

## Practical-1

**Aim: Design Login activity and implement control events: Use EditText, Checkbox and Buttons.**

**Program:**

**xml file:1**

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    tools:context=".MainActivity">
    <LinearLayout
        android:layout_width="409dp"
        android:layout_height="729dp"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        tools:ignore="UselessParent">
        <EditText
            android:id="@+id/edt1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginVertical="25dp"
            android:layout_marginLeft="25dp"
            android:layout_marginRight="40dp"
            android:autofillHints=""
            android:drawableStart="@drawable/ic_baseline_person_24"
            android:ems="10"
            android:hint="Username"
            android:inputType="textPersonName"
            android:textColorHint="#757575" />
        <EditText
            android:id="@+id/pass1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginBottom="20dp"
            android:layout_marginLeft="25dp"
            android:layout_marginRight="40dp"
            android:drawableStart="@drawable/ic_baseline_lock_24"
            android:drawableEnd="@drawable/ic_baseline_remove_red_eye_24"
            android:ems="10"
            android:hint="Password"
            android:inputType="textPassword"
            android:minHeight="48dp"
            android:autofillHints=""
```

## MOBILE APPLICATION DEVELOPMENT

```
        android:textColorHint="#757575" />

<CheckBox
    android:id="@+id/cb1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginHorizontal="25dp"
    android:text="IT" />
<CheckBox
    android:id="@+id/cb2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginHorizontal="25dp"
    android:text="CSE" />
<Button
    android:id="@+id/btn1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:text="Login" />
</LinearLayout>
</LinearLayout>
```

### java file:

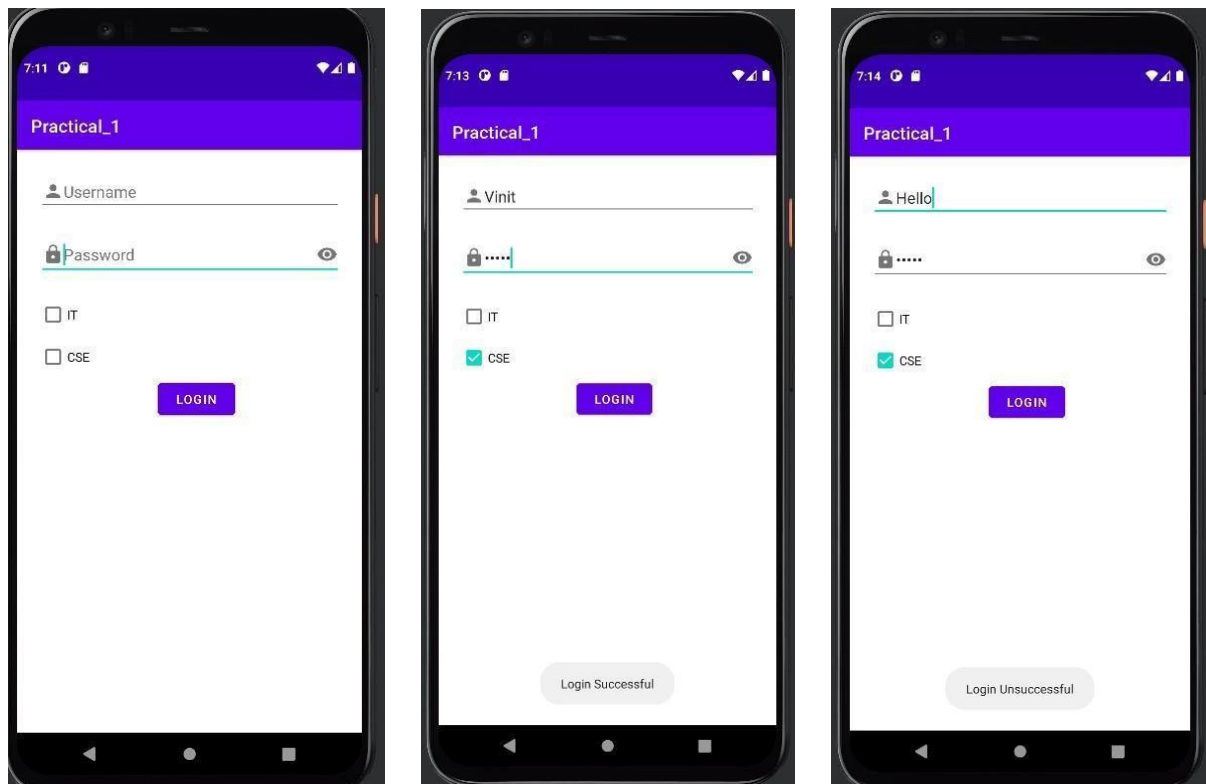
```
package com.example.practical_1;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button btn=(Button) findViewById(R.id.btn1);
        EditText edt=(EditText) findViewById(R.id.edt1);
        EditText pass=(EditText) findViewById(R.id.pass1);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if(edt.getText().toString().equals("Vinit") &&
                    pass.getText().toString().equals("hello"))
                {
                    Toast.makeText(MainActivity.this, "Login Successful",
Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

```
        else
        {
            Toast.makeText(MainActivity.this, "Login Unsuccessful",
            Toast.LENGTH_SHORT).show();
        }
    }
    });
}
```

### Output:



## Practical-2

**Aim: Implement Practical 1 using the following layouts:**

### 1. Linear Layout

**Program:**

**xml file:**

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

    <LinearLayout
        android:layout_width="409dp"
        android:layout_height="729dp"
        android:orientation="vertical"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp"
        tools:ignore="UselessParent">

        <EditText
            android:id="@+id/edt1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginVertical="25dp"
            android:layout_marginLeft="25dp"
            android:layout_marginRight="40dp"
            android:autofillHints=""
            android:drawableStart="@drawable/ic_baseline_person_24"
            android:ems="10"
            android:hint="Username"
            android:inputType="textPersonName"
            android:textColorHint="#757575" />

        <EditText
            android:id="@+id/pass1"
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:layout_marginBottom="20dp"
            android:layout_marginLeft="25dp"
            android:layout_marginRight="40dp"
            android:drawableStart="@drawable/ic_baseline_lock_24"
            android:drawableEnd="@drawable/ic_baseline_remove_red_eye_24"
            android:ems="10"
```

## MOBILE APPLICATION DEVELOPMENT

```
android:hint="Password"
android:inputType="textPassword"
android:minHeight="48dp"
android:autofillHints=""
android:textColorHint="#757575" />
```

```
<CheckBox
    android:id="@+id/cb1"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginHorizontal="25dp"
    android:text="IT" />
```

```
<CheckBox
    android:id="@+id/cb2"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_marginHorizontal="25dp"
    android:text="CSE" />
```

```
<Button
    android:id="@+id/btn1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="center"
    android:text="Login" />
```

```
</LinearLayout>
```

```
</LinearLayout>
```

### **java file:**

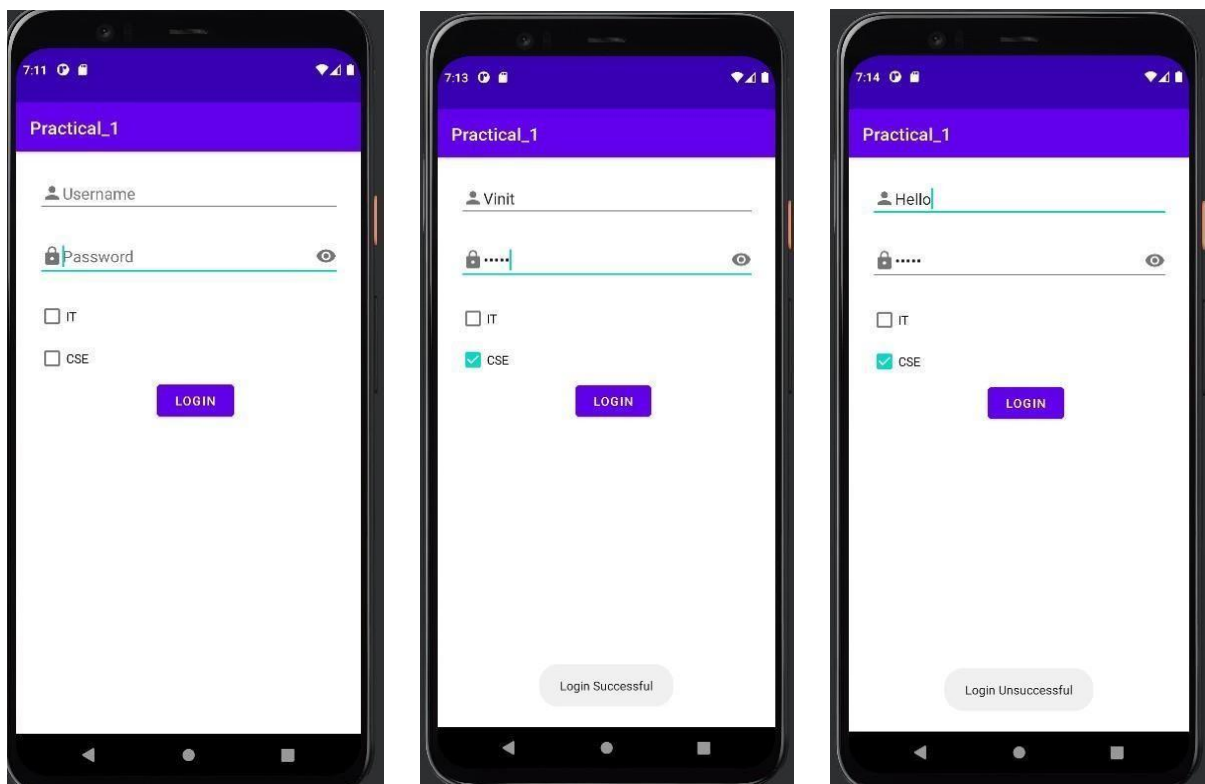
```
package com.example.practical_1;

import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button btn=(Button) findViewById(R.id.btn1);
        EditText edt=(EditText) findViewById(R.id.edt1);
        EditText pass=(EditText) findViewById(R.id.pass1);
        btn.setOnClickListener(new View.OnClickListener() {
```

## MOBILE APPLICATION DEVELOPMENT

```
@Override
public void onClick(View view) {
    if(edt.getText().toString().equals("Vinit") &&
        pass.getText().toString().equals("hello"))
    {
        Toast.makeText(MainActivity.this, "Login Successful",
            Toast.LENGTH_SHORT).show();
    }
    else
    {
        Toast.makeText(MainActivity.this, "Login Unsuccessful",
            Toast.LENGTH_SHORT).show();
    }
}
});
}
```

### Output:



## 2. Relative Layout

### Program:

### xml file:

```
<?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">

    <TextView
        android:id="@+id/textView2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Login"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="25dp"
        android:textColor="@color/black"
        android:textSize="35sp"
        android:textAllCaps="true"
        android:textStyle="bold"/>

    <EditText
        android:id="@+id/edt1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
        android:layout_marginTop="100dp"
        android:autofillHints=""
        android:ems="10"
        android:inputType="textPersonName"
        android:textColorHint="#757575"
        android:drawableStart="@drawable/ic_baseline_person_24"
        android:minHeight="48dp"
        android:hint="Username"
        tools:ignore="LabelFor,DuplicateSpeakableTextCheck"
        android:textSize="20sp"
        android:textColor="@color/black"/>

    <EditText
        android:id="@+id/edt2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_alignParentTop="true"
        android:layout_centerHorizontal="true"
```

## MOBILE APPLICATION DEVELOPMENT

```
android:layout_marginTop="155dp"
android:textSize="20sp"
android:drawableStart="@drawable/ic_baseline_lock_24"
android:drawableEnd="@drawable/ic_baseline_remove_red_eye_24"
android:ems="10"
android:hint="Password"
android:inputType="textPassword"
android:minHeight="48dp"
android:textColorHint="#757575"
tools:ignore="Autofill,HardcodedText"
android:textColor="@color/black"/>
```

```
<CheckBox
    android:id="@+id/cb"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="220dp"
    android:text="Proceed"
    android:textSize="15sp"
    android:textColor="@color/black" />
```

```
<Button
    android:id="@+id/btn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_alignParentTop="true"
    android:layout_centerHorizontal="true"
    android:layout_marginTop="290dp"
    android:textSize="30sp"
    android:text="Login"
    tools:ignore="HardcodedText,DuplicateSpeakableTextCheck"
    android:textStyle="bold" />
```

```
</RelativeLayout>
```

### java file:

```
package com.example.relativelayout;

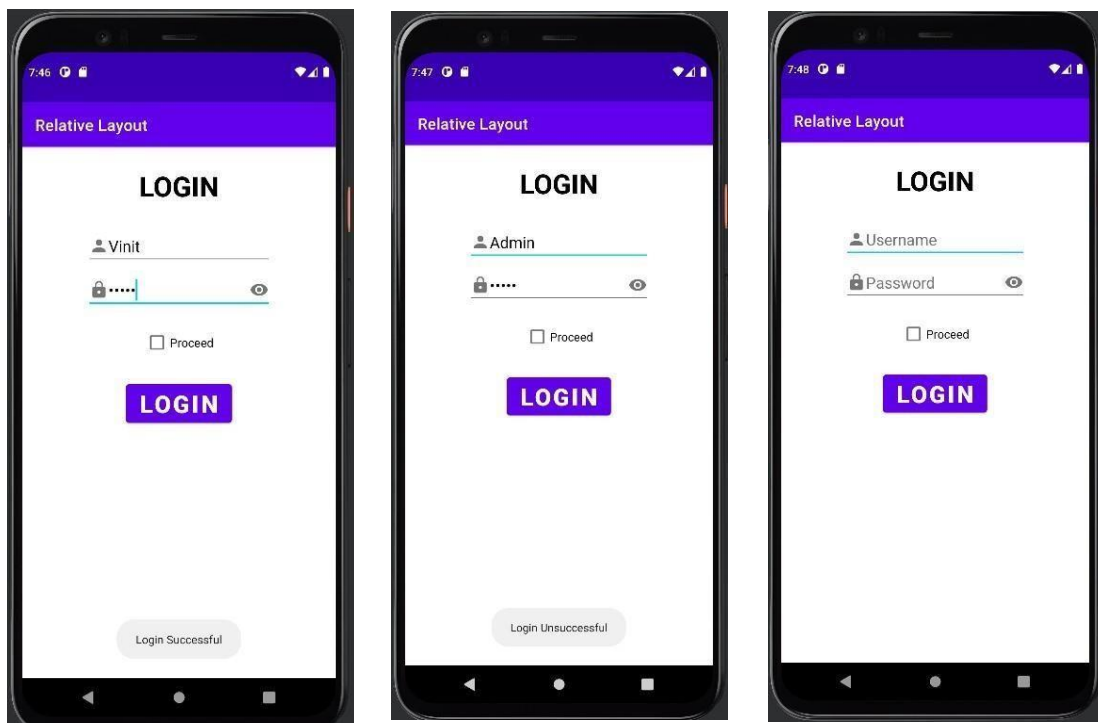
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState)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



## MOBILE APPLICATION DEVELOPMENT

```
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main);
Button btn=(Button) findViewById(R.id.btn);
EditText edt=(EditText) findViewById(R.id.edt1);
EditText pass=(EditText) findViewById(R.id.edt2);
btn.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        if(edt.getText().toString().equals("Vinit") &&
            pass.getText().toString().equals("hello"))
        {
            Toast.makeText(MainActivity.this, "Login Successful",
Toast.LENGTH_SHORT).show();
        }
        else
        {
            Toast.makeText(MainActivity.this, "Login Unsuccessful",
Toast.LENGTH_SHORT).show();
        }
    }
});
}
```

### Output:



## 3. Table Layout

### Program:

#### xml file:

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

    <TextView
        android:id="@+id/tv1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginTop="20sp"
        android:text="Login"
        android:textAlignment="center"
        android:textColor="@color/black"
        android:textSize="40sp"
        android:textStyle="bold" />

    <TableRow
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:layout_marginTop="20sp"
        android:layout_gravity="center">

        <TextView
            android:id="@+id/tv2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Name"
            android:textColor="@color/black"
            android:textSize="20sp"
            android:layout_marginStart="30sp" />

        <EditText
            android:id="@+id/ed1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_marginStart="10sp"
            android:hint="Username"
            android:autofillHints=""
            android:ems="10"
            android:inputType="textPersonName"
```

## MOBILE APPLICATION DEVELOPMENT

```
android:textColorHint="#757575"
tools:ignore="TouchTargetSizeCheck,DuplicateSpeakableTextCheck"
android:drawableStart="@drawable/ic_baseline_person_24"
android:textSize="20sp"
android:textColor="@color/black"/>
```

</TableRow>

<TableRow

```
android:layout_width="match_parent"
android:layout_height="match_parent"
android:layout_marginTop="20sp"
android:layout_gravity="center">
```

<TextView

```
android:id="@+id/tv3"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Password"
android:textColor="@color/black"
android:textSize="20sp"
android:layout_marginStart="30sp" />
```

<EditText

