## Practical No: 01

Aim : Android Activity Lifecycle

MainActivity.java -

```java
package com.example.anew;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.util.Log;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("Lifecycle", "Chaitanya (Roll No: 96)");
        Log.d("Lifecycle", "onCreate called"); }
    @Override
    protected void onStart() {
        super.onStart();
        Log.d("Lifecycle", "onStart called");  }
    @Override
    protected void onResume() {
        super.onResume();
        Log.d("Lifecycle", "onResume called"); }
    @Override
    protected void onPause() {
        super.onPause();
        Log.d("Lifecycle", "onPause called"); }
    @Override
    protected void onStop() {
        super.onStop();
        Log.d("Lifecycle", "onStop called"); }
    @Override
    protected void onRestart() {
        super.onRestart();
        Log.d("Lifecycle", "onRestart called"); }
    @Override
    protected void onDestroy() {
        super.onDestroy();
        Log.d("Lifecycle", "onDestroy called");
    }
}
```

Output -

Practical No: 02

Aim : Basic Layout (Text Display)

MainActivity.java -

```java
package com.example.prac2_basic_layout;
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.TextView;

public class MainActivity extends AppCompatActivity {
    private Button btn1;   private EditText ed1;   private TextView txt1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        btn1 = findViewById(R.id.button);
        ed1 = findViewById(R.id.editTextTextPersonName);
        txt1 = findViewById(R.id.textview1);

        btn1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String msg = ed1.getText().toString();
                if (!msg.isEmpty()) {
                    txt1.setText(msg);
                } else {
                    txt1.setText("Please enter text");
                } } }); }}
```
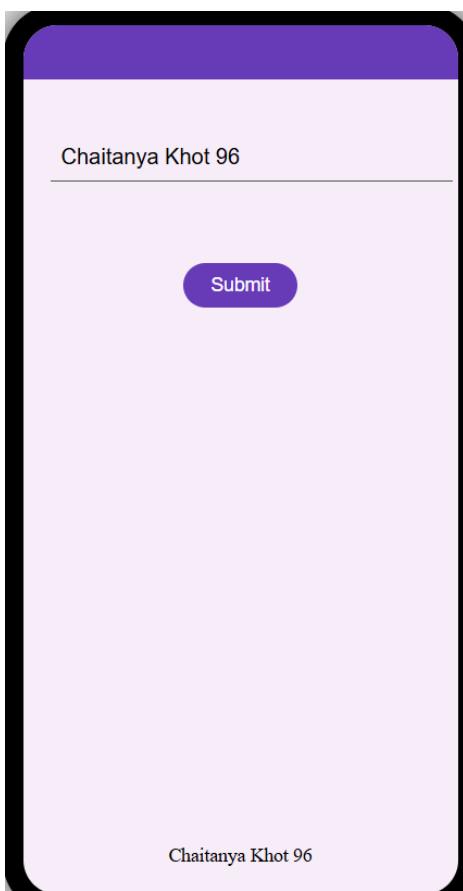
MainActivity.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<androidx.constraintlayout.widget.ConstraintLayout
xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <EditText
        android:id="@+id/editTextTextPersonName"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:ems="10"
        android:hint="Enter Text"
        android:inputType="textPersonName"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
```

```xml
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintBottom_toTopOf="@+id/button"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintVertical_bias="0.3" />
    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintVertical_bias="0.5" />
    <TextView
        android:id="@+id/textview1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Result will appear here"
        app:layout_constraintTop_toBottomOf="@+id/button"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        app:layout_constraintVertical_bias="0.5" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

Output -

Practical No: 03

Aim : TOAST

Activity_Main.xml -

```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/Div"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Toast"
        android:onClick="Toaster"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"/>

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java -

```java
package com.example.prac3;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

import android.os.Bundle;
import android.view.View;
import android.widget.Toast;


public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    public void Toaster(View view) {
        Toast.makeText(this, "Welcome to Application", Toast.LENGTH_LONG).show();
    }
}
```
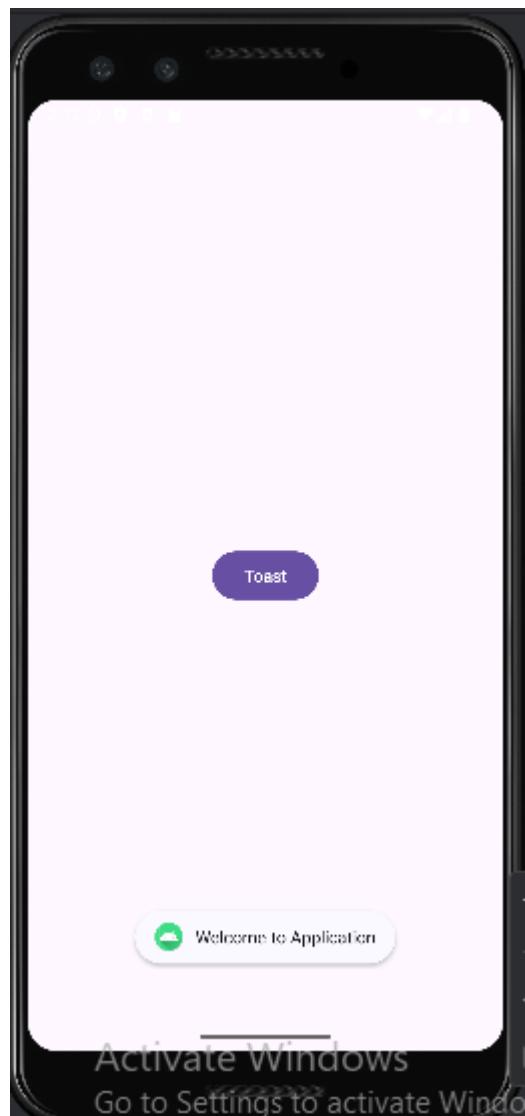
Practical No: 04

Aim : Simple calculator

Activity_main.xml -

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

    <EditText
        android:id="@+id/num1"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="number"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintHorizontal_bias="0.5"
        android:layout_marginTop="96dp"
        android:layout_marginStart="16dp"
        android:layout_marginEnd="16dp" />

    <EditText
        android:id="@+id/num2"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:inputType="number"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toBottomOf="@+id/num1"
        app:layout_constraintHorizontal_bias="0.5"
        android:layout_marginTop="16dp"
        android:layout_marginStart="16dp"
        android:layout_marginEnd="16dp" />

    <Button
        android:id="@+id/add"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="ADD"
        android:onClick="ADD"
        app:layout_constraintTop_toBottomOf="@+id/num2"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toStartOf="@+id/sub"
        android:layout_marginTop="16dp" />

    <Button
        android:id="@+id/sub"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="SUB"
        android:onClick="SUB"
```

```xml
        app:layout_constraintTop_toBottomOf="@+id/num2"
        app:layout_constraintStart_toEndOf="@+id/add"
        app:layout_constraintEnd_toStartOf="@+id/Mul"
        android:layout_marginTop="16dp" />

    <Button
        android:id="@+id/Mul"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="MUL"
        android:onClick="MUL"
        app:layout_constraintTop_toBottomOf="@+id/num2"
        app:layout_constraintStart_toEndOf="@+id/sub"
        app:layout_constraintEnd_toStartOf="@+id/Div"
        android:layout_marginTop="16dp" />

    <Button
        android:id="@+id/Div"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="DIV"
        android:onClick="DIV"
        app:layout_constraintTop_toBottomOf="@+id/num2"
        app:layout_constraintStart_toEndOf="@+id/Mul"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp" />

    <TextView
        android:id="@+id/tv3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Result"
        app:layout_constraintTop_toBottomOf="@+id/add"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp" />

    <EditText
        android:id="@+id/result"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:inputType="none"
        app:layout_constraintTop_toBottomOf="@+id/tv3"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="16dp"
        android:layout_marginStart="16dp"
        android:layout_marginEnd="16dp" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Main_Activity.java

