Inserted", Toast.LENGTH_SHORT).show();
    }
}
    public void onUpdate(View view) {
    }
    public void onRead(View view) {
    }
    public void onDelete(View view) {
    }
}
```

**DBHelper.java**

```
package com.example.sql;
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 student(rollno int, name varchar(20), dept
varchar(10))");
    }
    @Override
    public void onUpgrade(SQLiteDatabase sqLiteDatabase, int i, int i1)
    {
        sqLiteDatabase.execSQL("drop table if exists student");
        onCreate(sqLiteDatabase);
    }
}
```

**Output:**

**Result:** The program was executed successfully and the output was obtained. Thus, CO5 has been attained.