```
android:id="@+id/ed2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:hint="Password"
android:inputType="textPassword"
android:textColorHint="#757575"
tools:ignore="TouchTargetSizeCheck,DuplicateSpeakableTextCheck"
android:autofillHints=""
android:layout_marginStart="10sp"
android:drawableEnd="@drawable/ic_baseline_remove_red_eye_24"
android:drawableStart="@drawable/ic_baseline_lock_24"
android:textSize="20sp"
android:textColor="@color/black"/>
```

</TableRow>

<CheckBox

```
android:id="@+id/cb"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="20sp"
android:text="Proceed"
android:textSize="15sp"
android:textColor="@color/black"
android:layout_marginStart="30sp" />
```

## MOBILE APPLICATION DEVELOPMENT

```
<Button
    android:id="@+id/btn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Login"
    android:textSize="25sp"
    android:textStyle="bold"
    android:layout_marginStart="80sp"
    android:layout_marginEnd="80sp"
    tools:ignore="DuplicateSpeakableTextCheck" />
```

```
</TableLayout>
```

### **java file:**

```
package com.example.tablelayout;

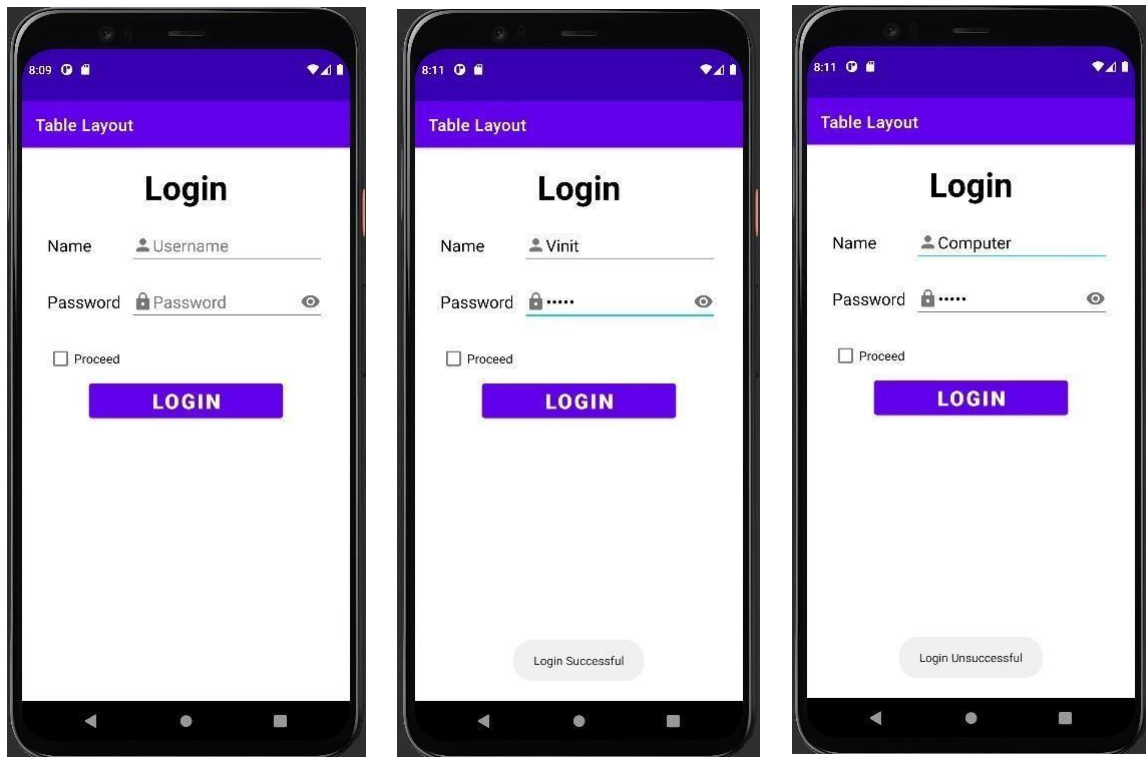
import androidx.appcompat.app.AppCompatActivity;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;
public class MainActivity extends AppCompatActivity {
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_main);
        Button btn = (Button) findViewById(R.id.btn);
        EditText edt = (EditText) findViewById(R.id.ed1);
        EditText pass = (EditText) findViewById(R.id.ed2);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                if(edt.getText().toString().equals("Vinit") &&
                    pass.getText().toString().equals("hello"))
                {
                    Toast.makeText(MainActivity.this, "Login Successful",
Toast.LENGTH_SHORT).show();
                }
                else
                {
                    Toast.makeText(MainActivity.this, "Login Unsuccessful",
Toast.LENGTH_SHORT).show();
                }
            }
        });
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

```
}  
});  
}  
}
```

### Output:



## Practical-3

**Aim: Create Activity and perform following:**

- 1. Implicit Intent**
- 2. Explicit Intent**
- 3. Start Activity for result**

**Program:**

**Activity\_main.xml file:**

```
<?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:layout_marginTop="32dp"

        android:text="Practical-3"

        android:textAppearance="@style/TextAppearance.AppCompat.Display1"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintHorizontal_bias="0.498"

        app:layout_constraintLeft_toLeftOf="parent"

        app:layout_constraintRight_toRightOf="parent"

        app:layout_constraintTop_toTopOf="parent"

        app:layout_constraintVertical_bias="0.058" />

    <Button
```

## MOBILE APPLICATION DEVELOPMENT

```
android:id="@+id/button"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_marginStart="120dp"  
android:layout_marginTop="32dp"  
android:text="implicit intent"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toBottomOf="@+id/textView" />
```

<Button

```
android:id="@+id/button2"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_marginStart="120dp"  
android:layout_marginTop="32dp"  
android:text="Explicit INTENT"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toBottomOf="@+id/button" />
```

<Button

```
android:id="@+id/button3"  
android:layout_width="wrap_content"  
android:layout_height="wrap_content"  
android:layout_marginStart="70dp"  
android:layout_marginTop="32dp"  
android:text="Start Activity For Result"  
app:layout_constraintStart_toStartOf="parent"  
app:layout_constraintTop_toBottomOf="@+id/button2" />
```

<TextView

## MOBILE APPLICATION DEVELOPMENT

```
android:id="@+id/textView2"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="140dp"
android:layout_marginTop="32dp"
android:text="DEFAULT MESSAGE"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/button3" />
```

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

### **MainActivity.java file:**

```
package com.example.practical_3;

import android.content.Intent;
import android.net.Uri;
import android.os.Bundle;
import android.view.View;
import android.widget.Button;
import android.widget.TextView;
import androidx.appcompat.app.AppCompatActivity;

public class MainActivity extends AppCompatActivity {
    TextView textView2;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Button implicit = findViewById(R.id.button);
        Button explicit = findViewById(R.id.button2);
```



## MOBILE APPLICATION DEVELOPMENT

```
Button StartActivityResultButton = findViewById(R.id.button3);
textView2=(TextView)findViewById(R.id.textView2);
implicit.setOnClickListener(new View.OnClickListener() {
    public void onClick(View view) {
        Intent intent=new Intent(Intent.ACTION_VIEW);
        intent.setData(Uri.parse("http://www.google.com"));
        startActivity(intent);
    }
});
explicit.setOnClickListener(new View.OnClickListener() {
    public void onClick(View view) {
        Intent i = new Intent(getApplicationContext(),
            Explicit.class);
        startActivity(i);}
    }
});
StartActivityResultButton.setOnClickListener(new View.OnClickListener()
{
    public void onClick(View view) {
        Intent i = new Intent(getApplicationContext(),
StartActivityResult.class);
        startActivityForResult(i, 2);}
    }
});
}
@Override

protected void onActivityResult(int requestCode, int resultCode, Intent data)
{
    super.onActivityResult(requestCode, resultCode, data);
    // check if the request code is same as what is passed here it is 2 if(requestCode==2)
    {
```

## MOBILE APPLICATION DEVELOPMENT

```
        String message=data.getStringExtra("MESSAGE"); textView2.setText(message);
    }
}
}
```

### **Activity\_explicit.xml file:**

```
<?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=".Explicit">

    <TextView
        android:id="@+id/textView4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Explicit intent"
        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" />

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

### **Explicit.java file:**

```
package com.example.practical_3;
```

## MOBILE APPLICATION DEVELOPMENT

```
import android.os.Bundle;

import androidx.appcompat.app.AppCompatActivity;

public class Explicit extends AppCompatActivity {

    @Override

    protected void onCreate(Bundle savedInstanceState) {

        super.onCreate(savedInstanceState);

        setContentView(R.layout.activity_explicit);

    }

}
```

### **Activity\_start\_activity\_for\_result.xml file:**

```
<?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=".StartActivityForResult">

    <TextView

        android:id="@+id/textView3"

        android:layout_width="wrap_content"

        android:layout_height="wrap_content"

        android:text="Enter a message!"

        android:textAppearance="@style/TextAppearance.AppCompat.Display2"

        app:layout_constraintBottom_toBottomOf="parent"

        app:layout_constraintEnd_toEndOf="parent"

        app:layout_constraintHorizontal_bias="0.492"
```

## MOBILE APPLICATION DEVELOPMENT

```
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"
app:layout_constraintVertical_bias="0.259" />
```

<EditText

```
android:id="@+id/editTextTextPersonName"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:ems="10"
android:inputType="textPersonName"
android:text="Enter the message here"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/textView3"
app:layout_constraintVertical_bias="0.168" />
```

<Button

```
android:id="@+id/button4"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="Send"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/editTextTextPersonName"
app:layout_constraintVertical_bias="0.167" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

## MOBILE APPLICATION DEVELOPMENT

### **StartActivityForResult.java file:**

```
package com.example.practical_3;

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

public class StartActivityForResult extends AppCompatActivity {
    EditText editText1;
    Button button1;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_start_activity_for_result);
        editText1=(EditText)findViewById(R.id.editTextTextPersonName);
        button1=(Button)findViewById(R.id.button4);
        button1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View arg0) {
                String message=editText1.getText().toString();
                Intent intent=new Intent();
                intent.putExtra("MESSAGE",message);
                setResult(2,intent);
                finish();//finishing activity
            }
        });
    }
}
```

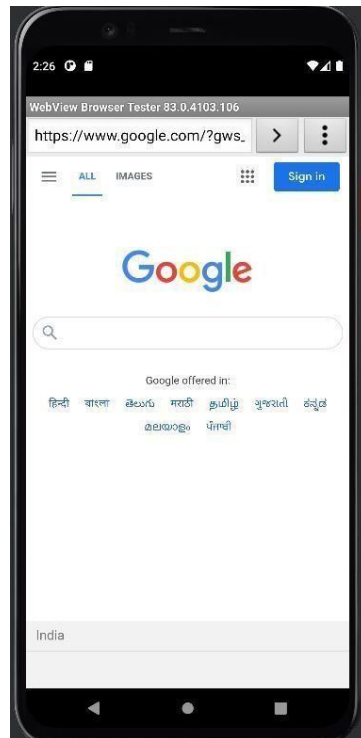
## MOBILE APPLICATION DEVELOPMENT

### Output:

#### main activity:



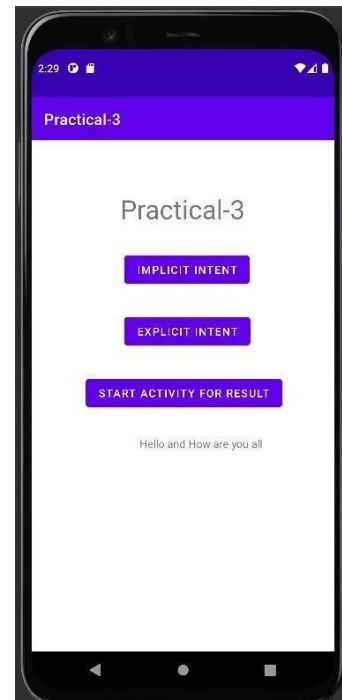
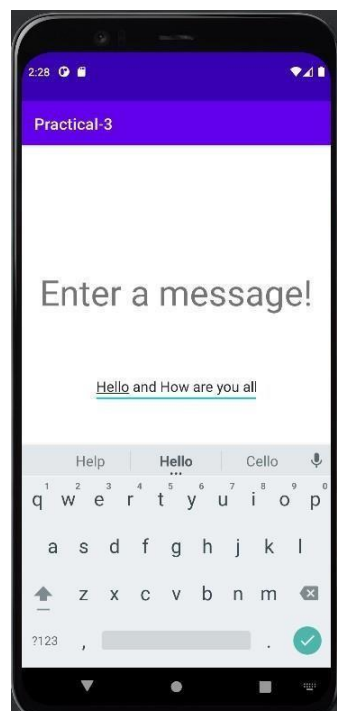
#### Implicit:



#### Explicit:



#### Start activity for result:



## Practical-4

**Aim: Implement activity Lifecycle and State Callbacks**

**Program:**

**MainActivity.java**

```
package com.example.practical4;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.util.Log;

public class MainActivity extends AppCompatActivity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        Log.d("lifecycle", "onCreate invoked");
    }

    @Override
    protected void onStart(){
        super.onStart();
        Log.d("lifecycle", "onStart invoked");
    }

    @Override
    protected void onResume(){
        super.onResume();
        Log.d("lifecycle", "onResume invoked");
    }

    @Override
    protected void onPause(){
        super.onPause();
        Log.d("lifecycle", "onPause invoked");
    }

    @Override
    protected void onStop(){
        super.onStop();
        Log.d("lifecycle", "onStop invoked");
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

@Override

```
protected void onRestart(){
super.onRestart();
Log.d("lifecycle","onRestart invoked");
}
```

@Override

```
protected void onDestroy(){
super.onDestroy();
Log.d("lifecycle","onDestroy invoked");
}
}
```

### 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:id="@+id/txt1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Practical 4"
    android:textSize="34sp"
    android:textColor="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.201"/>
```



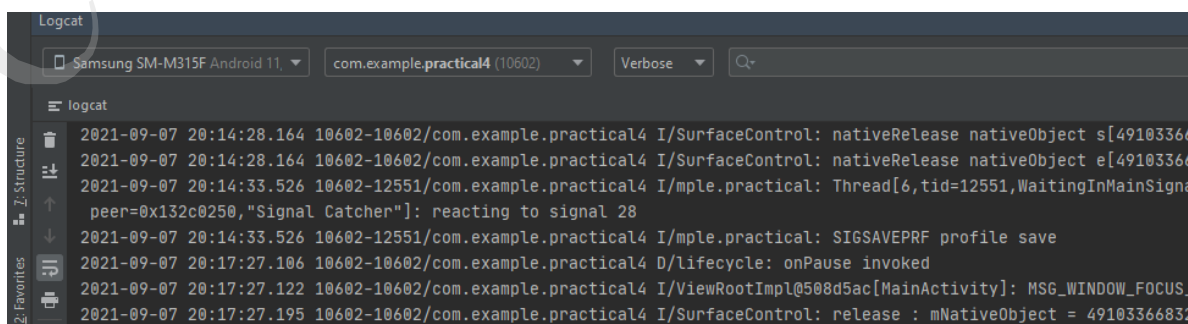
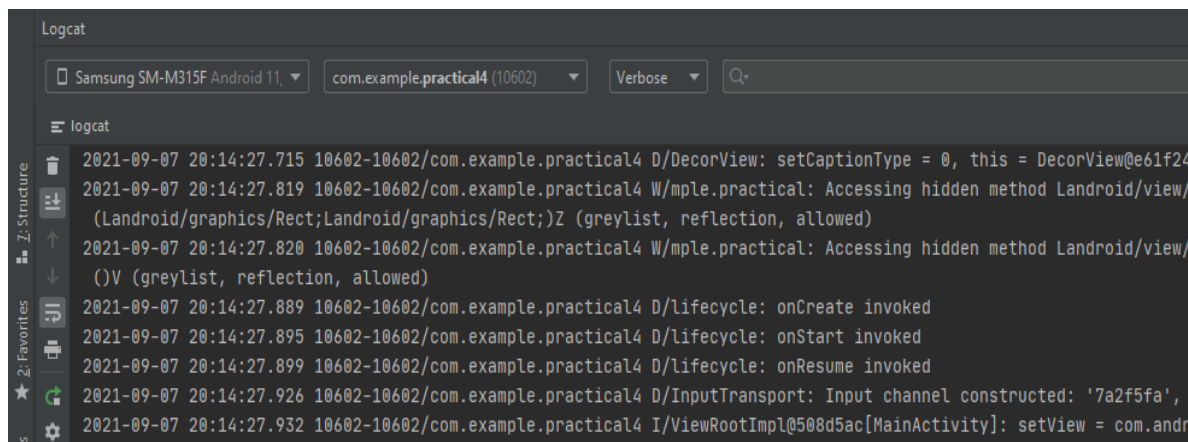
# MOBILE APPLICATION DEVELOPMENT