```java
package com.example.prac_4;

import android.os.Bundle;
```

```java
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import android.os.Bundle;
import android.view.View;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    public void ADD(View view) {
        performOperation(view, Operation.ADD);
    }

    public void SUB(View view) {
        performOperation(view, Operation.SUBTRACT);
    }

    public void MUL(View view) {
        performOperation(view, Operation.MULTIPLY);
    }

    public void DIV(View view) {
        performOperation(view, Operation.DIVIDE);
    }

    private void performOperation(View view, Operation operation) {
        EditText num1 = findViewById(R.id.num1);
        EditText num2 = findViewById(R.id.num2);
        EditText result = findViewById(R.id.result);

        try {
            int x = Integer.parseInt(num1.getText().toString());
            int y = Integer.parseInt(num2.getText().toString());
            float result_num = 0;

            switch (operation) {
                case ADD:
                    result_num = x + y;
                    break;
                case SUBTRACT:
                    result_num = x - y;
                    break;
                case MULTIPLY:
                    result_num = x * y;
                    break;
                case DIVIDE:
                    if (y != 0) {
```

8
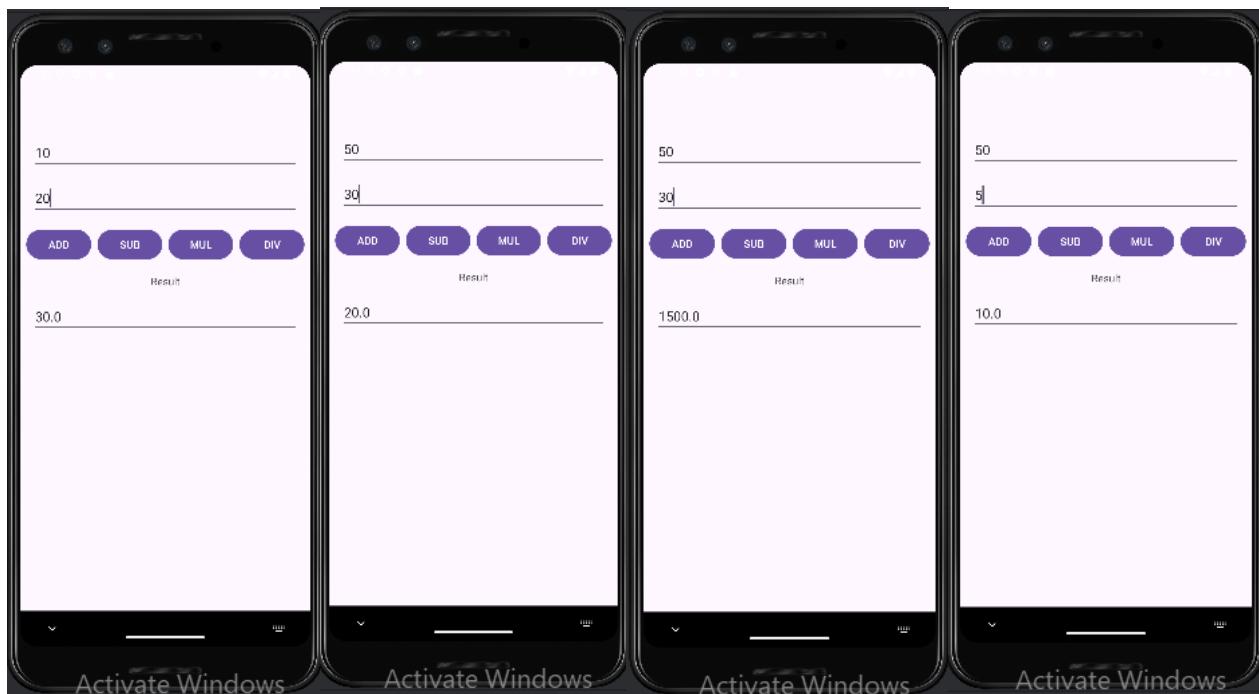
```
            result_num = (float) x / y;
        } else {
            Toast.makeText(this, "Cannot divide by zero", Toast.LENGTH_SHORT).show();
            return;
        }
        break;
    }

    result.setText(String.valueOf(result_num));
    } catch (NumberFormatException e) {
        Toast.makeText(this, "Please enter valid numbers", Toast.LENGTH_SHORT).show();
    }
}

private enum Operation {
    ADD, SUBTRACT, MULTIPLY, DIVIDE
}
}
```

Output -

Practical No: 05

Aim : INTENT

Activity_mail.xml -

```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">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="vertical"
        android:gravity="center">

        <Button
            android:id="@+id/Div"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:onClick="Intenter"
            android:text="Next Page >" />
    </LinearLayout>

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java -

```java
package com.example.prac_5;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
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 Intenter(View view) {
        Intent intent = new Intent(this, MainActivity2.class);
        startActivity(intent);
```

```
    }
}
```

Activity_main2.xml -

```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="282dp"
        android:layout_height="121dp"
        android:text="Welcome to new page"
        android:textSize="34sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java -
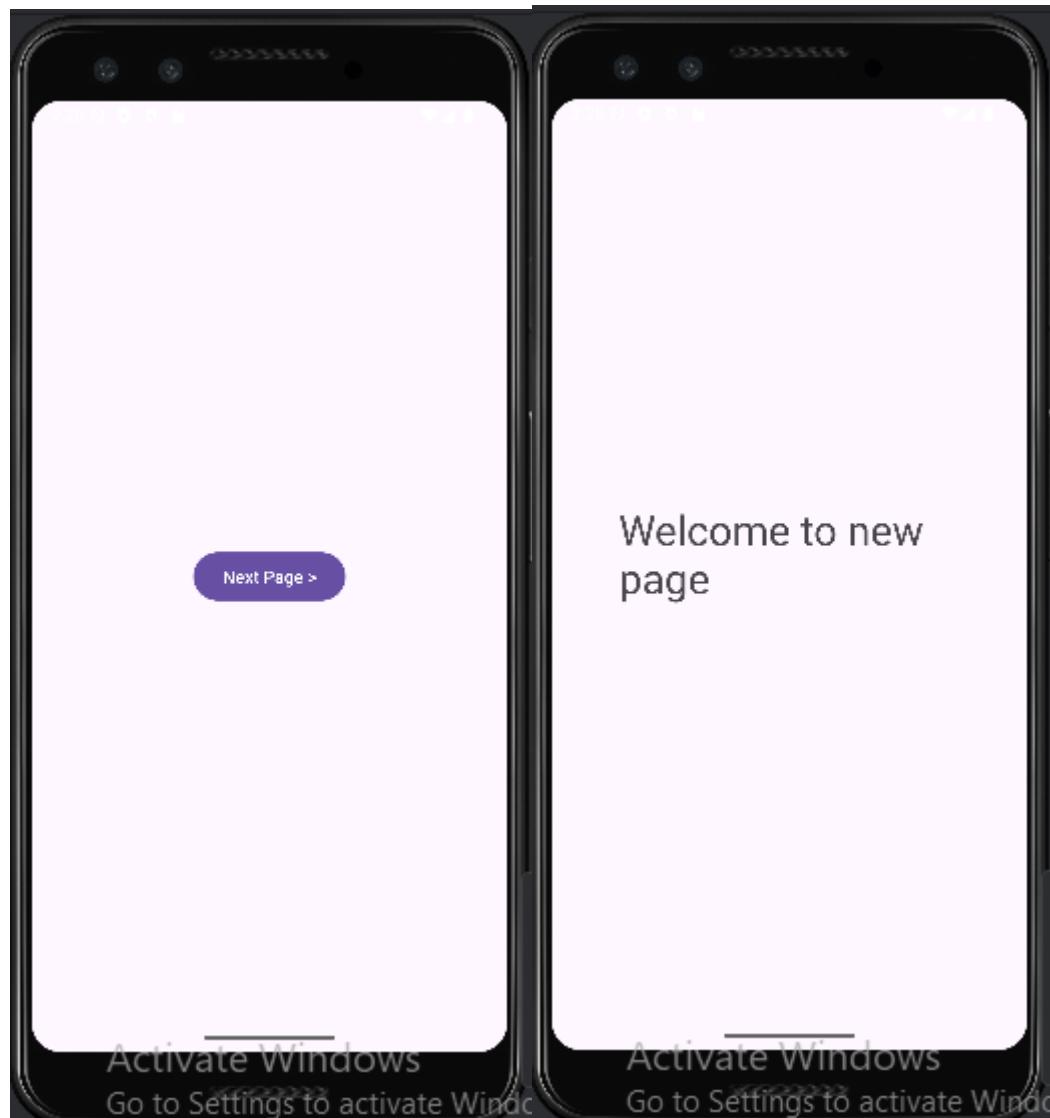
```java
package com.example.prac_5;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;

public class MainActivity2 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);
    }
}
```

Output -

Practical No: 06

Aim : UI Component

ActivityMain.xml

```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">

    <!-- Title -->
    <TextView
        android:id="@+id/tv1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Registration Form"
        android:textSize="36sp"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="30dp" />

    <!-- Name Label -->
    <TextView
        android:id="@+id/tv_name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Enter Name:"
        android:textSize="30sp"
        app:layout_constraintTop_toBottomOf="@id/tv1"
        app:layout_constraintStart_toStartOf="parent"
        android:layout_marginStart="30dp"
        android:layout_marginTop="30dp" />

    <!-- Name Input -->
    <EditText
        android:id="@+id/et1"
        android:layout_width="0dp"
        android:layout_height="wrap_content"
        android:ems="10"
        android:inputType="textPersonName"
        android:textSize="24sp"
        app:layout_constraintTop_toBottomOf="@id/tv1"
        app:layout_constraintStart_toEndOf="@id/tv_name"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="30dp"
        android:layout_marginEnd="30dp" />

    <!-- Gender Radio Group -->
    <RadioButton
        android:id="@+id/rb1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Female"
```

```
        android:textSize="30sp"
        app:layout_constraintTop_toBottomOf="@id/et1"
        app:layout_constraintStart_toStartOf="parent"
        android:layout_marginStart="30dp"
        android:layout_marginTop="30dp" />

    <RadioButton
        android:id="@+id/rb2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Male"
        android:textSize="30sp"
        app:layout_constraintTop_toBottomOf="@id/et1"
        app:layout_constraintStart_toEndOf="@id/rb1"
        android:layout_marginStart="50dp"
        android:layout_marginTop="30dp" />