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Activity Lifecycle"
    android:textColor="@color/black"
    android:textSize="34sp"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/txt1"
    app:layout_constraintVertical_bias="0.378"/>
```

&lt;/androidx.constraintlayout.widget.ConstraintLayout&gt;

### Output:

## onCreate(), onStart(), onResume()



## MOBILE APPLICATION DEVELOPMENT

onStop()

A screenshot of the Android Studio Logcat window. The top bar shows the device as 'Samsung SM-M315F Android 11' and the package as 'com.example.practical4 (10602)'. The filter is set to 'Verbose'. The log shows the following messages:

```
2021-09-07 20:17:27.592 10602-10602/com.example.practical4 I/ViewRootImpl@508d5ac[MainActivity]: Rel
req=(1080,2340)8 dur=13 res=0x5 s={false 0} ch=true fn=3
2021-09-07 20:17:27.595 10602-10602/com.example.practical4 I/ViewRootImpl@508d5ac[MainActivity]: sto
2021-09-07 20:17:27.596 10602-10602/com.example.practical4 D/lifecycle: onStop invoked
2021-09-07 20:19:10.903 10602-10602/com.example.practical4 I/SurfaceControl: assignNativeObject: nat
.view.SurfaceControl.readFromParcel:1115 android.view.IWindowSession$Stub$Proxy.layout:1810 andro
ViewRootImpl.performTraversals:3360 android.view.ViewRootImpl.doTraversals:2618 android.view.ViewRo
```

onRestart(), onStart(), onResume()

A screenshot of the Android Studio Logcat window. The top bar shows the device as 'Samsung SM-M315F Android 11' and the package as 'com.example.practical4 (10602)'. The filter is set to 'Verbose'. The log shows the following messages:

```
2021-09-07 20:19:10.911 10602-10602/com.example.practical4 I/ViewRootImpl@508d5ac[MainActivity]: Relayout returned: old=(0,
req=(1080,2340)4 dur=14 res=0x1 s={false 0} ch=false fn=1
2021-09-07 20:19:10.913 10602-10602/com.example.practical4 I/ViewRootImpl@508d5ac[MainActivity]: stopped(false) old=true
2021-09-07 20:19:10.915 10602-10602/com.example.practical4 D/lifecycle: onRestart invoked
2021-09-07 20:19:10.923 10602-10602/com.example.practical4 D/lifecycle: onStart invoked
2021-09-07 20:19:10.931 10602-10602/com.example.practical4 I/ViewRootImpl@508d5ac[MainActivity]: stopped(false) old=false
2021-09-07 20:19:10.933 10602-10602/com.example.practical4 D/lifecycle: onResume invoked
2021-09-07 20:19:10.976 10602-10602/com.example.practical4 I/SurfaceControl: assignNativeObject: nativeObject = 0 Surface(r
```

onDestroy()

A screenshot of the Android Studio Logcat window. The top bar shows the device as 'Samsung SM-M315F Android 11' and the package as 'com.example.practical4 (10602)'. The filter is set to 'Verbose'. The log shows the following messages:

```
2021-09-07 20:20:32.094 10602-10602/com.example.practical4 I/ViewRootImpl@508d5ac[MainActivity]: Relayout returned: old=(0,
req=(1080,2340)8 dur=25 res=0x5 s={false 0} ch=true fn=2
2021-09-07 20:20:32.097 10602-10602/com.example.practical4 I/ViewRootImpl@508d5ac[MainActivity]: stopped(true) old=false
2021-09-07 20:20:32.099 10602-10602/com.example.practical4 D/lifecycle: onStop invoked
2021-09-07 20:20:32.362 10602-10602/com.example.practical4 D/lifecycle: onDestroy invoked
```

## Practical-5

**Aim: Use an Options Menu.**

**Program:**

**MainActivity.java**

```
package com.example.practical5;

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

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.option_menu, menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(@NonNull MenuItem item) {
        switch(item.getItemId()){
            case R.id.item1:
                Toast.makeText(this, "Item 1 is selected", Toast.LENGTH_SHORT).show();
            case R.id.item2:
                Toast.makeText(this, "Item 2 is selected", Toast.LENGTH_SHORT).show();
            case R.id.item3:
                Toast.makeText(this, "Item 3 is selected", Toast.LENGTH_SHORT).show();
            case R.id.subitem1:
                Toast.makeText(this, "Sub Item 1 is selected", Toast.LENGTH_SHORT).show();
            case R.id.subitem2:
                Toast.makeText(this, "Sub Item 2 is selected", Toast.LENGTH_SHORT).show();
            default:
                return super.onOptionsItemSelected(item);
        }
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

```
}
```

### **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"
    android:background="#8357E3"
    tools:context=".MainActivity">
```

```
<TextView
    android:id="@+id/txt1"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Practical 5"
    android:textSize="34sp"
    android:textColor="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintLeft_toLeftOf="parent"
    app:layout_constraintRight_toRightOf="parent"
    app:layout_constraintTop_toTopOf="parent"
    app:layout_constraintVertical_bias="0.201" />
```

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Option Menu"
    android:textSize="34sp"
    android:textColor="@color/black"
    app:layout_constraintBottom_toBottomOf="parent"
```

## MOBILE APPLICATION DEVELOPMENT

```
app:layout_constraintLeft_toLeftOf="parent"
app:layout_constraintRight_toRightOf="parent"
app:layout_constraintTop_toBottomOf="@+id/txt1"
app:layout_constraintVertical_bias="0.378" />
```

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

### **option\_menu.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<menu xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:app="http://schemas.android.com/apk/res-auto">

    <item
        android:id="@+id/item1"
        android:icon="@drawable/ic_icon"
        android:title="Item 1"
        app:showAsAction="ifRoom"/>

    <item
        android:id="@+id/item2"
        android:title="Item 2"
        app:showAsAction="never"/>

    <item
        android:id="@+id/item3"
        android:title="Item 3"
        app:showAsAction="never">
        <menu>

            <item
                android:id="@+id/subitem1"
                android:title="Sub Item 1"/>

            <item
                android:id="@+id/subitem2"
                android:title="Sub Item 2"/>

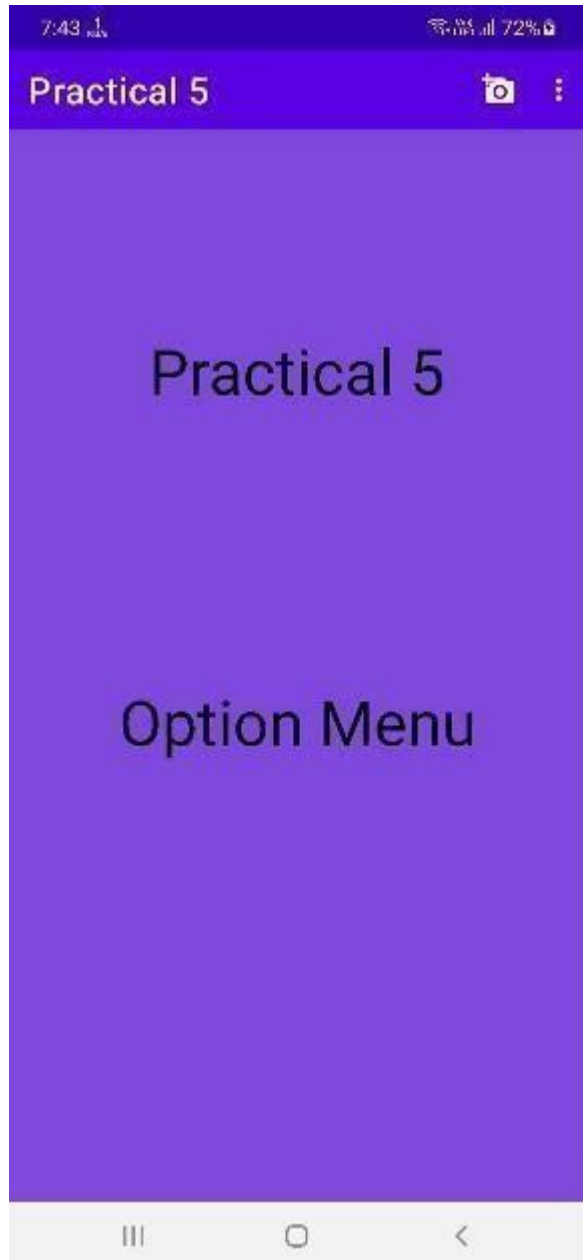
        </menu>
    </item>>

</menu>
```

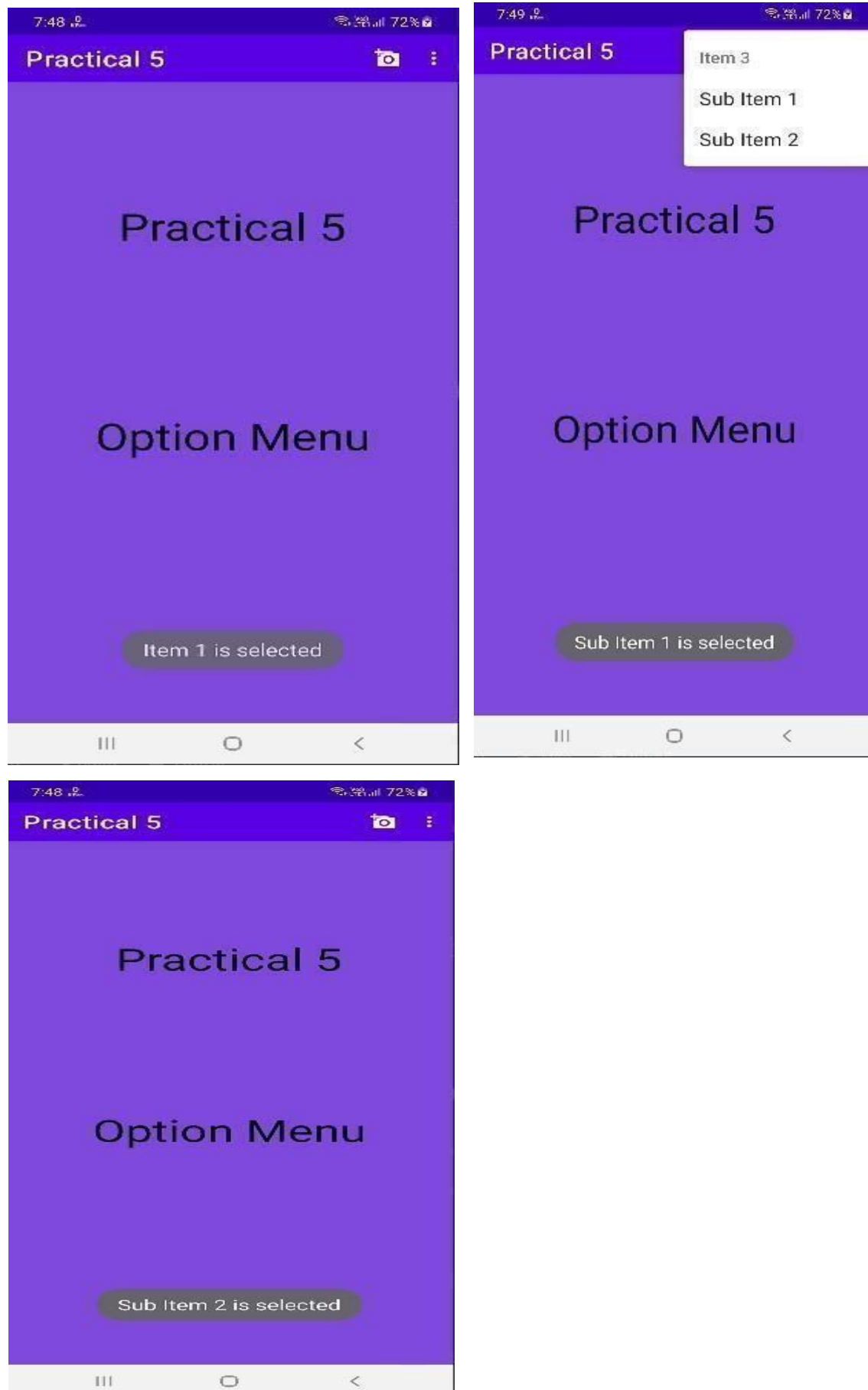
## MOBILE APPLICATION DEVELOPMENT

### Output:

#### Home Screen



## MOBILE APPLICATION DEVELOPMENT

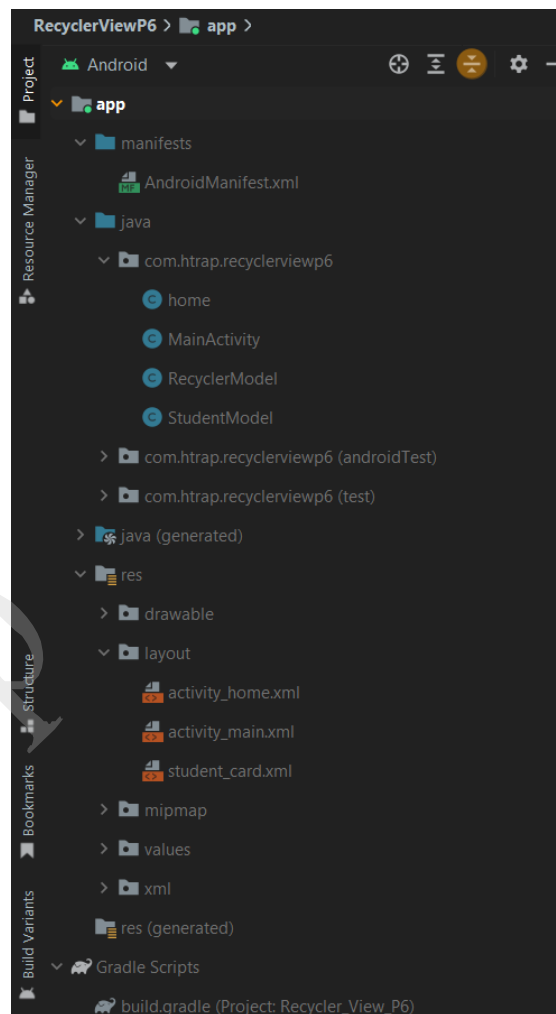


## Practical-6

**Aim: Create a Recycler View and list the details of student using following fields:**

- 1. Name**
- 2. Address**
- 3. Photo (Image)**
- 4. Delete ( Button Operation)**

**Program:**





## MOBILE APPLICATION DEVELOPMENT

### **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:layout_gravity="center"
    android:gravity="center"
    tools:context=".MainActivity"
    android:orientation="vertical">
    <androidx.cardview.widget.CardView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:cardCornerRadius="100dp"
        app:cardBackgroundColor="@color/black">
        <ImageView
            android:padding="30dp"
            android:layout_width="200dp"
            android:layout_height="200dp"
            android:src="@drawable/image_app_icon"
        />
    </androidx.cardview.widget.CardView>
    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Practical - 6"
        android:textAlignment="center"
        android:textSize="36sp"
        android:textStyle="bold"
```

## MOBILE APPLICATION DEVELOPMENT

```
        android:textColor="@color/black"
        android:layout_marginTop="10dp"
    />
```

```
<LinearLayout
```

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="14dp"
    android:orientation="horizontal"
>
```

```
<TextView
```

```
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Aim:"
    android:textSize="24sp"
    android:textStyle="bold"
    android:textColor="@color/black"
    android:layout_marginTop="10dp"
/>
```

```
<TextView
```

```
    android:layout_marginLeft="15dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Create a Recycler View and list the details of student"
    android:textSize="24sp"
    android:textColor="@color/black"
    android:layout_marginTop="10dp"
/>
```

```
</LinearLayout>
```

## MOBILE APPLICATION DEVELOPMENT

```
<Button
```

```
    android:id="@+id/next"
```

```
    android:layout_marginTop="30dp"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:text="Next"
```

```
    android:textAllCaps="false"
```

```
    android:drawableLeft="@drawable/ic_baseline_arrow_right_alt_24"
```

```
    android:textColor="@color/white"
```

```
    android:theme="@style/Animation.Design.BottomSheetDialog"
```

```
</LinearLayout>
```

### **activity\_home.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=".home">
```

```
<androidx.recyclerview.widget.RecyclerView
```

```
    android:id="@+id/recycleview"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
</RelativeLayout>
```

## MOBILE APPLICATION DEVELOPMENT

### **student\_card.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="wrap_content"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_margin="8dp">

    <androidx.cardview.widget.CardView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        app:cardElevation="2dp"
        app:cardCornerRadius="5dp"
    >
        <LinearLayout
            android:layout_width="match_parent"
            android:layout_height="wrap_content"
            android:orientation="horizontal">

            <LinearLayout
                android:layout_marginLeft="10dp"
                android:layout_width="wrap_content"
                android:layout_height="wrap_content"
            >
                <ImageView
                    android:padding="2dp"
                    android:layout_width="100dp"
                    android:layout_height="100dp"
                    android:id="@+id/imgbtn"
                    android:src="@drawable/ic_launcher_foreground"/>
            </LinearLayout>
        </LinearLayout>
```

## MOBILE APPLICATION DEVELOPMENT

```
android:layout_marginLeft="10dp"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:orientation="vertical">
```

```
<TextView
    android:id="@+id/name"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/parth_bhatia"
    android:textStyle="bold"
    android:textColor="@color/black"
    android:textSize="25dp"/>
```

```
<TextView
    android:layout_marginTop="5dp"
    android:id="@+id/address"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="@string/parth_add"
    android:textColor="@color/black"
    android:textSize="15dp"/>
```

```
<Button
    android:id="@+id/delButton"
    android:layout_marginTop="5dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:drawableLeft="@drawable/ic_baseline_delete_24"
    android:text="Delete"
    android:textAllCaps="false"
/>
```

## MOBILE APPLICATION DEVELOPMENT

```
</LinearLayout>
</LinearLayout>
</androidx.cardview.widget.CardView>
</LinearLayout>
```

### **MainActivity.java**

```
package com.htrap.recyclerviewp6;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

    Button next_btn;
    int flag=0;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        next_btn = findViewById(R.id.next);
        Intent intent = new Intent(MainActivity.this,home.class);

        new Handler().postDelayed(new Runnable() {
            @Override
            public void run() {
```

## MOBILE APPLICATION DEVELOPMENT

```
        if(flag==0) {
            startActivity(intent);
            finish();
        }
    }
},2000);
next_btn.setOnClickListener(new View.OnClickListener() {

    @Override
    public void onClick(View v) {
        flag=1;
        startActivity(intent);
        finish();
    }
});
}
}
```

### **home.java**

```
package com.httrap.recyclerviewp6;

import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;

import android.os.Bundle;

import java.util.ArrayList;

public class home extends AppCompatActivity
```

## MOBILE APPLICATION DEVELOPMENT

```
RecyclerView recyclerView;

ArrayList<StudentModel> list = new ArrayList<>();

RecyclerViewAdapter adapter;

@Override

protected void onCreate(Bundle savedInstanceState) {

    super.onCreate(savedInstanceState);

    setContentView(R.layout.activity_home);

    recyclerView = findViewById(R.id.recycleview);

    recyclerView.setLayoutManager(new LinearLayoutManager(this));

    list.add(new
    StudentModel(R.drawable.a,getString(R.string.parth_bhatia),getString(R.string.parth_add)));

    list.add(new
    StudentModel(R.drawable.b,getString(R.string.keertan_bhatt),getString(R.string.keertan_add
    )));

    list.add(new
    StudentModel(R.drawable.c,getString(R.string.mustafa),getString(R.string.mustafa_add)));

    list.add(new
    StudentModel(R.drawable.d,getString(R.string.vedant),getString(R.string.vedant_add)));

    list.add(new
    StudentModel(R.drawable.e,getString(R.string.meet),getString(R.string.meet_add)));

    list.add(new
    StudentModel(R.drawable.f,getString(R.string.rakesh),getString(R.string.rakesh_add)));

    list.add(new
    StudentModel(R.drawable.g,getString(R.string.ruchit),getString(R.string.ruchit_add)));

    list.add(new
    StudentModel(R.drawable.a,getString(R.string.parth_bhatia),getString(R.string.parth_add)));

    list.add(new
    StudentModel(R.drawable.b,getString(R.string.keertan_bhatt),getString(R.string.keertan_add
    )));

    list.add(new
    StudentModel(R.drawable.c,getString(R.string.mustafa),getString(R.string.mustafa_add)));
```



## MOBILE APPLICATION DEVELOPMENT

```
StudentModel(R.drawable.d,getString(R.string.vedant),getString(R.string.vedant_add)));

    list.add(new
StudentModel(R.drawable.e,getString(R.string.meet),getString(R.string.meet_add)));

    list.add(new
StudentModel(R.drawable.f,getString(R.string.rakesh),getString(R.string.rakesh_add)));

    list.add(new
StudentModel(R.drawable.g,getString(R.string.ruchit),getString(R.string.ruchit_add)));

    list.add(new
StudentModel(R.drawable.a,getString(R.string.parth_bhatia),getString(R.string.parth_add)));

    list.add(new
StudentModel(R.drawable.b,getString(R.string.keertan_bhatt),getString(R.string.keertan_add
)));

    list.add(new
StudentModel(R.drawable.c,getString(R.string.mustafa),getString(R.string.mustafa_add)));

    list.add(new
StudentModel(R.drawable.d,getString(R.string.vedant),getString(R.string.vedant_add)));

    list.add(new
StudentModel(R.drawable.e,getString(R.string.meet),getString(R.string.meet_add)));

    list.add(new
StudentModel(R.drawable.f,getString(R.string.rakesh),getString(R.string.rakesh_add)));

    list.add(new
StudentModel(R.drawable.g,getString(R.string.ruchit),getString(R.string.ruchit_add)));

    list.add(new
StudentModel(R.drawable.a,getString(R.string.parth_bhatia),getString(R.string.parth_add)));

    list.add(new
StudentModel(R.drawable.b,getString(R.string.keertan_bhatt),getString(R.string.keertan_add
)));

    list.add(new
StudentModel(R.drawable.c,getString(R.string.mustafa),getString(R.string.mustafa_add)));

    list.add(new
StudentModel(R.drawable.d,getString(R.string.vedant),getString(R.string.vedant_add)));

    list.add(new
StudentModel(R.drawable.e,getString(R.string.meet),getString(R.string.meet_add)));

    list.add(new
StudentModel(R.drawable.f,getString(R.string.rakesh),getString(R.string.rakesh_add)));
```

## MOBILE APPLICATION DEVELOPMENT

```
StudentModel(R.drawable.g,getString(R.string.ruchit),getString(R.string.ruchit_add)));

    list.add(new
StudentModel(R.drawable.a,getString(R.string.parth_bhatia),getString(R.string.parth_add)));

    list.add(new
StudentModel(R.drawable.b,getString(R.string.keertan_bhatt),getString(R.string.keertan_add
)));

    list.add(new
StudentModel(R.drawable.c,getString(R.string.mustafa),getString(R.string.mustafa_add)));

    list.add(new
StudentModel(R.drawable.d,getString(R.string.vedant),getString(R.string.vedant_add)));

    list.add(new
StudentModel(R.drawable.e,getString(R.string.meet),getString(R.string.meet_add)));

    list.add(new
StudentModel(R.drawable.f,getString(R.string.rakesh),getString(R.string.rakesh_add)));

    list.add(new
StudentModel(R.drawable.g,getString(R.string.ruchit),getString(R.string.ruchit_add)));

    adapter =new RecyclerViewModel(this,
        list);
    recyclerView.setAdapter(adapter);
}
}
```

### **StudentModel.java**

```
package com.htrap.recyclerviewp6;

public class StudentModel {

    public String name, Address;
    public int img;

    public StudentModel(int img,String name, String address) {
```

## MOBILE APPLICATION DEVELOPMENT

```
        this.name = name;
        Address = address;
        this.img = img;
    }
    public String getName() {
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }
    public String getAddress() {
        return Address;
    }
    public void setAddress(String address) {
        Address = address;
    }
    public int getImg() {
        return img;
    }
    public void setImg(int img) {
        this.img = img;
    }
}
```

### **RecyclerModel.java**

```
package com.htrap.recyclerviewp6;

import android.annotation.SuppressLint;
import android.content.Context;
```

## MOBILE APPLICATION DEVELOPMENT

```
import android.content.DialogInterface;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.Button;
import android.widget.ImageButton;
import android.widget.ImageView;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AlertDialog;
import androidx.recyclerview.widget.RecyclerView;

import java.util.ArrayList;

public class RecyclerViewModel extends RecyclerView.Adapter<RecyclerViewModel.ViewHolder> {

    private final Context context;
    private final ArrayList<StudentModel> studentModelArrayList;

    public RecyclerViewModel(Context context, ArrayList<StudentModel> studentModels) {
        this.context = context;
        this.studentModelArrayList = studentModels;
    }

    @NonNull
    @Override
    public ViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType) {
        View v = LayoutInflater.from(context).inflate(R.layout.student_card, parent, false);
```

## MOBILE APPLICATION DEVELOPMENT

```
        return new ViewHolder(v);
    }

    @Override
    public void onBindViewHolder(@NonNull ViewHolder holder,
    @SuppressWarnings("RecyclerView") int position) {
        holder.name.setText(studentModelArrayList.get(position).name);
        holder.address.setText(studentModelArrayList.get(position).Address);
        holder.img.setImageResource(studentModelArrayList.get(position).img);

        holder.delBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                AlertDialog.Builder builder = new AlertDialog.Builder(context)
                    .setTitle("Delete Student")
                    .setMessage("Are you sure want to Delete ?")
                    .setIcon(R.drawable.ic_baseline_delete_24)
                    .setPositiveButton("yes", new DialogInterface.OnClickListener() {
                        @Override
                        public void onClick(DialogInterface dialog, int which) {
                            studentModelArrayList.remove(position);
                            notifyItemRemoved(position);
                        }
                    })
                    .setNegativeButton("No", new DialogInterface.OnClickListener() {
                        @Override
                        public void onClick(DialogInterface dialog, int which) {
                            Toast.makeText(context, "Data is not Deleted!",
                            Toast.LENGTH_SHORT).show();
                        }
                    });
            }
        });
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

```
        builder.show();  
    }  
});  
}
```

@Override

```
public int getItemCount() {return studentModelArrayList.size();}
```

```
public class ViewHolder extends RecyclerView.ViewHolder{
```

```
    TextView name;
```

```
    TextView address;
```

```
    ImageView img;
```

```
    Button delBtn;
```

```
public ViewHolder(@NonNull View itemView) {
```

```
    super(itemView);
```

```
    name = itemView.findViewById(R.id.name);
```

```
    address = itemView.findViewById(R.id.address);
```

```
    img = itemView.findViewById(R.id.imgbtn);
```

```
    delBtn = itemView.findViewById(R.id.delButton);
```

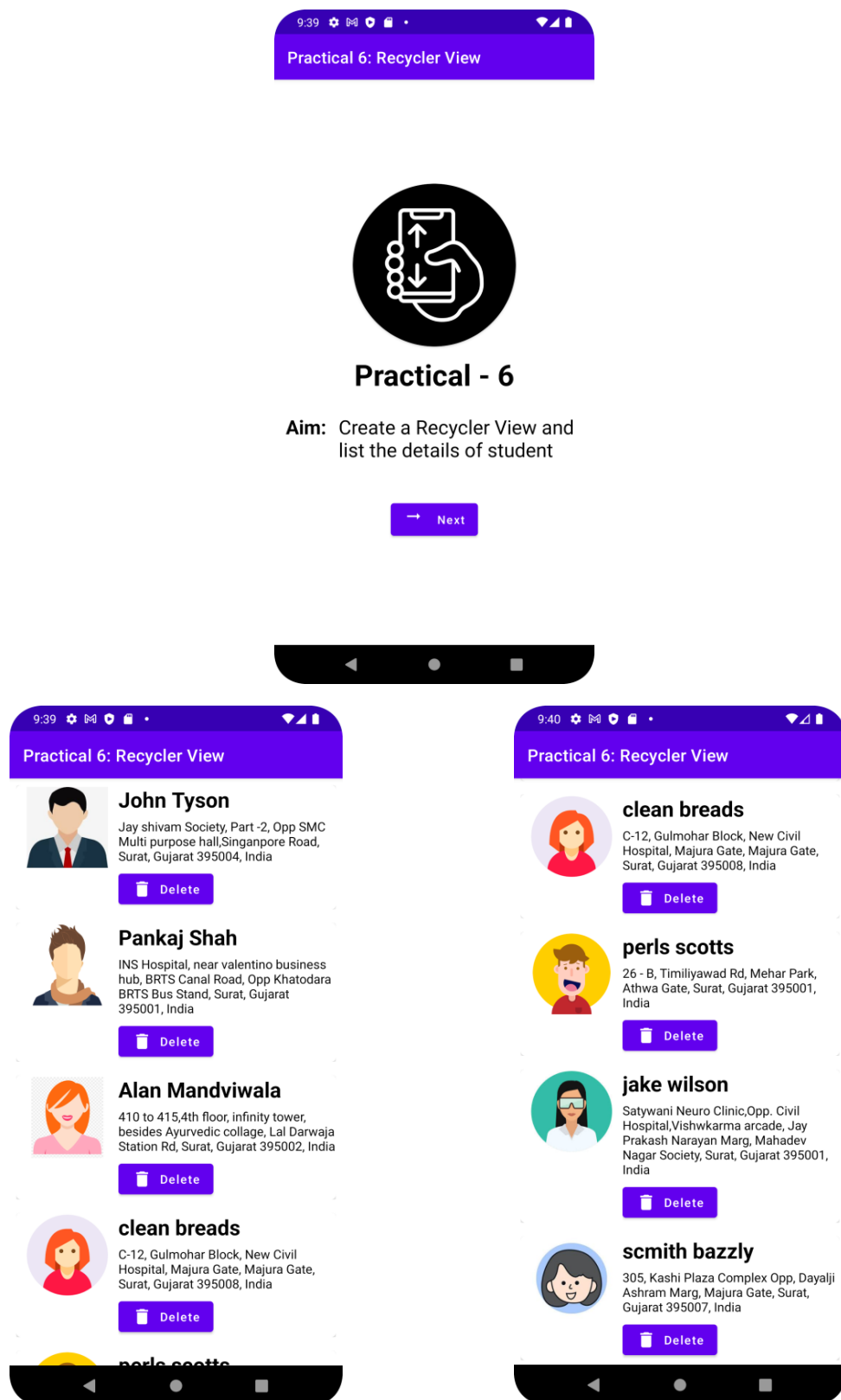
```
    }
```

```
}
```

```
}
```

# MOBILE APPLICATION DEVELOPMENT

## Output:



## Practical-7

**Aim: Theme, Custom Styles, Drawables**

**Program:**

### MainActivity.java

```
package com.example.mydesign;

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

public class MainActivity extends Activity {

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

    public void drawable_image(View view) {
        Toast.makeText(this, "Flower Image Button Clicked...", Toast.LENGTH_SHORT).show();
    }
}
```

### 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">

    <ImageView
        android:id="@+id/arrUp1"
        android:src="@drawable/arrow_upward"
        android:layout_width="34dp"
```



## MOBILE APPLICATION DEVELOPMENT

```
android:layout_height="0dp"
android:layout_marginTop="10dp"
android:layout_marginBottom="2dp"
app:layout_constraintBottom_toTopOf="@+id/theme"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent" />
```

<TextView

```
android:id="@+id/theme"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginStart="9dp"
android:layout_marginLeft="9dp"
android:layout_marginBottom="25dp"
android:text="Theme Example"
android:textColor="#E91E63"
android:textSize="16sp"
app:layout_constraintBottom_toTopOf="@+id/drawable"
app:layout_constraintStart_toStartOf="@+id/drawable"
app:layout_constraintTop_toBottomOf="@+id/arrUp1" />
```

<TextView

```
android:id="@+id/drawable"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginBottom="2dp"
android:text="Drawable Example"
android:textColor="#E91E63"
android:textSize="16sp"
app:layout_constraintBottom_toTopOf="@+id/arrDown1"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/theme" />
```

<ImageView

```
android:id="@+id/arrDown1"
android:src="@drawable/arrow_downward"
android:layout_width="34dp"
android:layout_height="0dp"
app:layout_constraintBottom_toTopOf="@+id/img_on"
app:layout_constraintEnd_toEndOf="@+id/img_on"
app:layout_constraintStart_toStartOf="@+id/img_on"
app:layout_constraintTop_toBottomOf="@+id/drawable" />
```

## MOBILE APPLICATION DEVELOPMENT

```
<ImageButton
    android:id="@+id/img_on"
    android:layout_width="317dp"
    android:layout_height="150dp"
    android:src="@drawable/flower"
    android:scaleType="fitCenter"
    android:background="@color/material_on_background_disabled"
    android:onClick="drawable_image"
    android:layout_marginBottom="14dp"
    app:layout_constraintBottom_toTopOf="@+id/button1"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/arrDown1" />
```

```
<ImageView
    android:id="@+id/arrUp2"
    android:src="@drawable/arrow_upward"
    android:layout_width="34dp"
    android:layout_height="0dp"
    android:layout_marginBottom="22dp"
    app:layout_constraintBottom_toTopOf="@+id/arrDown2"
    app:layout_constraintEnd_toEndOf="@+id/button1"
    app:layout_constraintStart_toStartOf="@+id/button1"
    app:layout_constraintTop_toBottomOf="@+id/button1" />
```

```
<TextView
    android:id="@+id/style"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="1dp"
    android:text="Style Example"
    android:textColor="#E91E63"
    android:textSize="16sp"
    app:layout_constraintEnd_toEndOf="@+id/button1"
    app:layout_constraintStart_toStartOf="@+id/button1"
    app:layout_constraintTop_toBottomOf="@+id/arrUp2" />
```

```
<ImageView
    android:id="@+id/arrDown2"
    android:src="@drawable/arrow_downward"
    android:layout_width="34dp"
    android:layout_height="0dp"
    app:layout_constraintBottom_toTopOf="@+id/button2"
```

## MOBILE APPLICATION DEVELOPMENT