    <!-- Course Checkboxes -->
    <CheckBox
        android:id="@+id/cb1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="PHP"
        android:textSize="30sp"
        app:layout_constraintTop_toBottomOf="@id/rb1"
        app:layout_constraintStart_toStartOf="parent"
        android:layout_marginStart="30dp"
        android:layout_marginTop="30dp" />

    <CheckBox
        android:id="@+id/cb2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Java"
        android:textSize="30sp"
        app:layout_constraintTop_toBottomOf="@id/rb1"
        app:layout_constraintStart_toEndOf="@id/cb1"
        android:layout_marginStart="50dp"
        android:layout_marginTop="30dp" />

    <!-- RatingBar -->
    <RatingBar
        android:id="@+id/ratingbar1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintTop_toBottomOf="@id/cb1"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="30dp" />

    <!-- Submit Button -->
    <Button
        android:id="@+id/b1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Submit"
        android:textSize="30sp"
```

```
        app:layout_constraintTop_toBottomOf="@id/ratingbar1"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        android:layout_marginTop="30dp" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

ActivityMain2.xml

```
<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=".MainActivity2">

    <TextView
        android:id="@+id/tv1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Welcome"
        android:textSize="36sp"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="48dp" />

    <TextView
        android:id="@+id/tv_name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="30sp"
        android:layout_below="@id/tv1"
        android:layout_marginTop="30dp"
        android:layout_marginStart="20dp" />

    <TextView
        android:id="@+id/tv_gender"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="30sp"
        android:layout_below="@id/tv_name"
        android:layout_marginTop="20dp"
        android:layout_marginStart="20dp" />

    <TextView
        android:id="@+id/tv_Course"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="30sp"
        android:layout_below="@id/tv_gender"
        android:layout_marginTop="20dp"
        android:layout_marginStart="20dp" />

    <TextView
        android:id="@+id/tv_rating"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textSize="30sp"
        android:layout_below="@id/tv_Course"
```

```
    android:layout_marginTop="20dp"
    android:layout_marginStart="20dp" />

</RelativeLayout>
```

MainActivity.java

```java
package com.example.prac_7;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import android.content.Intent;
import android.os.Bundle;
import android.view.View;
import android.widget.*;

public class MainActivity extends AppCompatActivity {

    EditText e1;
    RadioButton r1, r2;
    CheckBox c1, c2;
    Button b1;
    RatingBar rb1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        e1 = findViewById(R.id.et1);
        r1 = findViewById(R.id.rb1);
        r2 = findViewById(R.id.rb2);
        c1 = findViewById(R.id.cb1);
        c2 = findViewById(R.id.cb2);
        b1 = findViewById(R.id.b1);
        rb1 = findViewById(R.id.ratingbar1);

        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                String gender;
                String name = e1.getText().toString();
                String course = "";
                String rating = String.valueOf(rb1.getRating());

                if (r1.isChecked()) {
                    gender = r1.getText().toString();
                } else {
                    gender = r2.getText().toString();
                }
```

```
        if (c1.isChecked()) {
            course += c1.getText().toString();
        }
        if (c2.isChecked()) {
            if (!course.isEmpty()) {
                course += ", ";
            }
            course += c2.getText().toString();
        }

        Intent intent = new Intent(MainActivity.this, MainActivity2.class);
        intent.putExtra("NAME", name);
        intent.putExtra("GENDER", gender);
        intent.putExtra("COURSE", course);
        intent.putExtra("RATING", rating);
        startActivity(intent);
        }
    });
    }
}
```

mainActivity2.java

```
package com.example.prac_7;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import android.os.Bundle;
import android.content.Intent;
import android.widget.TextView;

public class MainActivity2 extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main2);

        TextView tv1 = findViewById(R.id.tv_name);
        TextView tv2 = findViewById(R.id.tv_gender);
        TextView tv3 = findViewById(R.id.tv_Course);
        TextView tv4 = findViewById(R.id.tv_rating);

        Intent intent = getIntent();
        String name = intent.getStringExtra("NAME");
        String gender = intent.getStringExtra("GENDER");
        String course = intent.getStringExtra("COURSE");
        String rating = intent.getStringExtra("RATING");

        tv1.setText("Name: " + name);
```
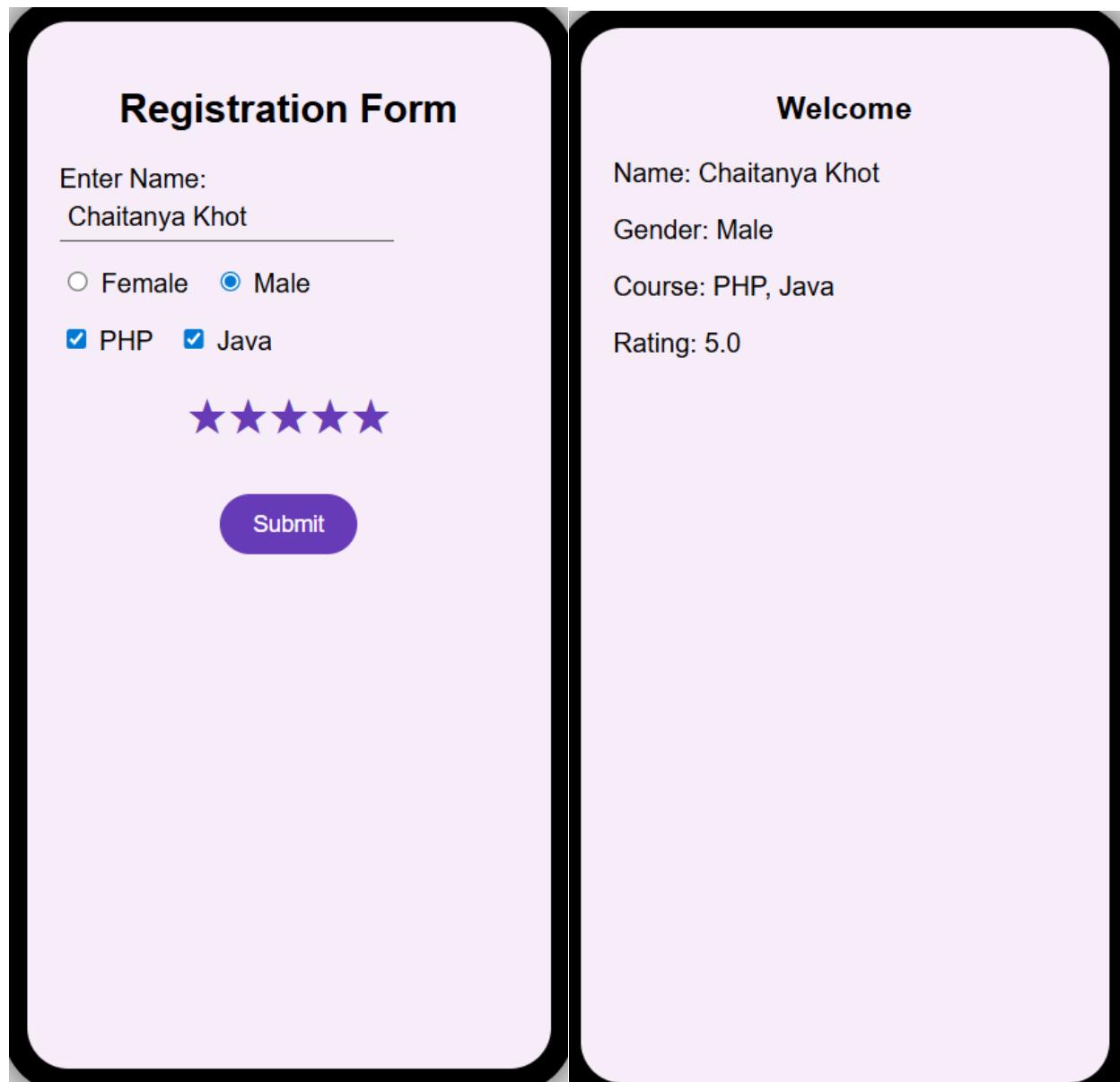
```
        tv2.setText("Gender: " + gender);
        tv3.setText("Course: " + course);
        tv4.setText("Rating: " + rating);
    }
}
```

Output -

Registration Form

Enter Name:

Chaitanya Khot

○ Female   ● Male

☑ PHP   ☑ Java

★★★★★

Submit

Welcome

Name: Chaitanya Khot

Gender: Male

Course: PHP, Java

Rating: 5.0

Practical No: 07

Aim : Button Onclicklistener, Image View

activity_main.xml

```xml
<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">

    <ImageView
        android:id="@+id/iv2"
        android:layout_width="match_parent"
        android:layout_height="667dp"
        android:layout_above="@+id/bt1"
        android:layout_alignParentStart="true"
        android:layout_alignParentTop="true"
        android:layout_alignParentEnd="true"
        android:layout_marginBottom="19dp"
        android:src="@drawable/ic_launcher_foreground" />

    <Button
        android:id="@+id/bt1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="change"
        android:layout_alignParentBottom="true"
        android:layout_centerHorizontal="true" />
</RelativeLayout>
```