```
app:layout_constraintEnd_toEndOf="@+id/style"
app:layout_constraintStart_toStartOf="@+id/style"
app:layout_constraintTop_toBottomOf="@+id/arrUp2" />
```

<Button

```
android:id="@+id/button1"
android:text="Button 1"
style="@style/button_design"
app:backgroundTint="@drawable/mygradient"
app:layout_constraintBottom_toTopOf="@+id/arrUp2"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/img_on" />
```

<Button

```
android:id="@+id/button2"
android:text="Button 2"
style="@style/button_design"
android:layout_marginBottom="105dp"
app:backgroundTint="@drawable/mygradient"
app:layout_constraintBottom_toBottomOf="parent"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/arrDown2" />
```

</androidx.constraintlayout.widget.ConstraintLayout>

### AndroidManifest.xml

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.mydesign">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportRtl="true"
        android:theme="@style/app_theme_2">
        <activity android:name=".MainActivity">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
```

## MOBILE APPLICATION DEVELOPMENT

```
        <category android:name="android.intent.category.LAUNCHER" />
    </intent-filter>
</activity>
</application>

</manifest>
```

### themes.xml

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

    <style name="app_theme_2" parent="android:Theme.Holo.Light.DarkActionBar"></style>

    <style name="button_design">
        <item name="android:textSize">20sp</item>
        <item name="android:layout_width">wrap_content</item>
        <item name="android:layout_height">wrap_content</item>
        <item name="android:background">@drawable/mygradient</item>
        <item name="android:paddingLeft">100dp</item>
        <item name="android:paddingRight">100dp</item>
        <item name="android:paddingTop">25dp</item>
        <item name="android:paddingBottom">25dp</item>
    </style>

</resources>
```

### mygradient.xml

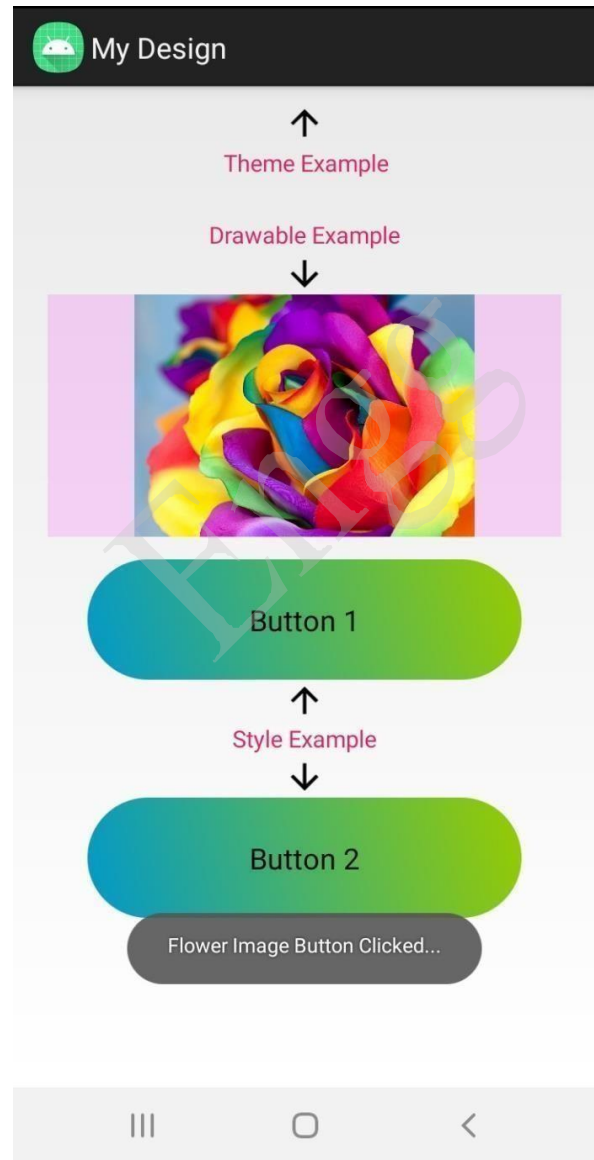
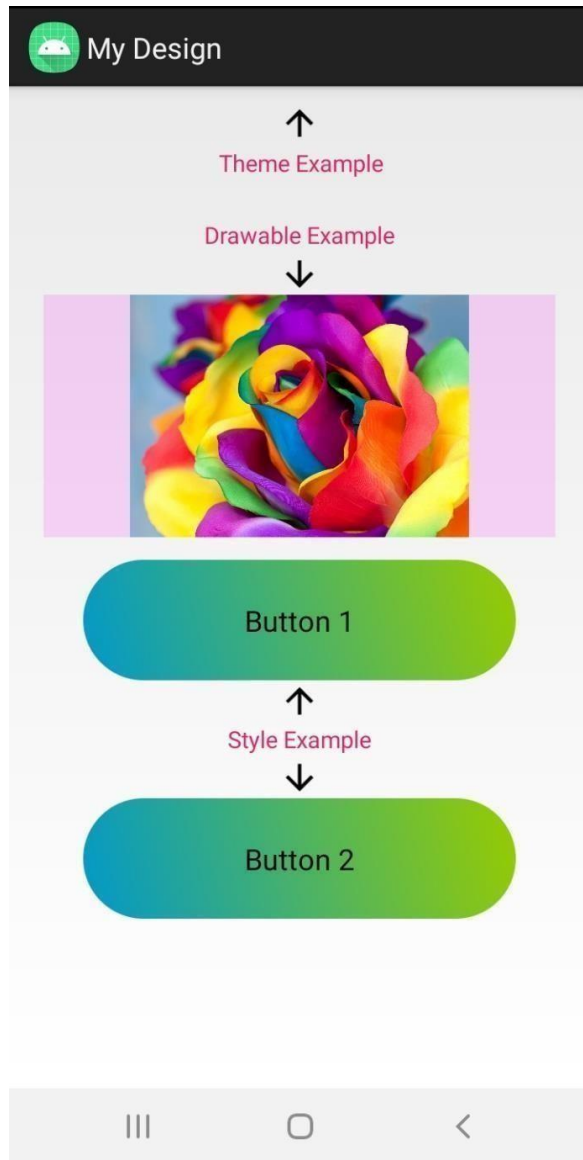
```
<?xml version="1.0" encoding="utf-8"?>
<shape xmlns:android="http://schemas.android.com/apk/res/android"
    android:shape="rectangle">

    <corners
        android:radius="40dp"></corners>

    <gradient
        android:startColor="#0099cc"
        android:endColor="#99cc00"
        android:angle="45"
        android:type="linear"></gradient>

</shape>
```

## Output:



### Practical-8

**Aim: Save user data in a database**

**Program:**

**DataModel.java**

```
package com.example.storedatabase;
```

```
public class DataModel {  
    int id;  
    String name;  
    String number;  
}
```

**MyDBHelper.java**

```
package com.example.storedatabase;  
  
import android.content.ContentValues;  
import android.content.Context;  
import android.database.Cursor;  
import android.database.sqlite.SQLiteDatabase;  
import android.database.sqlite.SQLiteOpenHelper;  
import android.util.Log;
```

```
import androidx.annotation.Nullable;
```

```
import java.util.ArrayList;
```

```
public class MyDBHelper extends SQLiteOpenHelper {  
    private static final String DATABASE_NAME="UserDB";  
    private static final int DATABASE_VERSION=1;  
    private static final String TABLE_Data="Users";  
    private static final String KEY_ID="id";  
    private static final String KEY_NAME="name";
```

## MOBILE APPLICATION DEVELOPMENT

```
private static final String KEY_Email="email";

public MyDBHelper(Context context) {
    super(context, DATABASE_NAME, null, DATABASE_VERSION);
}

@Override
public void onCreate(SQLiteDatabase db) {
    db.execSQL("CREATE TABLE "+TABLE_Data+"("+KEY_ID+" INTEGER
PRIMARY KEY AUTOINCREMENT, " + KEY_NAME +" TEXT,"+ KEY_Email +"
TEXT"+")");
}

@Override
public void onUpgrade(SQLiteDatabase db, int i, int i1) {
    db.execSQL("DROP TABLE IF EXISTS "+TABLE_Data);
    onCreate(db);
}

public void addDetails(String name,String email){
    SQLiteDatabase db=this.getWritableDatabase();
    ContentValues values=new ContentValues();
    values.put(KEY_NAME,name);
    values.put(KEY_Email,email);
    try {
        db.insert(TABLE_Data, null, values);
    }catch (Exception e){
        Log.e("inser",e.toString());
    }
}

public ArrayList<DataModel> fetchuser(){
```

## MOBILE APPLICATION DEVELOPMENT

```
        SQLiteDatabase db=this.getReadableDatabase();

        Cursor cursor=db.rawQuery("SELECT * FROM "+TABLE_Data,null);

        ArrayList<DataModel>arrdata=new ArrayList<>();

        while(cursor.moveToNext()){

            DataModel model=new DataModel();

            model.id=cursor.getInt(0);

            model.name=cursor.getString(1);

            model.number=cursor.getString(2);

            arrdata.add(model);

        }

        return arrdata;

    }

}
```

### **UserAdapter.java**

```
package com.example.storedatabase;

import android.content.Context;
import android.util.Log;
import android.view.LayoutInflater;
import android.view.View;
import android.view.ViewGroup;
import android.widget.AdapterView;
import android.widget.AdapterView.OnItemClickListener;
import android.widget.TextView;

import androidx.annotation.NonNull;
import androidx.annotation.Nullable;

import java.util.ArrayList;

public class UserAdapter extends ArrayAdapter<DataModel> {
```



## MOBILE APPLICATION DEVELOPMENT

```
private ArrayList<DataModel> list;

private Context mContext;

int mresource;

public UserAdapter(@NonNull Context context, int resource, ArrayList<DataModel> list)
{
    super(context, resource,list);

    this.list=list;

    mContext=context;

    mresource=resource;
}

@NonNull

@Override

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

    if (convertView==null){

        convertView=LayoutInflater.from(mContext).inflate(mresource,parent,false);

    }

    TextView name=convertView.findViewById(R.id.namelist);
    TextView email=convertView.findViewById(R.id.emaillist);

    name.setText(list.get(position).name);
    email.setText(list.get(position).number);
    return convertView;
}
}
```

## MOBILE APPLICATION DEVELOPMENT

### **MainActivity.java**

```
package com.example.storedatabase;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.util.Log;
import android.view.View;
import android.widget.Button;
import android.widget.EditText;

import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {

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

        MyDBHelper db=new MyDBHelper(this);
        ArrayList<DataModel> arr=db.fetchuser();
        Button btndata=findViewById(R.id.shwdata);
        EditText edname=findViewById(R.id.ename);
        EditText edemail=findViewById(R.id.eemail);
        Button btn=findViewById(R.id.btnsub);
        btn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
```

## MOBILE APPLICATION DEVELOPMENT

```
String name=edname.getText().toString();
String email=edemail.getText().toString();
if(!name.equals("")&& !email.equals("")) {
    db.addDetails(name,email);
    Intent i = new Intent(getApplicationContext(), DisplayData.class);
    startActivity(i);
}
});
btndata.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View view) {
        Intent i = new Intent(getApplicationContext(), DisplayData.class);
        startActivity(i);
    }
});

}

}
```

### **DisplayData.java**

```
package com.example.storedatabase;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.util.Log;
import android.widget.ArrayAdapter;
import android.widget.ListView;
```

## MOBILE APPLICATION DEVELOPMENT

```
import java.util.ArrayList;

public class DisplayData extends AppCompatActivity {

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

        MyDBHelper db=new MyDBHelper(this);
        ArrayList<DataModel> list=db.fetchuser();

        try {

            UserAdapter adapter = new UserAdapter(this, R.layout.list_item, list);

            ListView listView = findViewById(R.id.listview);

            listView.setAdapter(adapter);

        }catch (Exception e){
            Log.e("MyError",e.toString());
        }

    }
}
```

## MOBILE APPLICATION DEVELOPMENT

### 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"
    android:background="@color/teal_200">

    <TextView
        android:id="@+id/tname"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginStart="16dp"
        android:layout_marginTop="104dp"
        android:text="User Name"
        android:textSize="30sp"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent" />

    <EditText
        android:id="@+id/ename"
        android:layout_width="350dp"
        android:layout_height="wrap_content"
        android:backgroundTint="@color/white"
        android:layout_marginTop="160dp"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.327"
        app:layout_constraintStart_toStartOf="parent"
```

## MOBILE APPLICATION DEVELOPMENT

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

```
<TextView
```

```
    android:id="@+id/temail"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginStart="4dp"
```

```
    android:layout_marginTop="40dp"
```

```
    android:text="User Email"
```

```
    android:inputType="textEmailAddress"
```

```
    android:textSize="30sp"
```

```
    app:layout_constraintStart_toStartOf="@+id/tname"
```

```
    app:layout_constraintTop_toBottomOf="@+id/ename" />
```

```
<EditText
```

```
    android:id="@+id/email"
```

```
    android:layout_width="350dp"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginTop="284dp"
```

```
    app:layout_constraintEnd_toEndOf="parent"
```

```
    android:backgroundTint="@color/white"
```

```
    app:layout_constraintStart_toStartOf="@+id/ename"
```

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

```
<Button
```

```
    android:id="@+id/btnsub"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginTop="60dp"
```

```
    android:text="Submit"
```

## MOBILE APPLICATION DEVELOPMENT

```
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/eemail" />
```

```
<Button
```

```
    android:id="@+id/shwdata"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_marginTop="20dp"
    app:layout_constraintEnd_toEndOf="parent"
    app:layout_constraintHorizontal_bias="0.498"
    app:layout_constraintStart_toStartOf="parent"
    app:layout_constraintTop_toBottomOf="@+id/btnsub"
    android:text="Show Data"/>
```

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

### **Activity\_display\_data.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=".DisplayData"
    android:background="@color/teal_200">
    <ListView
        android:id="@+id/listview"
        android:layout_width="match_parent"
```

## MOBILE APPLICATION DEVELOPMENT

```
        android:layout_height="wrap_content"
        android:layout_marginTop="0dp"/>
</RelativeLayout>
```

### List\_item.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="match_parent"
    android:layout_height="wrap_content" >

    <TextView
        android:id="@+id/namelist"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Mustafa Dahodwala"
        android:textSize="20sp"
        android:layout_marginTop="10dp"
        android:layout_marginLeft="10dp"/>

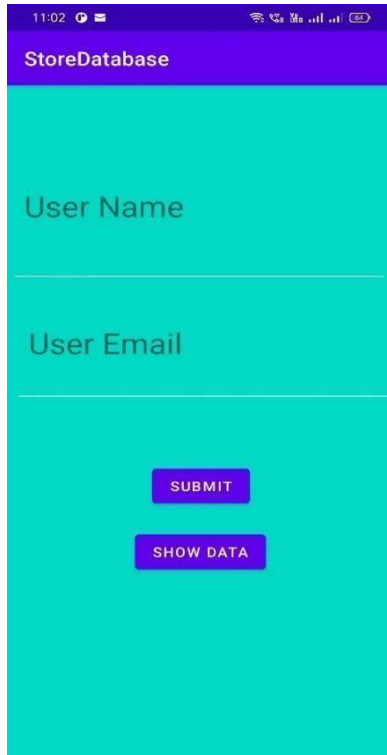
    <TextView
        android:id="@+id/emaillist"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="mustafamandviwala45@gmail.com"
        android:textSize="18sp"
        android:layout_marginLeft="15dp"/>

</LinearLayout>
```



# MOBILE APPLICATION DEVELOPMENT

## Output:



11:02

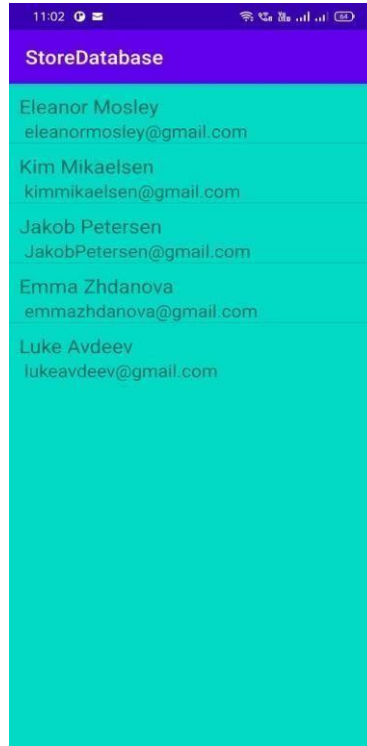
StoreDatabase

User Name

User Email

SUBMIT

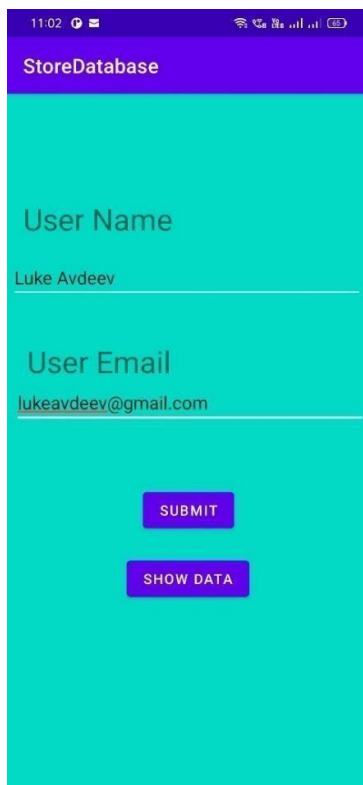
SHOW DATA



11:02

StoreDatabase

Eleanor Mosley
eleanormosley@gmail.com
Kim Mikaelson
kimmikaelson@gmail.com
Jakob Petersen
JakobPetersen@gmail.com
Emma Zhdanova
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Luke Avdeev
lukeavdeev@gmail.com



11:02

StoreDatabase

User Name

Luke Avdeev

User Email

lukeavdeev@gmail.com

SUBMIT

SHOW DATA

## Practical-9

**Aim: Use an AsyncTask to access remote database (make a use of simple PhP Web service)**

**Program:**

**activity\_main.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent" android:layout_height="match_parent">
    <ListView android:id="@+id/listView"
        android:layout_width="match_parent" android:layout_height="match_parent"
        android:layout_alignParentLeft="true" android:layout_alignParentStart="true"
        android:layout_alignParentTop="true" />
</RelativeLayout>
```

**MainActivity.java**

```
package com.example.prac9;
import androidx.appcompat.app.AppCompatActivity; import android.os.AsyncTask;
import android.os.Bundle;
import android.widget.ArrayAdapter; import android.widget.ListView; import
android.widget.Toast;
import org.json.JSONArray; import org.json.JSONException; import org.json.JSONObject;
import java.io.BufferedReader; import java.io.InputStreamReader;
import java.net.HttpURLConnection; import java.net.URL;

public class MainActivity extends AppCompatActivity { ListView listView;
    @Override
    protected void onCreate(Bundle savedInstanceState) { super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    listView = (ListView) findViewById(R.id.listView); getJSON();

    }
    private void getJSON() {
    class GetJSON extends AsyncTask<Void, Void, String> { @Override
    protected void onPreExecute() { super.onPreExecute();
    }
    @Override
    protected void onPostExecute(String s) { super.onPostExecute(s);
    Toast.makeText(getApplicationContext(), s, Toast.LENGTH_SHORT).show(); try {
    loadIntoListView(s);
```

## MOBILE APPLICATION DEVELOPMENT

```
} catch (JSONException e) { e.printStackTrace();
}
}

@Override
protected String doInBackground(Void... voids) { try {
URL url = new URL("http://192.168.1.202/home.php"); HttpURLConnection con =
(HttpURLConnection) url.openConnection(); StringBuilder sb = new StringBuilder();
BufferedReader bufferedReader = new BufferedReader(new
InputStreamReader(con.getInputStream()));
String json;
while ((json = bufferedReader.readLine()) != null) { sb.append(json + "\n");
}
return sb.toString().trim();
} catch (Exception e) { return null;
}
}
}

GetJSON getJSON = new GetJSON(); getJSON.execute();
}

private void loadIntoListView(String json) throws JSONException { JSONArray jsonArray =
new JSONArray(json);
String[] lists = new String[jsonArray.length()]; for (int i = 0; i < jsonArray.length(); i++) {
JSONObject obj = jsonArray.getJSONObject(i); lists[i] = obj.getString("name");

}
ArrayAdapter<String> arrayAdapter = new ArrayAdapter<String>(this,
android.R.layout.simple_list_item_1, lists);
listView.setAdapter(arrayAdapter);

}
}
```

### **AndroidManifest.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
package="com.example.prac9">
<uses-permission android:name="android.permission.INTERNET" />

<application android:allowBackup="true" android:icon="@mipmap/ic_launcher"
android:label="@string/app_name"
android:roundIcon="@mipmap/ic_launcher_round" android:supportRtl="true"
android:theme="@style/Theme.Prac9">
```

## MOBILE APPLICATION DEVELOPMENT

```
<activity android:name=".MainActivity">  
<intent-filter>  
<action android:name="android.intent.action.MAIN" />  
<category android:name="android.intent.category.LAUNCHER" />  
</intent-filter>  
</activity>  
</application>  
</manifest>
```

### Output:



### Practical-10

**Aim: Use Retrofit to access remote database (make a use of simple PHP Web service)**

**Source Code(MainActivity.java):**

```
package com.example.practical10;

import android.support.v7.app.AppCompatActivity;
import android.os.Bundle;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;
import java.util.List;
import retrofit2.Call;
import retrofit2.Callback;
import retrofit2.Response;
import retrofit2.Retrofit;
import retrofit2.converter.gson.GsonConverterFactory;

public class MainActivity extends AppCompatActivity {

    ListView listView;

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        listView = (ListView) findViewById(R.id.listViewHeroes);
        getHeroes();
    }

    private void getHeroes() {

        Retrofit retrofit = new Retrofit.Builder()
            .baseUrl(Api.BASE_URL)
            .addConverterFactory(GsonConverterFactory.create()) //Here we are using the
            GsonConverterFactory to directly convert json data to object
            .build();
```

## MOBILE APPLICATION DEVELOPMENT

```
Api api = retrofit.create(Api.class);
Call<List<Hero>> call = api.getHeroes();
call.enqueue(new Callback<List<Hero>>() {
    @Override
    public void onResponse(Call<List<Hero>> call, Response<List<Hero>> response) {
        List<Hero> heroList = response.body();
        String[] heroes = new String[heroList.size()];
        for (int i = 0; i < heroList.size(); i++) {
            heroes[i] = heroList.get(i).getName();
        }
        listView.setAdapter(new ArrayAdapter<String>(getApplicationContext(),
android.R.layout.simple_list_item_1, heroes));
    }
    @Override
    public void onFailure(Call<List<Hero>> call, Throwable t) {
        Toast.makeText(getApplicationContext(), t.getMessage(),
Toast.LENGTH_SHORT).show();
    }
});
}
```

### Source Code(Api.java):

```
package com.example.practical10;
import java.util.List;
import retrofit2.Call;
import retrofit2.http.GET;
public interface Api {
    String BASE_URL = "https://simplifiedcoding.net/demos/";
    @GET("marvel")
    Call<List<Hero>> getHeroes();
}
```

## MOBILE APPLICATION DEVELOPMENT

```
}
```

### Source Code(Hero.java):

```
package net.simplifiedlearning.retrofitexample;

import com.google.gson.annotations.SerializedName;

public class Hero {

    @SerializedName("name")
    private String name;
    private String realname;

    public Hero(String name, String realname){

        this.name = name;
        this.realname = realname;
    }

    public String getName() {
        return name;
    }

    public String getRealname() {
        return realname;
    }
}
```

### Source Code(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">
    <ListView
        android:id="@+id/listViewHeroes"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
</RelativeLayout>
```

## MOBILE APPLICATION DEVELOPMENT

### Source Code(AndroidManifest.xml):

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

<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.practical10">

    <!-- the internet permission -->

    <uses-permission android:name="android.permission.INTERNET" />

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/AppTheme">

        <activity android:name=".MainActivity">

            <intent-filter>

                <action android:name="android.intent.action.MAIN" />

                <category android:name="android.intent.category.LAUNCHER" />

            </intent-filter>

        </activity>

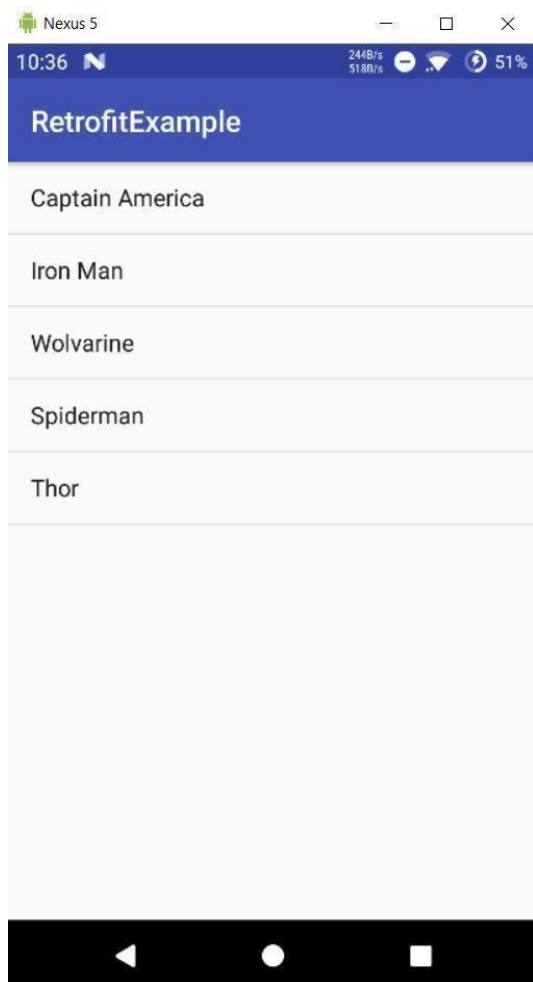
    </application>

</manifest>
```



## MOBILE APPLICATION DEVELOPMENT

### Output:



### Practical-11

**Aim: Use Firebase to perform CRUD operation**

**Program:**

**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">

    <androidx.recyclerview.widget.RecyclerView
        android:id="@+id/rv"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        tools:layout_editor_absoluteX="1dp"
        tools:layout_editor_absoluteY="1dp" />

    <com.google.android.material.floatingactionbutton.FloatingActionButton
        android:id="@+id/fBtn"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:backgroundTint="#00BCD4"
        android:clickable="true"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintEnd_toEndOf="parent"
        app:layout_constraintHorizontal_bias="0.961"
        app:layout_constraintStart_toStartOf="parent"
        app:layout_constraintTop_toTopOf="parent"
        app:layout_constraintVertical_bias="0.961"
        app:srcCompat="@drawable/ic_baseline_add_24" />
```

## MOBILE APPLICATION DEVELOPMENT

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

### **activity\_add.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:gravity="center"
```

```
>
```

```
<TextView
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="50dp"
```

```
    android:text="Add new Records"
```

```
    android:background="@color/purple_500"
```

```
    android:textSize="25dp"
```

```
    android:gravity="center"
```

```
    android:textColor="#FFFFFF"/>
```

```
<TextView
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:gravity="center"
```

```
    android:textSize="20sp"
```

```
    android:layout_marginTop="15dp"
```

```
    android:layout_marginBottom="5dp"
```

```
    android:text="Enrollment:"/>
```

## MOBILE APPLICATION DEVELOPMENT

<EditText

```
    android:layout_width="match_parent"
    android:layout_height="45dp"
    android:layout_marginLeft="10dp"
    android:layout_marginRight="10dp"
    android:background="@drawable/rounded"
    android:gravity="center"
    android:id="@+id/addTxtEnroll"/>
```

<TextView

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
    android:textSize="20sp"
    android:layout_marginTop="15dp"
    android:layout_marginBottom="5dp"
    android:text="Name:"/>
```

<EditText

```
    android:layout_width="match_parent"
    android:layout_height="45dp"
    android:layout_marginLeft="10dp"
    android:layout_marginRight="10dp"
    android:background="@drawable/rounded"
    android:gravity="center"
    android:id="@+id/addTxtName"/>
```

<TextView

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="center"
```

## MOBILE APPLICATION DEVELOPMENT

```
android:textSize="20sp"
android:layout_marginTop="15dp"
android:layout_marginBottom="5dp"
android:text="Email:"/>
```

<EditText

```
android:layout_width="match_parent"
android:layout_height="45dp"
android:layout_marginLeft="10dp"
android:layout_marginRight="10dp"
android:background="@drawable/rounded"
android:gravity="center"
android:id="@+id/addTxtEmail"/>
```

<TextView

```
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:gravity="center"
android:textSize="20sp"
android:layout_marginTop="15dp"
android:layout_marginBottom="5dp"
android:text="Photo URL:"/>
```

<EditText

```
android:layout_width="match_parent"
android:layout_height="45dp"
android:layout_marginLeft="10dp"
android:layout_marginRight="10dp"
android:background="@drawable/rounded"
android:gravity="center"
android:id="@+id/addTxtUrl"/>
```

## MOBILE APPLICATION DEVELOPMENT

<Button

```
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:text="Add"
    android:layout_marginLeft="25dp"
    android:layout_marginRight="25dp"
    android:layout_marginTop="10dp"
    android:textAllCaps="false"
    android:textSize="21dp"
    android:background="@drawable/rounded"
    android:gravity="center"
    android:id="@+id/addBtnUpdate"
```

/>

<Button

```
    android:layout_width="200dp"
    android:layout_height="wrap_content"
    android:text="Back"
    android:layout_marginLeft="25dp"
    android:layout_marginRight="25dp"
    android:layout_marginTop="10dp"
    android:textAllCaps="false"
    android:textSize="21dp"
    android:backgroundTint="#E91E63"
    android:background="@drawable/rounded"
    android:gravity="center"
    android:id="@+id/addBtnBack"
```

/>

## MOBILE APPLICATION DEVELOPMENT

</LinearLayout>

### **main\_item.xml**

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

```
<androidx.cardview.widget.CardView  
xmlns:android="http://schemas.android.com/apk/res/android"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

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

```
    app:cardCornerRadius="6dp"
```

```
    android:elevation="6dp"
```

```
    app:cardUseCompatPadding="true"
```

```
    android:id="@+id/card">
```

```
<RelativeLayout
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:padding="15dp"
```

```
    android:id="@+id/rel">
```

```
<de.hdodenhof.circleimageview.CircleImageView
```

```
    android:id="@+id/img1"
```

```
    android:layout_width="95dp"
```

```
    android:layout_height="95dp"
```

```
    android:src="@mipmap/ic_launcher_round"
```

```
    app:civ_border_color="#2196F3"
```

```
    app:civ_border_width="2dp" />
```

```
<TextView
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    android:id="@+id/enroltxt"
```

## MOBILE APPLICATION DEVELOPMENT

```
        android:text="190840131004"
        android:textSize="14sp"
        android:textStyle="bold"
        android:textColor="@color/black"
        android:layout_below="@+id/img1"
        android:layout_marginTop="30dp"
    />
<TextView
    android:layout_marginTop="5dp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/nametxt"
    android:text="Parth Bhatia"
    android:textSize="20sp"
    android:textColor="@color/black"
    android:layout_toRightOf="@+id/img1"
    android:layout_marginLeft="10dp"
    />
<TextView
    android:layout_marginTop="5dp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/emailtxt"
    android:text="bhatiaparth119@gmail.com"
    android:textSize="18sp"
    android:textColor="@color/black"
    android:layout_toRightOf="@+id/img1"
    android:layout_below="@+id/nametxt"
    android:layout_marginLeft="10dp"
    />
<LinearLayout
    android:layout_width="match_parent"
```



## MOBILE APPLICATION DEVELOPMENT

```
        android:layout_height="wrap_content"
        android:layout_below="@+id/emailtxt"
        android:layout_toRightOf="@+id/img1"
        android:padding="5dp"
        android:layout_marginTop="20dp"
        android:gravity="left">
        <Button
            android:id="@+id/updateBtn"
            android:layout_marginLeft="10dp"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:drawableTop="@drawable/ic_baseline_update_24"
            android:text="Update"
            android:textAllCaps="false"/>
        <Button
            android:id="@+id/deleteBtn"
            android:layout_marginLeft="20dp"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:drawableTop="@drawable/ic_baseline_delete_24"
            android:text="Delete"
            android:textAllCaps="false"/>
    </LinearLayout>
</RelativeLayout>
```

```
</androidx.cardview.widget.CardView>
```

### **update\_popup.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<androidx.cardview.widget.CardView
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
```

## MOBILE APPLICATION DEVELOPMENT

```
android:layout_height="wrap_content"
xmlns:app="http://schemas.android.com/apk/res-auto"
app:cardCornerRadius="6dp"
android:elevation="6dp"
app:cardUseCompatPadding="true"
android:id="@+id/card">
```

<RelativeLayout

```
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:padding="15dp"
android:id="@+id/rel">
```

<de.hdodenhof.circleimageview.CircleImageView

```
android:id="@+id/img1"
android:layout_width="95dp"
android:layout_height="95dp"
android:src="@mipmap/ic_launcher_round"
app:civ_border_color="#2196F3"
app:civ_border_width="2dp" />
```

<TextView

```
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:id="@+id/enroltxt"
android:text="190840131004"
android:textSize="14sp"
android:textStyle="bold"
android:textColor="@color/black"
android:layout_below="@+id/img1"
android:layout_marginTop="30dp"
/>
```

## MOBILE APPLICATION DEVELOPMENT

```
<TextView
    android:layout_marginTop="5dp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/nametxt"
    android:text="Parth Bhatia"
    android:textSize="20sp"
    android:textColor="@color/black"
    android:layout_toRightOf="@+id/img1"
    android:layout_marginLeft="10dp"
/>

<TextView
    android:layout_marginTop="5dp"
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:id="@+id/emailtxt"
    android:text="bhatiaparth119@gmail.com"
    android:textSize="18sp"
    android:textColor="@color/black"
    android:layout_toRightOf="@+id/img1"
    android:layout_below="@+id/nametxt"
    android:layout_marginLeft="10dp"
/>

<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_below="@+id/emailtxt"
    android:layout_toRightOf="@+id/img1"
    android:padding="5dp"
    android:layout_marginTop="20dp"
    android:gravity="left">

<Button
```