MainActivity.java

```java
package com.example.prac_8;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        Button btn1 = findViewById(R.id.bt1);
        ImageView iv = findViewById(R.id.iv2);
```

```
    btn1.setOnClickListener(new View.OnClickListener() {
      @Override
      public void onClick(View view) {
         iv.setImageResource(R.drawable.pic);  // Make sure pic.png (or jpg) is in drawable folder
      }
    });
  }
}
```

Output -

Practical No: 08

Aim : Canvas (Draw Cricle)

Activity_Main.xml

```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:id="@+id/main"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

MainActivity.java

```java
package com.example.practical_08;

import android.os.Bundle;

import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
import android.graphics.Canvas;
import android.graphics.Color;
import android.graphics.Paint;
import android.os.Bundle;
import android.content.Context;
import android.view.View;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(new Mview(this));
    }

    private class Mview extends View {

        Paint p;

        public Mview(Context context) {
```

```
        super(context);
        p = new Paint();
        p.setStyle(Paint.Style.FILL);
    }

    @Override
    protected void onDraw(Canvas canvas) {
        super.onDraw(canvas);

        int x = getWidth();
        int y = getHeight();

        int rad = 100;

        // Paint background white
        p.setColor(Color.WHITE);
        canvas.drawPaint(p);

        // Draw yellow circle in center
        p.setColor(Color.YELLOW);
        canvas.drawCircle(x / 2, y / 2, rad, p);

        // Draw rectangle (left, top, right, bottom)
        p.setColor(Color.RED);
        canvas.drawRect(100, 100, 300, 250, p);
    }
  }
}
```
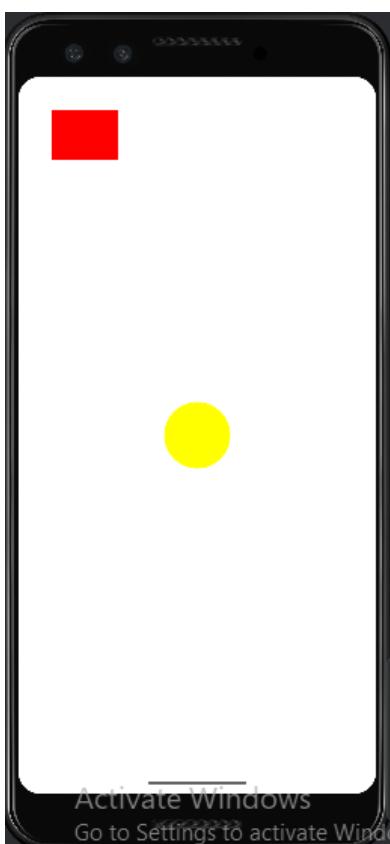
Output -

Practical No: 09

Aim : ALERT BOX

```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:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Button
        android:id="@+id/Button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="167dp"
        android:text="Button"
        tools:layout_editor_absoluteX="154dp"
        tools:layout_editor_absoluteY="170dp" />

</RelativeLayout>
```

Output -

Practical No: 10

Aim : File Handling (Read, Write, Delete)
XML

```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">

    <EditText
        android:id="@+id/txtcontent"
        android:layout_width="match_parent"
        android:layout_height="65dp"
        android:layout_marginStart="16dp"
        android:layout_marginEnd="16dp"
        android:layout_alignParentTop="true"
        android:layout_marginTop="31dp"
        android:ems="10"
        android:inputType="textPersonName" />
    <Button
        android:id="@+id/btnwrite"
        android:layout_width="103dp"
        android:layout_height="wrap_content"
        android:layout_alignStart="@+id/txtcontent"
        android:layout_alignLeft="@+id/txtcontent"
        android:layout_alignTop="@+id/btnread"
        android:text="Write" />
    <Button
        android:id="@+id/btnread"
        android:layout_width="100dp"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="170dp"
        android:text="Read" />
    <TextView
        android:id="@+id/textView"
        android:layout_width="259dp"
        android:layout_height="55dp"
        android:layout_alignParentStart="true"
        android:layout_alignParentLeft="true"
        android:layout_alignParentBottom="true"
        android:layout_marginStart="43dp"
        android:layout_marginLeft="43dp"
        android:layout_marginBottom="59dp"
        android:text="TextView" />
    <Button
        android:id="@+id/btn_clear"
        android:layout_width="101dp"
        android:layout_height="wrap_content"
        android:layout_alignTop="@+id/btnwrite"
        android:layout_alignParentEnd="true"
        android:layout_alignParentRight="true"
        android:layout_marginStart="12dp"
```

```
            android:layout_marginLeft="12dp"
            android:layout_marginTop="1dp"
            android:layout_marginEnd="42dp"
            android:layout_marginRight="42dp"
            android:layout_toEndOf="@+id/btnread"
            android:layout_toRightOf="@+id/btnread"
            android:onClick="clearFile"
            android:text="Clear" />
        <Button
            android:id="@+id/btn_delete"
            android:layout_width="213dp"
            android:layout_height="wrap_content"
            android:layout_alignTop="@+id/btn_clear"
            android:layout_alignParentEnd="true"
            android:layout_alignParentRight="true"
            android:layout_marginTop="78dp"
            android:layout_marginEnd="88dp"
            android:layout_marginRight="88dp"
            android:onClick="deleteFile"
            android:text="Delete" />
</RelativeLayout>
```

Java

```
package com.example.prac10;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.content.Context;
import android.view.View;
import android.widget.EditText;
import android.widget.TextView;
import android.widget.Button;
import android.widget.Toast;

import java.io.File;
import java.io.FileInputStream;
import java.io.FileOutputStream;

public class MainActivity extends AppCompatActivity {
    EditText et_Text;
    Button b_read, b_write, b_delete;
    TextView tv_Text;
    String file_name = "file.txt";
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        et_Text = (EditText) findViewById(R.id.txtcontent);
        b_read = (Button) findViewById(R.id.btnread);
        b_write = (Button) findViewById(R.id.btnwrite);
        tv_Text = (TextView) findViewById(R.id.textView);
        b_delete = (Button) findViewById(R.id.btn_delete);

        b_read.setOnClickListener(new View.OnClickListener() {
            @Override
```

```
            public void onClick(View view) {
                // Empty listener — you may want to add code here
            }
        });

        tv_Text.setText(readFile(file_name));

        b_write.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                saveFile(file_name, et_Text.getText().toString());
                Toast.makeText(MainActivity.this, "saved text", Toast.LENGTH_SHORT).show();
            }
        });
    }
    public void saveFile(String file_name, String text) {
        try {
            FileOutputStream fos = openFileOutput(file_name, Context.MODE_PRIVATE);
            fos.write(text.getBytes());
            fos.close();
            Toast.makeText(MainActivity.this, "", Toast.LENGTH_SHORT).show();
        } catch (Exception e) {
            e.printStackTrace();
            Toast.makeText(MainActivity.this, "Error saving file", Toast.LENGTH_SHORT).show();
        }
    }

    public String readFile(String file_name) {
        String text = "";
        try {
            FileInputStream fis = openFileInput(file_name);
            int size = fis.available();
            byte[] buffer = new byte[size];
            fis.read(buffer);
            fis.close();
            text = new String(buffer);
        } catch (Exception e) {
            e.printStackTrace();
            runOnUiThread(new Runnable() {
                @Override
                public void run() {
                    Toast.makeText(MainActivity.this, "Error Reading file",
Toast.LENGTH_SHORT).show();
                }
            });
        }
        return text;
    }
    public void clearFile(View view) {
        et_Text.getText().clear();
    }
    public void deleteFile(View view) {
        File file = new File(getFilesDir(), file_name);
        if (file.exists()) {
            file.delete();
            Toast.makeText(MainActivity.this, "file Deleted", Toast.LENGTH_SHORT).show();
        } else {
```
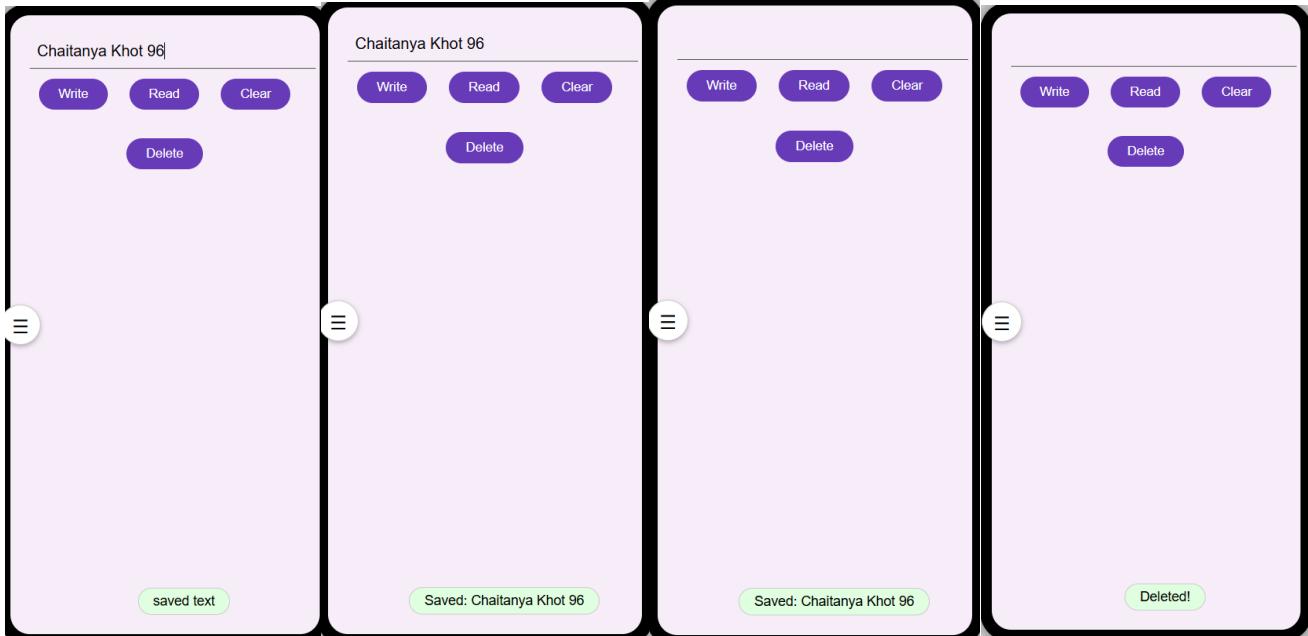
```
          Toast.makeText(MainActivity.this, "file not found", Toast.LENGTH_SHORT).show();
      }
    }
}
```

Output -

Practical No: 11 & 12

Aim : Wifi, Bluetooth (Enable/Disable)

Xml

```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:id="@+id/tv1"
        android:layout_width="228dp"
        android:layout_height="33dp"
        android:text="WIFI Enable/Disable"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.164"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.394" />

    <TextView
        android:id="@+id/tv"
        android:layout_width="269dp"
        android:layout_height="55dp"
        android:text="Bluetooth Enable/Disable"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintHorizontal_bias="0.163"
        app:layout_constraintLeft_toLeftOf="parent"
        app:layout_constraintRight_toRightOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <Switch
        android:id="@+id/switch1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="36dp"
        android:textOff="OFF"
        android:textOn="ON"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.0"
        app:layout_constraintStart_toEndOf="@+id/tv1"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.399" />

    <Switch
        android:id="@+id/switch3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:textOff="OFF"
```

```
            android:textOn="ON"
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintStart_toEndOf="@+id/tv"
            app:layout_constraintTop_toTopOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Java

```java
package com.example.prac1112;


import androidx.annotation.RequiresPermission;
import androidx.appcompat.app.AppCompatActivity;

import android.Manifest;
import android.bluetooth.BluetoothAdapter;
import android.content.Context;
import android.content.Intent;
import android.net.wifi.WifiManager;
import android.os.Bundle;
import android.widget.CompoundButton;
import android.widget.Switch;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    Switch wifiiii, bluetooot;
    WifiManager wifiManager;
    BluetoothAdapter bluetoothAdapter = BluetoothAdapter.getDefaultAdapter();

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        wifiManager = (WifiManager)
getApplicationContext().getSystemService(Context.WIFI_SERVICE);

        wifiiii = (Switch) findViewById(R.id.switch1);
        wifiiii.setOnCheckedChangeListener(new CompoundButton.OnCheckedChangeListener() {
            public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
                if (isChecked) {
                    wifiManager.setWifiEnabled(true);
                    Toast.makeText(MainActivity.this, "WIFI ON", Toast.LENGTH_SHORT).show();
                } else {
                    wifiManager.setWifiEnabled(false);
                    Toast.makeText(MainActivity.this, "WIFI Off", Toast.LENGTH_SHORT).show();
                }
            }
        });

        bluetooot = (Switch) findViewById(R.id.switch3);
        bluetooot.setOnCheckedChangeListener(new
CompoundButton.OnCheckedChangeListener() {
            @RequiresPermission(Manifest.permission.BLUETOOTH_CONNECT)
            public void onCheckedChanged(CompoundButton buttonView, boolean isChecked) {
                if (isChecked) {
```
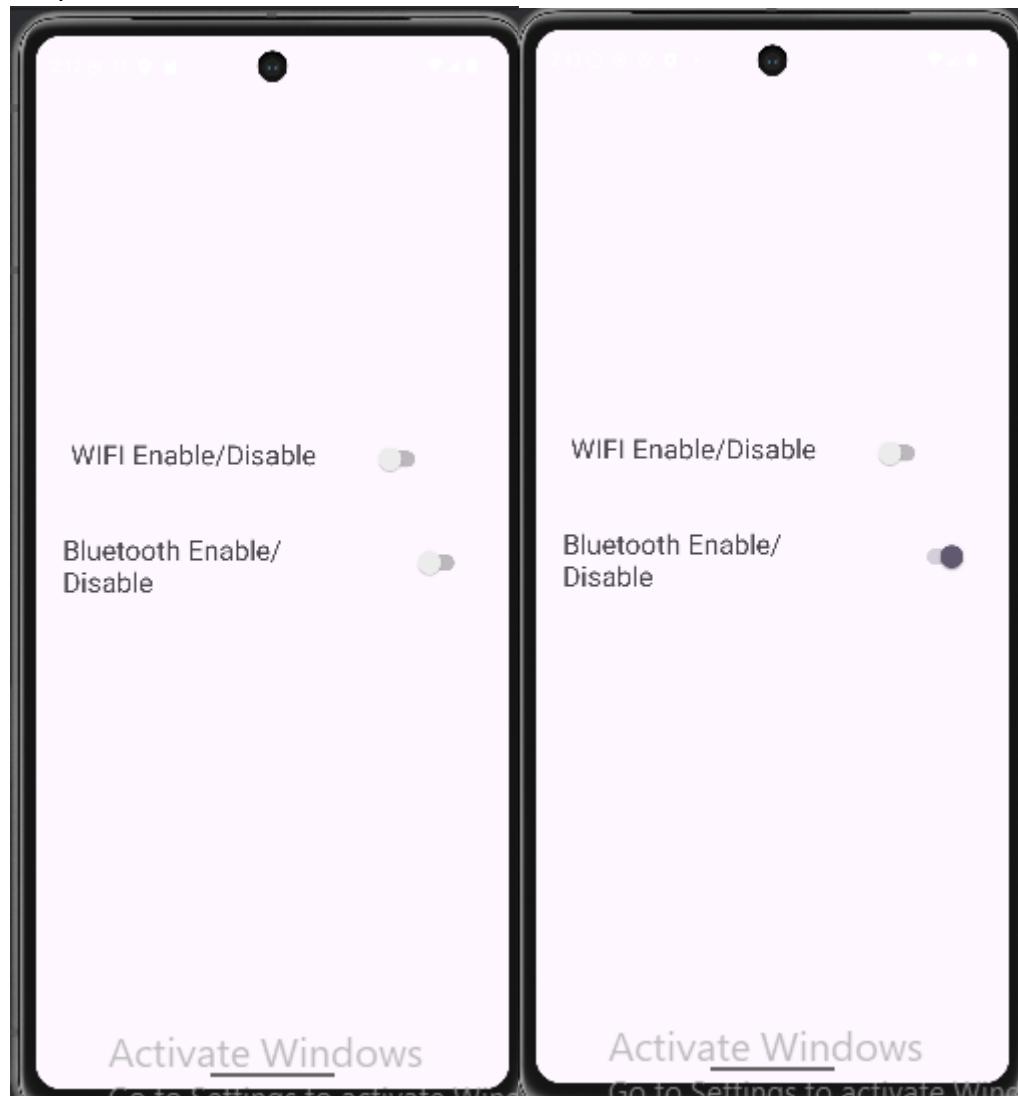
29

```
        if (bluetoothAdapter == null) {
            Toast.makeText(getApplicationContext(), "Bluetooth not supported",
Toast.LENGTH_SHORT).show();
        } else {
            if (!bluetoothAdapter.isEnabled()) {
                Intent enableBtIntent = new
Intent(BluetoothAdapter.ACTION_REQUEST_ENABLE);
                startActivityForResult(enableBtIntent, 0);
                Toast.makeText(getApplicationContext(), "Bluetooth Turned ON",
Toast.LENGTH_SHORT).show();
            }
        }
    } else {
        bluetoothAdapter.disable();
        Toast.makeText(getApplicationContext(), "Bluetooth Turned Off",
Toast.LENGTH_SHORT).show();
    }
  }
 });
 }
}
```