## MOBILE APPLICATION DEVELOPMENT

```
        android:id="@+id/updateBtn"
        android:layout_marginLeft="10dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:drawableTop="@drawable/ic_baseline_update_24"
        android:text="Update"
        android:textAllCaps="false"/>
    <Button
        android:id="@+id/deleteBtn"
        android:layout_marginLeft="20dp"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:drawableTop="@drawable/ic_baseline_delete_24"
        android:text="Delete"
        android:textAllCaps="false"/>
</LinearLayout>
</RelativeLayout>

</androidx.cardview.widget.CardView>
```

### **MainActivity.java**

```
package com.htrap.firebaseio11;

import androidx.appcompat.app.AppCompatActivity;
import androidx.recyclerview.widget.LinearLayoutManager;
import androidx.recyclerview.widget.RecyclerView;

import android.annotation.SuppressLint;
import android.content.Intent;
import android.os.Bundle;
import android.view.Menu;
```

## MOBILE APPLICATION DEVELOPMENT

```
import android.view.MenuItem;

import android.view.View;

import android.widget.SearchView;


import com.firebase.ui.database.FirebaseRecyclerOptions;

import com.google.android.material.floatingactionbutton.FloatingActionButton;

import com.google.firebase.database.FirebaseDatabase;


public class MainActivity extends AppCompatActivity {


    RecyclerView recyclerView;

    MainAdapter mainAdapter;


    FloatingActionButton floatingActionButton;


    @SuppressWarnings("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        recyclerView = findViewById(R.id.rv);
        recyclerView.setLayoutManager(new LinearLayoutManager(this));


        FirebaseRecyclerOptions<MainModel> options =
            new FirebaseRecyclerOptions.Builder<MainModel>()

                .setQuery(FirebaseDatabase.getInstance().getReference().child("students"),MainModel.class)

                .build();

        mainAdapter = new MainAdapter(options);
        recyclerView.setAdapter(mainAdapter);
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

```
floatingActionButton=findViewById(R.id.fBtn);

floatingActionButton.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        startActivity(new Intent(getApplicationContext(),AddActivity.class));

    }

});

}

@Override

protected void onStart() {

    super.onStart();

    mainAdapter.startListening();

}

@Override

protected void onStop() {

    super.onStop();

    mainAdapter.stopListening();

}

@Override

public boolean onCreateOptionsMenu(Menu menu) {

    getMenuInflater().inflate(R.menu.search,menu);

    MenuItem item = menu.findItem(R.id.search);

    SearchView searchView = (SearchView) item.getActionView();

    searchView.setOnQueryTextListener(new SearchView.OnQueryTextListener() {

        @Override
```

## MOBILE APPLICATION DEVELOPMENT

```
        public boolean onQueryTextSubmit(String query) {
            txtSearch(query);
            return false;
        }

        @Override
        public boolean onQueryTextChange(String query) {
            txtSearch(query);
            return false;
        }
    });

    return super.onCreateOptionsMenu(menu);

}

private void txtSearch(String str){

    FirebaseRecyclerOptions<MainModel> options =
        new FirebaseRecyclerOptions.Builder<MainModel>()

        .setQuery(FirebaseDatabase.getInstance().getReference().child("students").orderByChild("name").startAt(str).endAt(str+"~"),MainModel.class)

        .build();

    mainAdapter = new MainAdapter(options);
    mainAdapter.startListening();
    recyclerView.setAdapter(mainAdapter);
}

}
```

## MOBILE APPLICATION DEVELOPMENT

### **MainModel.java**

```
package com.htrap.firebaseio11;
```

```
public class MainModel {
```

```
    String enroll,name,email,surl;
```

```
    MainModel(){ }
```

```
    public MainModel(String enroll, String name, String email, String surl) {
```

```
        this.enroll = enroll;
```

```
        this.name = name;
```

```
        this.email = email;
```

```
        this.surl = surl;
```

```
    }
```

```
    public String getEnroll() {
```

```
        return enroll;
```

```
    }
```

```
    public void setEnroll(String enroll) {
```

```
        this.enroll = enroll;
```

```
    }
```

```
    public String getName() {
```

```
        return name;
```

```
    }
```

```
    public void setName(String name) {
```

```
        this.name = name;
```



## MOBILE APPLICATION DEVELOPMENT

```
}
```

```
public String getEmail() {  
    return email;  
}
```

```
public void setEmail(String email) {  
    this.email = email;  
}
```

```
public String getSurl() {  
    return surl;  
}
```

```
public void setSurl(String surl) {  
    this.surl = surl;  
}  
}
```

### **StudentModel.java**

```
package com.htrap.recyclerviewp6;
```

```
public class StudentModel {
```

```
    public String name, Address;  
    public int img;
```

```
    public StudentModel(int img,String name, String address) {  
        this.name = name;  
        Address = address;
```

## MOBILE APPLICATION DEVELOPMENT

```
        this.img = img;
    }
    public String getName() {
        return name;
    }
    public void setName(String name) {
        this.name = name;
    }
    public String getAddress() {
        return Address;
    }
    public void setAddress(String address) {
        Address = address;
    }
    public int getImg() {
        return img;
    }
    public void setImg(int img) {
        this.img = img;
    }
}
```

### **AddActivity.java**

```
package com.httrap.firebaseio11;

import androidx.appcompat.app.AppCompatActivity;

import android.annotation.SuppressLint;
import android.os.Bundle;
```

## MOBILE APPLICATION DEVELOPMENT

```
import android.view.View;
import android.widget.Button;
import android.widget.EditText;
import android.widget.Toast;

import com.google.firebase.database.FirebaseDatabase;

import java.util.HashMap;
import java.util.Map;

public class AddActivity extends AppCompatActivity {

    EditText enroll,name,email,surl;
    Button add,cancel;
    @SuppressWarnings("MissingInflatedId")
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_add);

        enroll = findViewById(R.id.addTxtEnroll);
        name = findViewById(R.id.addTxtName);
        email = findViewById(R.id.addTxtEmail);
        surl = findViewById(R.id.addTxtUrl);

        add = findViewById(R.id.addBtnUpdate);
        cancel = findViewById(R.id.addBtnBack);

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

## MOBILE APPLICATION DEVELOPMENT

```
        public void onClick(View v) {
            insertData();

        }
    });
    cancel.setOnClickListener(new View.OnClickListener() {
        @Override
        public void onClick(View v) {
            finish();
        }
    });
}

private void insertData(){
    Map<String,Object> map = new HashMap<>();
    map.put("enroll",enroll.getText().toString());
    map.put("name",name.getText().toString());
    map.put("email",email.getText().toString());
    map.put("surl",email.getText().toString());

    FirebaseDatabase.getInstance().getReference().child("students").push()
        .setValue(map)
        .addOnSuccessListener(succ->{
            finish();

            Toast.makeText(this, "Data Inserted Successfully!!",
Toast.LENGTH_SHORT).show();

        }).addOnFailureListener(err->{
            finish();

            Toast.makeText(this, "Error :"+err.getMessage(),
Toast.LENGTH_SHORT).show();

        });
}
```

## MOBILE APPLICATION DEVELOPMENT

```
}
```

### **MainAdapter.java**

```
package com.httrap.firebaseio11;
```

```
import android.annotation.SuppressLint;
```

```
import android.app.AlertDialog;
```

```
import android.content.DialogInterface;
```

```
import android.view.LayoutInflater;
```

```
import android.view.View;
```

```
import android.view.ViewGroup;
```

```
import android.widget.Button;
```

```
import android.widget.EditText;
```

```
import android.widget.TextView;
```

```
import android.widget.Toast;
```

```
import androidx.annotation.NonNull;
```

```
import androidx.recyclerview.widget.RecyclerView;
```

```
import com.bumptech.glide.Glide;
```

```
import com.firebase.ui.database.FirebaseRecyclerAdapter;
```

```
import com.firebase.ui.database.FirebaseRecyclerOptions;
```

```
import com.google.android.gms.tasks.OnSuccessListener;
```

```
import com.google.firebase.database.FirebaseDatabase;
```

```
import com.orhanobut.dialogplus.DialogPlus;
```

```
import com.orhanobut.dialogplus.ViewHolder;
```

```
import java.util.HashMap;
```

```
import java.util.Map;
```

## MOBILE APPLICATION DEVELOPMENT

```
import de.hdodenhof.circleimageview.CircleImageView;

public class MainAdapter extends FirebaseRecyclerAdapter<MainModel,
MainAdapter.myViewHolder> {

    /**
     * Initialize a { @link RecyclerView.Adapter} that listens to a Firebase query. See
     * { @link FirebaseRecyclerOptions} for configuration options.
     *
     * @param options
     */
    public MainAdapter(@NonNull FirebaseRecyclerOptions<MainModel> options) {
        super(options);
    }

    @Override
    protected void onBindViewHolder(@NonNull myViewHolder holder,
    @SuppressWarnings("RecyclerView") int position, @NonNull MainModel model) {
        holder.enroll.setText(model.getEnroll());
        holder.name.setText(model.getName());
        holder.email.setText(model.getEmail());

        Glide.with(holder.img.getContext())
            .load(model.surl)

            .placeholder(com.firebase.ui.database.R.drawable.common_google_signin_btn_icon_dark)
            .circleCrop()

            .error(com.firebase.ui.database.R.drawable.common_google_signin_btn_icon_dark_normal)
            .into(holder.img);
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

```
holder.btnEdit.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        final DialogPlus dialogPlus = DialogPlus.newDialog(holder.img.getContext())  
            .setContextHolder(new ViewHolder((R.layout.update_popup)))  
            .setExpanded(true, 1200)  
            .create();  
  
        View view = dialogPlus.getHolderView();  
        EditText enroll = view.findViewById(R.id.txtEnroll);  
        EditText name = view.findViewById(R.id.txtName);  
        EditText email = view.findViewById(R.id.txtEmail);  
        EditText surl = view.findViewById(R.id.txtUrl);  
  
        Button btnUpdate = view.findViewById(R.id.btnUpdate);  
  
        enroll.setText(model.getEnroll());  
        name.setText(model.getName());  
        email.setText(model.getEmail());  
        surl.setText(model.getSurl());  
  
        btnUpdate.setOnClickListener(new View.OnClickListener() {  
            @Override  
            public void onClick(View v) {  
                Map<String, Object> map = new HashMap<>();  
                map.put("enroll", enroll.getText().toString());  
                map.put("name", name.getText().toString());  
                map.put("email", email.getText().toString());  
                map.put("surl", surl.getText().toString());  
            }  
        });  
    }  
});
```

## MOBILE APPLICATION DEVELOPMENT

```
        FirebaseDatabase.getInstance().getReference().child("students")
            .child(getRef(position).getKey()).updateChildren(map)
            .addOnSuccessListener(new OnSuccessListener<Void>() {
                @Override
                public void onSuccess(Void unused) {
                    Toast.makeText(holder.name.getContext(), "Data Updated
Successfully!", Toast.LENGTH_SHORT).show();
                    dialogPlus.dismiss();
                }
            }).addOnFailureListener(err -> {
                Toast.makeText(holder.name.getContext(), "Error :" +
err.getMessage(), Toast.LENGTH_SHORT).show();
                dialogPlus.dismiss();
            });
    }
});

    dialogPlus.show();
}
});

holder.btnDelete.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        AlertDialog.Builder builder = new AlertDialog.Builder(holder.name.getContext());
        builder.setTitle("Are you sure?");
        builder.setMessage("Deleted Data Can't be undo");
        builder.setPositiveButton("Delete", new DialogInterface.OnClickListener() {
            @Override
            public void onClick(DialogInterface dialog, int which) {
```



## MOBILE APPLICATION DEVELOPMENT

```
        FirebaseDatabase.getInstance().getReference().child("students")
            .child(getRef(position).getKey()).removeValue();

        Toast.makeText(holder.name.getContext(), "Data Deleted!",
            Toast.LENGTH_SHORT).show();

    }

});

builder.setNegativeButton("Cancel", new DialogInterface.OnClickListener() {

    @Override

    public void onClick(DialogInterface dialog, int which) {

        Toast.makeText(holder.name.getContext(), "Data is Safe!",
            Toast.LENGTH_SHORT).show();

    }

});

builder.show();

}

});

}

@NonNull

@Override

public myViewHolder onCreateViewHolder(@NonNull ViewGroup parent, int viewType)
{

    View v = LayoutInflater.from(parent.getContext()).inflate(R.layout.main_item, parent,
        false);

    return new myViewHolder(v);

}

class myViewHolder extends RecyclerView.ViewHolder {

    CircleImageView img;

    TextView enroll, name, email;
```

## MOBILE APPLICATION DEVELOPMENT

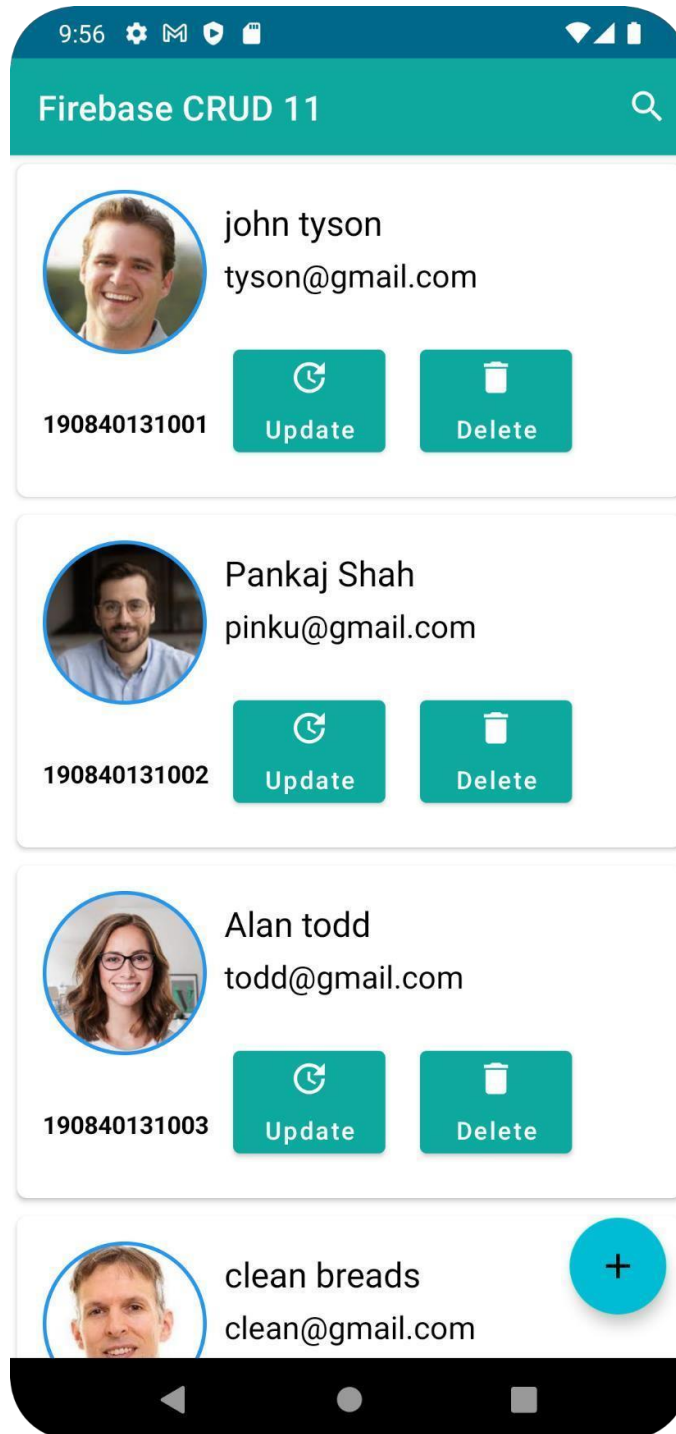
Button btnEdit, btnDelete;

```
public myViewHolder(@NonNull View itemView) {  
    super(itemView);  
    img = (CircleImageView) itemView.findViewById(R.id.img1);  
    enroll = (TextView) itemView.findViewById(R.id.enroltxt);  
    name = (TextView) itemView.findViewById(R.id.nametxt);  
    email = (TextView) itemView.findViewById(R.id.emailtxt);  
  
    btnDelete = (Button) itemView.findViewById(R.id.deleteBtn);  
    btnEdit = (Button) itemView.findViewById(R.id.updateBtn);  
  