Output -

Practical No: 13

Aim : Create an application to CRUD operations in SQLite

XML

```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/textView5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="122dp"
        android:layout_marginTop="24dp"
        android:text="Contact Us"
        android:textSize="18sp"
        android:textStyle="bold"
        app:fontFamily="serif" />

    <EditText
        android:id="@+id/editTextName"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="67dp"
        android:layout_marginTop="99dp"
        android:hint="Enter Your Name"
        android:inputType="textPersonName"/>

    <EditText
        android:id="@+id/editTextEmailAddress"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="67dp"
        android:layout_marginTop="145dp"
        android:hint="Enter Your Email Address"
        android:inputType="textEmailAddress"/>

    <EditText
        android:id="@+id/editTextMessage"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginStart="67dp"
        android:layout_marginTop="196dp"
        android:hint="Enter Your Message"
        android:inputType="textMultiLine"/>

    <Button
        android:id="@+id/btnsave"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextMessage"
        android:layout_marginStart="50dp"
```

```
        android:layout_marginTop="16dp"
        android:text="Save" />

    <Button
        android:id="@+id/btnupdate"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextMessage"
        android:layout_marginStart="150dp"
        android:layout_marginTop="16dp"
        android:text="Update" />

    <Button
        android:id="@+id/btndel"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/editTextMessage"
        android:layout_marginStart="250dp"
        android:layout_marginTop="16dp"
        android:text="Delete" />

    <Button
        android:id="@+id/btnselect"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/btnsave"
        android:layout_marginTop="16dp"
        android:text="View" />

    <Button
        android:id="@+id/btnselectperticular"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/btnselect"
        android:layout_marginTop="16dp"
        android:text="Search" />

    <EditText
        android:id="@+id/editTextSearch"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_below="@id/btnselectperticular"
        android:layout_marginTop="16dp"
        android:hint="Search"
        android:inputType="text"/>
</RelativeLayout>
```

Java

```
package com.example.prac13;

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Context;
```

```java
import android.database.Cursor;
import android.database.sqlite.SQLiteDatabase;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity implements View.OnClickListener {

    SQLiteDatabase db;
    EditText editSearchContact, editName, editEmailAddress, editMessage;
    Button btnSave, btnDelete, btnModify, btnView, btnSearch;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        // Create or open database
        db = openOrCreateDatabase("ContactDb", Context.MODE_PRIVATE, null);

        // Create table if it doesn't exist
        db.execSQL("CREATE TABLE IF NOT EXISTS Contact(cId INTEGER PRIMARY KEY AUTOINCREMENT, Name VARCHAR, Mail VARCHAR, CMessage VARCHAR);");

        // Initialize views
        editSearchContact = findViewById(R.id.editTextSearch);
        editName = findViewById(R.id.editTextName);
        editEmailAddress = findViewById(R.id.editTextEmailAddress);
        editMessage = findViewById(R.id.editTextMessage);

        btnSave = findViewById(R.id.btnsave);
        btnDelete = findViewById(R.id.btndel);
        btnModify = findViewById(R.id.btnupdate);
        btnView = findViewById(R.id.btnselect);
        btnSearch = findViewById(R.id.btnselectperticular);

        // Set click listeners
        btnSave.setOnClickListener(this);
        btnDelete.setOnClickListener( this);
        btnModify.setOnClickListener( this);
        btnView.setOnClickListener( this);
        btnSearch.setOnClickListener(this);
    }

    private void showMessage(Context context, String message) {
        Toast.makeText(context, message, Toast.LENGTH_SHORT).show();
    }

    @Override
    public void onClick(View v) {
        if (v.getId() == R.id.btnsave) {
            saveData();
        } else if (v.getId() == R.id.btnupdate) {
            updateData();
        } else if (v.getId() == R.id.btndel) {
            deleteData();
```

```java
      } else if (v.getId() == R.id.btnselect) {
         selectAllData();
      } else if (v.getId() == R.id.btnselectperticular) {
         selectParticularData();
      }
   }

   private void saveData() {
      if (isAnyFieldEmpty(editName, editEmailAddress, editMessage)) {
         showMessage(this, "Please enter all values");
         return;
      }

      String sql = "INSERT INTO Contact(Name, Mail, CMessage) VALUES (?, ?, ?)";
      db.execSQL(sql, new Object[]{
            editName.getText().toString(),
            editEmailAddress.getText().toString(),
            editMessage.getText().toString()
      });

      clearFields();
      showMessage(this, "Response Noted, Thanks!!");
   }

   private void updateData() {
      if (editSearchContact.getText().toString().trim().isEmpty()) {
         showMessage(this, "Enter Name");
         return;
      }

      Cursor c = db.rawQuery("SELECT * FROM Contact WHERE Name = ?", new
String[]{editSearchContact.getText().toString()});
      if (c.moveToFirst()) {
         String sql = "UPDATE Contact SET Name = ?, Mail = ?, CMessage = ? WHERE Name =
?";
         db.execSQL(sql, new Object[]{
               editName.getText().toString(),
               editEmailAddress.getText().toString(),
               editMessage.getText().toString(),
               editSearchContact.getText().toString()
         });
         clearFields();
         editSearchContact.getText().clear();
         showMessage(this, "Record Modified");
      } else {
         showMessage(this, "Invalid Name");
      }
      c.close();
   }

   private void deleteData() {
      if (editSearchContact.getText().toString().trim().isEmpty()) {
         showMessage(this, "Please enter Name");
         return;
      }

      Cursor c = db.rawQuery("SELECT * FROM Contact WHERE Name = ?", new
```

```
String[]{editSearchContact.getText().toString()});
    if (c.moveToFirst()) {
        db.execSQL("DELETE FROM Contact WHERE Name = ?", new
String[]{editSearchContact.getText().toString()});
        clearFields();
        showMessage(this, "Record Deleted");
    } else {
        showMessage(this, "Invalid Name");
    }
    c.close();
}

private void selectAllData() {
    Cursor c = db.rawQuery("SELECT * FROM Contact", null);
    if (c.getCount() == 0) {
        showMessage(this, "No records found");
        return;
    }

    StringBuilder buffer = new StringBuilder();
    while (c.moveToNext()) {
        buffer.append("Name: ").append(c.getString(1)).append("\n");
        buffer.append("Mail: ").append(c.getString(2)).append("\n");
        buffer.append("Message: ").append(c.getString(3)).append("\n\n");
    }

    showMessage(this, buffer.toString());
    c.close();
}

private void selectParticularData() {
    if (editSearchContact.getText().toString().trim().isEmpty()) {
        showMessage(this, "Enter Name");
        return;
    }

    Cursor c = db.rawQuery("SELECT * FROM Contact WHERE Name = ?", new
String[]{editSearchContact.getText().toString()});
    if (c.moveToFirst()) {
        editName.setText(c.getString(1));
        editEmailAddress.setText(c.getString(2));
        editMessage.setText(c.getString(3));
    } else {
        showMessage(this, "Invalid Name");
    }
    c.close();
}

private boolean isAnyFieldEmpty(EditText... fields) {
    for (EditText field : fields) {
        if (field.getText().toString().trim().isEmpty()) {
            return true;
        }
    }
    return false;
}
```
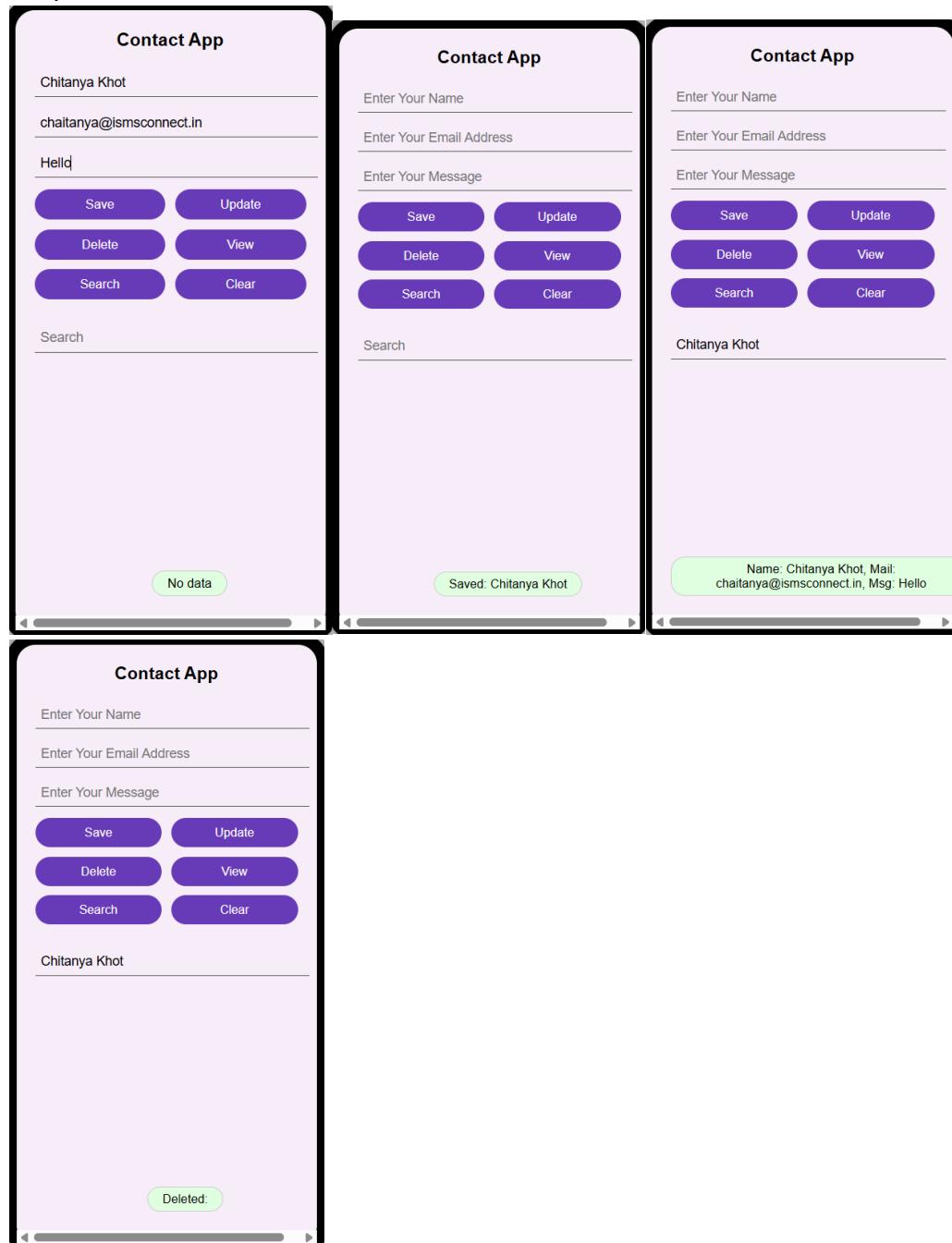
```
    private void clearFields() {
        editName.getText().clear();
        editEmailAddress.getText().clear();
        editMessage.getText().clear();
    }
}
```

Output -

Practical No: 14

Aim : Createanapplicationforanimation(Fade,Rotate,Moveandblink)

Xml

```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">

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="150dp"
        android:layout_height="150dp"
        android:layout_marginStart="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginTop="48dp"
        android:layout_marginBottom="8dp"
        app:srcCompat="@drawable/pic" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/imageView"
        android:layout_marginStart="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginBottom="8dp"
        android:onClick="move"
        android:text="Move" />

    <Button
        android:id="@+id/button2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/button"
        android:layout_centerHorizontal="true"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginBottom="8dp"
        android:onClick="fade"
        android:text="Fade" />

    <Button
        android:id="@+id/button3"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/button2"
        android:layout_marginStart="8dp"
        android:layout_marginTop="8dp"
        android:layout_marginEnd="8dp"
        android:layout_marginBottom="8dp"
        android:onClick="rotate"
        android:text="Rotate" />
```

```xml
    <Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/button3"
        android:layout_centerHorizontal="true"
        android:layout_marginBottom="8dp"
        android:onClick="blink"
        android:text="Blink" />
</RelativeLayout>
```

MainActivity.java

```java
package com.example.prac14;

import android.os.Bundle;


import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.view.animation.Animation;
import android.view.animation.AnimationUtils;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

    private ImageView imageView;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        imageView = findViewById(R.id.imageView); // Initialize once
    }

    public void move(View view) {
        startAnimation(R.anim.move);
    }

    public void fade(View view) {
        startAnimation(R.anim.fade_in);
    }

    public void rotate(View view) {
        startAnimation(R.anim.rotate);
    }

    public void blink(View view) {
        startAnimation(R.anim.blink);
    }


    private void startAnimation(int animationResource) {
        Animation animation = AnimationUtils.loadAnimation(getApplicationContext(),
animationResource);
```

```
      imageView.startAnimation(animation);
   }
}
```

blink.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<alpha xmlns:android="http://schemas.android.com/apk/res/android"
   android:fromAlpha="1.0"
   android:toAlpha="0.0"
   android:duration="300"
   android:repeatMode="reverse"
   android:repeatCount="infinite" />
```

fade_in.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<alpha xmlns:android="http://schemas.android.com/apk/res/android"
   android:fromAlpha="0.0"
   android:toAlpha="1.0"
   android:duration="1000" />
```
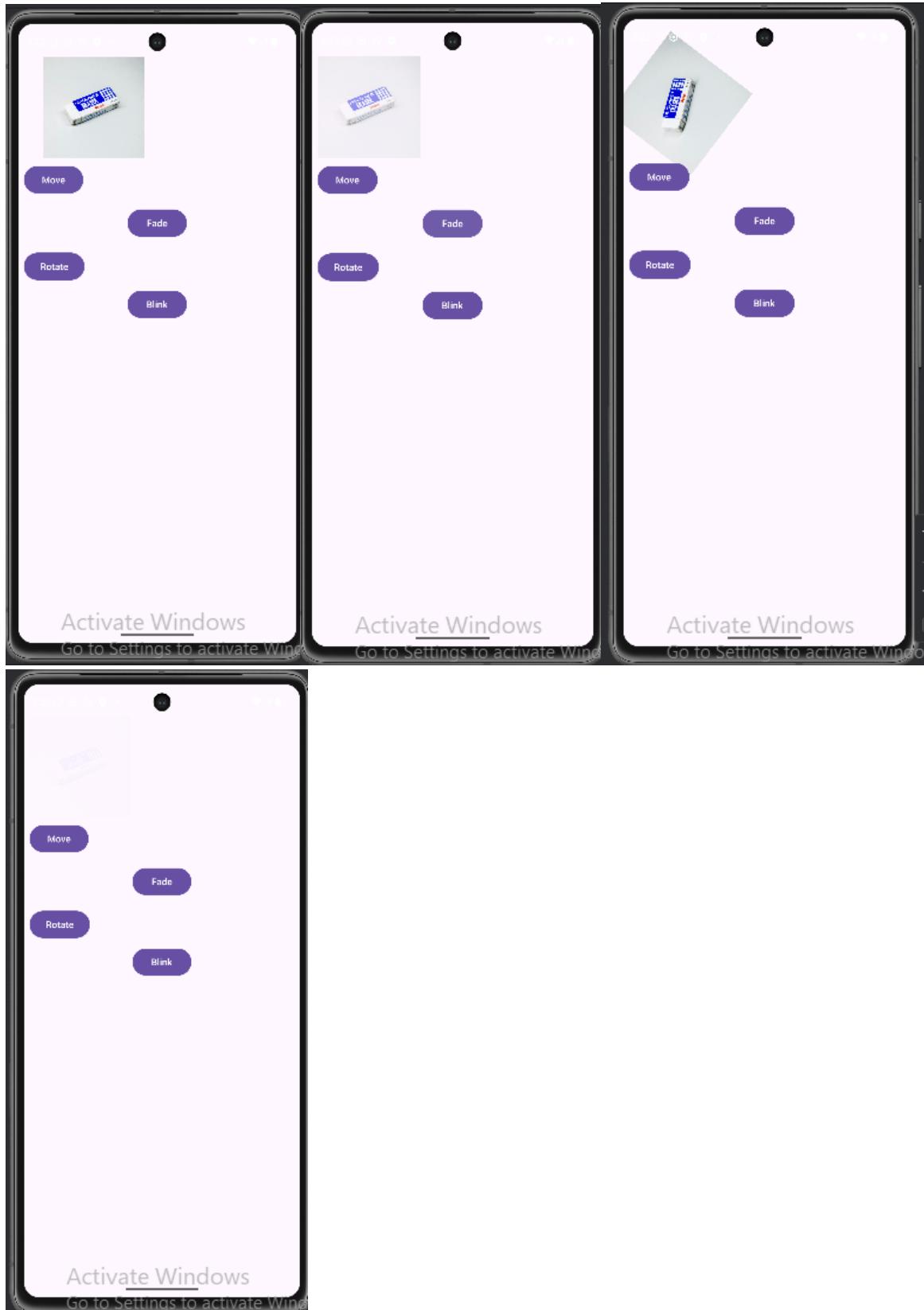
move.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<translate xmlns:android="http://schemas.android.com/apk/res/android"
   android:fromXDelta="0"
   android:toXDelta="100"
   android:duration="1000"/>
```

rotate.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<rotate xmlns:android="http://schemas.android.com/apk/res/android"
   android:fromDegrees="0"
   android:toDegrees="360"
   android:pivotX="50%"
   android:pivotY="50%"
   android:duration="1000" />
```

Output -

Practical No: 15

Aim : Shared reference

Xml

```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:id="@+id/textView_emailId"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Email Id :"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.095"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.22" />

    <TextView
        android:id="@+id/textView_password"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Password :"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.03"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.351" />

    <EditText
        android:id="@+id/editText_email"
        android:layout_width="202dp"
        android:layout_height="54dp"
        android:ems="10"
        android:inputType="textPersonName"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.802"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.227" />

    <EditText
        android:id="@+id/editText_password"
        android:layout_width="191dp"
```

```
        android:layout_height="43dp"
        android:ems="10"
        android:inputType="textPersonName"
        android:textSize="24sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.799"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.372" />

    <CheckBox
        android:id="@+id/checkBox"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Remember Me"
        android:textSize="18sp"
        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_signIn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="Save"
        android:text="Sign In"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.216"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.639" />

    <Button
        android:id="@+id/button_clear"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="clear"
        android:text="Clear"
        android:textSize="18sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.526"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.758" />

    <Button
        android:id="@+id/button_getData"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:onClick="Get"
        android:text="Get Data"
        android:textSize="18sp"
```

```
            app:layout_constraintBottom_toBottomOf="parent"
            app:layout_constraintEnd_toEndOf="parent"
            app:layout_constraintHorizontal_bias="0.848"
            app:layout_constraintStart_toStartOf="parent"
            app:layout_constraintTop_toTopOf="parent"
            app:layout_constraintVertical_bias="0.639" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

Java

```java
package com.example.prac15;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Context;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.View;
import android.widget.CheckBox;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends AppCompatActivity {
    SharedPreferences sharedPreferences;
    TextView password;
    TextView email;
    CheckBox remember;

    public static final String mypreferences = "mypref";
    public static final String Email = "emailKey";
    public static final String Password = "passwordKey";

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        email = (TextView) findViewById(R.id.editText_email);
        password = (TextView) findViewById(R.id.editText_password);
        remember = (CheckBox) findViewById(R.id.checkBox);

        sharedPreferences = getSharedPreferences(mypreferences, Context.MODE_PRIVATE);

        if (sharedPreferences.contains(Email)) {
            email.setText(sharedPreferences.getString(Email, ""));
        }

        if (sharedPreferences.contains(Password)) {
            password.setText(sharedPreferences.getString(Password, " "));
        }
    }

    public void Get(View view) {
        email = (TextView) findViewById(R.id.editText_email);
        password = (TextView) findViewById(R.id.editText_password);
        sharedPreferences = getSharedPreferences(mypreferences, Context.MODE_PRIVATE);
```
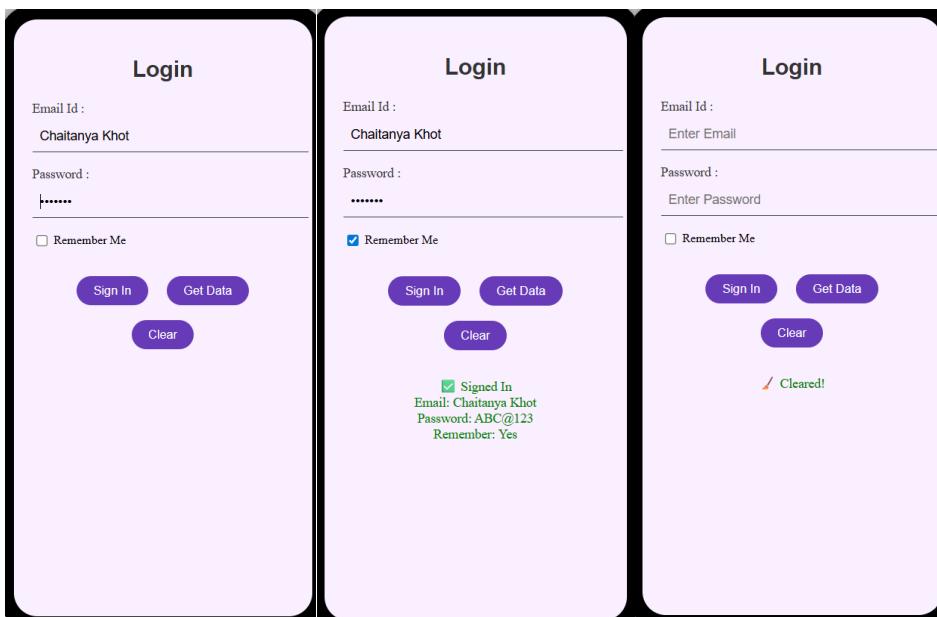
```
    if (sharedPreferences.contains(Email)) {
        email.setText(sharedPreferences.getString(Email, " "));
    }

    if (sharedPreferences.contains(Password)) {
        password.setText(sharedPreferences.getString(Password, " "));
    }
}

public void Save(View view) {
    if (remember.isChecked()) {
        String e = email.getText().toString();
        String p = password.getText().toString();
        SharedPreferences.Editor editor = sharedPreferences.edit();
        editor.putString(Email, e);
        editor.putString(Password, p);
        editor.commit();

        Toast toast = Toast.makeText(getApplicationContext(), "Value stored in shared
preference", Toast.LENGTH_SHORT);
        toast.show();
    }
}

public void clear(View view) {
    email = (TextView) findViewById(R.id.editText_email);
    password = (TextView) findViewById(R.id.editText_password);
    email.setText(" ");
    password.setText(" ");
}
}
```

Output -

Practical No: 16

Aim : Image Download

```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:id="@+id/textView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Web Page Image"
        android:textSize="25sp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.486"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.21" />

    <ImageView
        android:id="@+id/imageView"
        android:layout_width="205dp"
        android:layout_height="262dp"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.577" />

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Download"
        android:textAppearance="@style/TextAppearance.AppCompat.Display1"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.863" />
</androidx.constraintlayout.widget.ConstraintLayout>
```

java

```java
package com.example.prac16;

import androidx.appcompat.app.AppCompatActivity;
import android.app.ProgressDialog;
import android.graphics.Bitmap;
```

```java
import android.graphics.BitmapFactory;
import android.net.ConnectivityManager;
import android.os.Bundle;
import android.os.Handler;
import android.os.Message;
import android.view.View;
import android.widget.Button;
import android.widget.ImageView;
import android.widget.Toast;
import java.io.IOException;
import java.io.InputStream;
import java.net.HttpURLConnection;
import java.net.MalformedURLException;
import java.net.URL;
import java.net.URLConnection;

public class MainActivity extends AppCompatActivity {

    private ProgressDialog progressDialog;
    private Bitmap bitmap = null;
    Button b1;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

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

        b1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                checkInternetConenction();
                downloadImage
                    ("https://hips.hearstapps.com/hmg-prod.s3.amazonaws.com/images/2022-
chevrolet-corvette-z06-
1607016574.jpg?crop=0.737xw:0.738xh;0.181xw,0.218xh&resize=980:*.jpg");
            }
        });
    }

    private void downloadImage(String urlStr) {
        progressDialog = ProgressDialog.show(this, "", "Downloading Image from " + urlStr);
        final String url = urlStr;

        new Thread() {
            public void run() {
                InputStream in = null;
                Message msg = Message.obtain();
                msg.what = 1;

                try {
                    in = openHttpConnection(url);
                    bitmap = BitmapFactory.decodeStream(in);
                    Bundle b = new Bundle();
                    b.putParcelable("bitmap", bitmap);
                    msg.setData(b);
```

```java
            in.close();
        } catch (Exception e1) {
            e1.printStackTrace();
        }

        messageHandler.sendMessage(msg);
      }
    }.start();
  }

  private InputStream openHttpConnection(String urlStr) {
    InputStream in = null;
    int resCode;

    try {
      URL url = new URL(urlStr);
      URLConnection urlConn = url.openConnection();

      if (!(urlConn instanceof HttpURLConnection)) {
        throw new IOException("URL is not an Http URL");
      }

      HttpURLConnection httpConn = (HttpURLConnection) urlConn;
      httpConn.setAllowUserInteraction(false);
      httpConn.setInstanceFollowRedirects(true);
      httpConn.setRequestMethod("GET");
      httpConn.connect();
      resCode = httpConn.getResponseCode();

      if (resCode == HttpURLConnection.HTTP_OK) {
        in = httpConn.getInputStream();
      }

    } catch (MalformedURLException e) {
      e.printStackTrace();
    } catch (IOException e) {
      e.printStackTrace();
    }

    return in;
  }

  private Handler messageHandler = new Handler() {
    public void handleMessage(Message msg) {
      super.handleMessage(msg);
      ImageView img = (ImageView) findViewById(R.id.imageView);
      img.setImageBitmap((Bitmap) (msg.getData().getParcelable("bitmap")));
      progressDialog.dismiss();
    }
  };

  private boolean checkInternetConenction() {
    ConnectivityManager connec = (ConnectivityManager)
getSystemService(getBaseContext().CONNECTIVITY_SERVICE);

    if (connec.getNetworkInfo(0).getState() == android.net.NetworkInfo.State.CONNECTED ||
        connec.getNetworkInfo(0).getState() == android.net.NetworkInfo.State.CONNECTING ||
```

```
        connec.getNetworkInfo(1).getState() == android.net.NetworkInfo.State.CONNECTING ||
        connec.getNetworkInfo(1).getState() == android.net.NetworkInfo.State.CONNECTED) {

    Toast.makeText(this, "Connected", Toast.LENGTH_LONG).show();
    return true;

    } else if (connec.getNetworkInfo(0).getState() ==
android.net.NetworkInfo.State.DISCONNECTED ||
        connec.getNetworkInfo(1).getState() ==
android.net.NetworkInfo.State.DISCONNECTED) {

    Toast.makeText(this, "Not Connected", Toast.LENGTH_LONG).show();
    return false;
    }

    return false;
    }
}
```

Output -

Practical No: 17

Aim : Video Player

xml

```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">

    <VideoView
        android:id="@+id/videoView1"
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_centerInParent="true"
        android:layout_margin="8dp" />

</RelativeLayout>
```

java

```java
package com.example.prac17;

import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.MediaController;
import android.widget.VideoView;

public class MainActivity extends AppCompatActivity {

    VideoView videoid;
    MediaController mediaController;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);

        videoid = findViewById(R.id.videoView1);
        mediaController = new MediaController(this);

        // Set the video path from the raw resource folder
        videoid.setVideoPath("android.resource://" + getPackageName() + "/" + R.raw.tom);
        mediaController.setAnchorView(videoid);
        videoid.setMediaController(mediaController);
        videoid.start();
    }
}
```

Output -

Practical No: 18

Aim : Create a Flutter Application to display the Elevated Button.