}  
}  
}
```

## MOBILE APPLICATION DEVELOPMENT

### Output:

### MainActivity(READ):



**(INSERT):**

The screenshot displays the 'Firebase CRUD 11' application interface. At the top, a teal header bar contains the title and a search icon. Below the header, a list of users is shown, each with a circular profile picture, a unique ID, a name, an email address, and two action buttons: 'Update' and 'Delete'. The users listed are:

- User 1:** ID 190840131004, Name perls scotts, Email scotts@gmail.com.
- User 2:** ID 190840131005, Name Jake Wilson, Email dake@gmail.com.
- User 3:** ID 190840131006, Name Ken Adams, Email ken@gmail.com.

At the bottom right, there is a teal circular button with a white plus sign, indicating an option to add a new user. The bottom of the screen shows the standard Android navigation bar.

## MOBILE APPLICATION DEVELOPMENT

(UPDATE):

10:03

Firestore CRD 11

190840131004 Update Delete

perls scotts  
scotts@gmail.com

190840131005 Update Delete

Update Details

Enrollment:  
190840131007

Name:  
Regina Phelange

Email:  
ken@gmail.com

Photo URL:  
data:image/jpeg;base64,/9j/4AAQSkZJRgABAQAAQABAAQ/

Update

10:04

Firestore CRD 11

190840131004 Update Delete

perls scotts  
scotts@gmail.com

190840131005 Update Delete

Jake Wilson  
dake@gmail.com

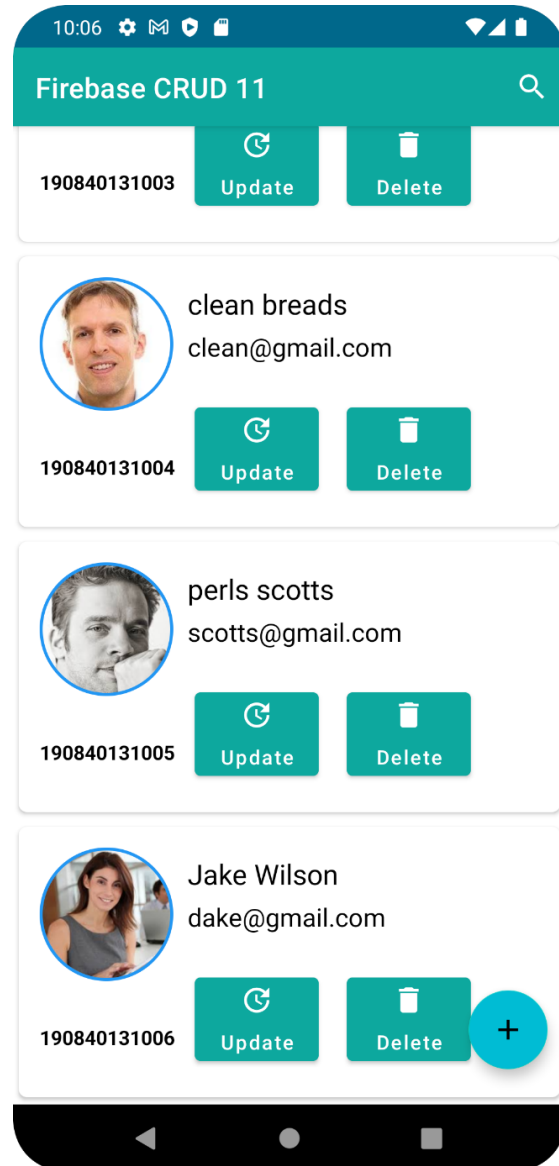
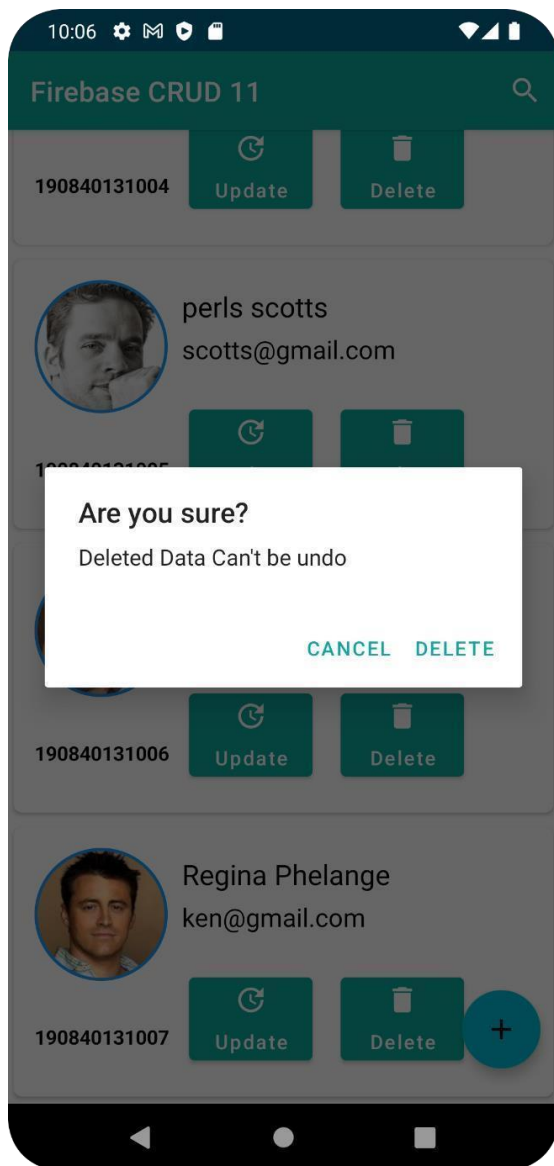
190840131006 Update Delete

Regina Phelange  
ken@gmail.com

190840131007 Update Delete +

## MOBILE APPLICATION DEVELOPMENT

**(DELETE):**



## Practical-12

### Aim: BroadcastReceiver

### Program:

### Broadcast Sender app:

### 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">

    <Button
        android:id="@+id/button"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Send Broadcast Message"
        android:onClick="onBroadcastSendBtnClicked"
        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

```
package com.example.broadcastsenderapp;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
```

## MOBILE APPLICATION DEVELOPMENT

```
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 onBroadcastSendBtnClicked(View v) {

        Intent intent = new Intent();
        intent.setAction("com.mad_practical.myBroadcastMessage");
        intent.setFlags(Intent.FLAG_INCLUDE_STOPPED_PACKAGES);
        sendBroadcast(intent);
    }
}
```

### **AndroidManifest.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.broadcastsenderapp">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
```



## MOBILE APPLICATION DEVELOPMENT

```
    android:supportsRtl="true"
    android:theme="@style/Theme.BroadcastSenderApp">
    <activity
        android:name=".MainActivity"
        android:exported="true">
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />

            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>
</application>
</manifest>
```

### **Broadcast receiver app:**

#### **AndroidManifest.xml**

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="com.example.broadcastreceiverapp">

    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="@string/app_name"
        android:roundIcon="@mipmap/ic_launcher_round"
        android:supportsRtl="true"
        android:theme="@style/Theme.BroadcastReceiverApp">
        <receiver
            android:name=".MyBroadcastReceiver"
            android:enabled="true"
```

## MOBILE APPLICATION DEVELOPMENT

```
        android:exported="true">
        <intent-filter>
            <action android:name="com.mad_practical.myBroadcastMessage">

            </action>
        </intent-filter>
    </receiver>

    <activity
        android:name=".MainActivity"
        android:exported="true">
        <intent-filter>
            <action android:name="android.intent.action.MAIN" />

            <category android:name="android.intent.category.LAUNCHER" />
        </intent-filter>
    </activity>
</application>

</manifest>
```

### **MainActivity.java**

```
package com.example.broadcastreceiverapp;

import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.content.IntentFilter;
import android.os.Bundle;
import android.view.View;

public class MainActivity extends AppCompatActivity {
```

## MOBILE APPLICATION DEVELOPMENT

```
@Override
protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    setContentView(R.layout.activity_main);
    IntentFilter intentFilter =new IntentFilter("com.mad_practical.myBroadcastMessage");
    MyBroadcastReceiver objReceiver =new MyBroadcastReceiver();
    registerReceiver(objReceiver, intentFilter);
}
}
```

### **MyBroadcastReceiver.java**

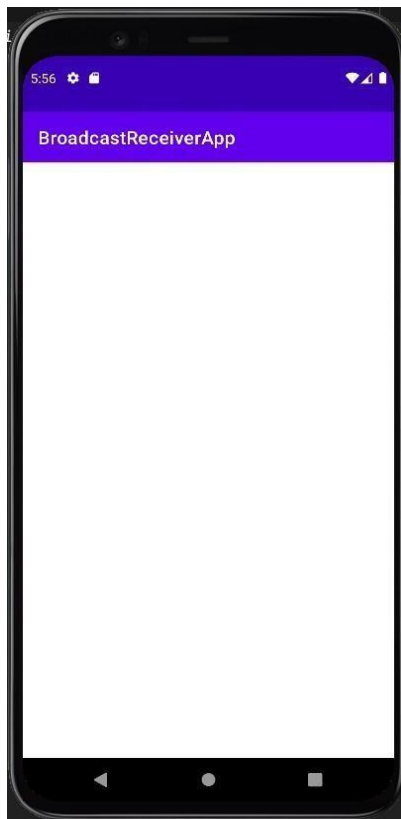
```
package com.example.broadcastreceiverapp;
import android.content.BroadcastReceiver;
import android.content.Context;
import android.content.Intent;
import android.util.Log;
import android.widget.Toast;

public class MyBroadcastReceiver extends BroadcastReceiver {

    @Override
    public void onReceive(Context context, Intent intent) {
        // TODO: This method is called when the BroadcastReceiver is receiving
        // an Intent broadcast.
        Log.i("BroadcastReceiver", "Broadcast message is received");
        Toast.makeText(context, "broadcast message is
received", Toast.LENGTH_LONG).show();
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

### Output:



## Practical-13

**Aim: Implement Notifications.**

**Program:**

**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>
```

## MOBILE APPLICATION DEVELOPMENT

### **MainActivity.java**

```
package com.example.notification;

import androidx.appcompat.app.AppCompatActivity;
import androidx.core.content.res.ResourcesCompat;
import android.app.Notification;
import android.app.NotificationChannel;
import android.app.NotificationManager;
import android.graphics.Bitmap;
import android.graphics.drawable.BitmapDrawable;
import android.graphics.drawable.Drawable;
import android.os.Build;
import android.os.Bundle;

public class MainActivity extends AppCompatActivity {

    private static final String CHANNEL_ID="meassge channel";
    private static final int NOTIFICATION_ID=100;

    @Override

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

        Drawable drawable= ResourcesCompat.getDrawable(getResources(),R.drawable.icon,null);

        BitmapDrawable bitmapDrawable=(BitmapDrawable) drawable;
        Bitmap largeIcon=bitmapDrawable.getBitmap();
```

## MOBILE APPLICATION DEVELOPMENT

```
NotificationManager nm=(NotificationManager)
getSystemService(NOTIFICATION_SERVICE);

Notification notification;

if(Build.VERSION.SDK_INT>=Build.VERSION_CODES.O) {

notification = new Notification.Builder(this)

.setLargeIcon(largeIcon)

.setSmallIcon(R.drawable.icon)

.setContentText("New Meassge")

.setSubText("New Meassge from Batch-191")

.setChannelId(CHANNEL_ID)

.build();

nm.createNotificationChannel(new NotificationChannel(CHANNEL_ID, "new
channle",NotificationManager.IMPORTANCE_HIGH));

}

else{

notification = new Notification.Builder(this)

.setLargeIcon(largeIcon)

.setSmallIcon(R.drawable.icon)

.setContentText("New Meassge")

.setSubText("New Meassge from Batch-191")

.build();

}

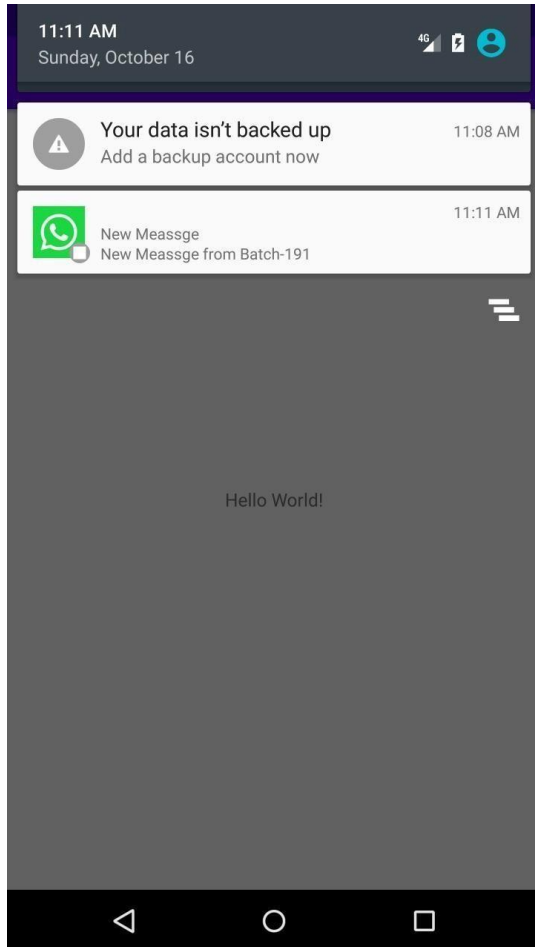
nm.notify(NOTIFICATION_ID,notification);

}

}
```

# MOBILE APPLICATION DEVELOPMENT

## Output:





## Practical-14

**Aim: Get and save User Preferences**

**Program:**

**MainActivity.java:**

```
package com.example.p14;

import android.app.Activity;
import android.content.Context;
import android.content.SharedPreferences;
import android.os.Bundle;
import android.view.Menu;
import android.view.View;
import android.widget.TextView;
import android.widget.Toast;

public class MainActivity extends Activity
{
    SharedPreferences sharedPreferences;
    TextView name;
    TextView email;
    public static final String mypreference = "mypref";
    public static final String Name = "nameKey";
    public static final String Email = "emailKey";

    @Override
    protected void onCreate(Bundle savedInstanceState)
    {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        name = (TextView) findViewById(R.id.etName);
        email = (TextView) findViewById(R.id.etEmail);
        sharedPreferences = getSharedPreferences(mypreference,
            Context.MODE_PRIVATE);
        if (sharedPreferences.contains(Name))
        {
            name.setText(sharedPreferences.getString(Name,
                ""));
        }
        if (sharedPreferences.contains(Email))
        {
            email.setText(sharedPreferences.getString(Email, ""));
        }
    }

    public void Save(View view) {
        String n = name.getText().toString();
        String e = email.getText().toString();
        SharedPreferences.Editor editor = sharedPreferences.edit();
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

```
        editor.putString(Name, n);
        editor.putString(Email, e);
        editor.commit();
        Toast.makeText(MainActivity.this, "Saved", Toast.LENGTH_SHORT).show();
    }

    public void clear(View view) {
        name = (TextView) findViewById(R.id.etName);
        email = (TextView) findViewById(R.id.etEmail);
        name.setText("");
        email.setText("");
        Toast.makeText(MainActivity.this, "Cleared", Toast.LENGTH_SHORT).show();
    }
}
```

### 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">

    <RelativeLayout
        xmlns:android="http://schemas.android.com/apk/res/android"
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:paddingBottom="100dp"
        android:paddingLeft="100dp"
        android:paddingRight="100dp"
        android:paddingTop="100dp" >

        <Button
            android:id="@+id/btnSave"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_centerVertical="true"
            android:layout_alignParentLeft="true"
            android:layout_alignParentStart="true"
            android:onClick="Save"
            android:text="Save" />

        <Button
            android:id="@+id/btnRetr"
            android:layout_width="wrap_content"
```

## MOBILE APPLICATION DEVELOPMENT

```
android:layout_height="wrap_content"
android:layout_alignTop="@+id/btnSave"
android:layout_centerVertical="true"
android:layout_marginTop="110dp"
android:onClick="Get"
android:text="Retrieve" />
```

<Button

```
android:id="@+id/btnClear"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_alignRight="@+id/etEmail"
android:layout_alignParentEnd="false"
android:layout_alignParentRight="false"
android:layout_centerVertical="true"
android:layout_marginEnd="2dp"
android:layout_marginRight="-67dp"
android:onClick="clear"
android:text="Clear" />
```

<EditText

```
android:id="@+id/etEmail"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:hint="Email"
android:inputType="textEmailAddress"
android:layout_below="@+id/etName"
android:layout_marginTop="20dp"
android:layout_alignParentRight="true"
android:layout_alignParentEnd="true" />
```

<EditText

```
android:id="@+id/etName"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:ems="10"
android:hint="Name"
android:inputType="text"
android:layout_alignParentTop="true"
android:layout_alignLeft="@+id/etEmail"
android:layout_alignStart="@+id/etEmail" />
```

</RelativeLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

# MOBILE APPLICATION DEVELOPMENT

## Output:



Name

Email

SAVE

CLEAR

RETRIEVE



Name

Email

SAVE

CLEAR

RETRIEVE

Cleared



John

john@gmail.com

SAVE

CLEAR

RETRIEVE

Saved



John

john@gmail.com

SAVE

CLEAR

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## Practical-15

**Aim: Make a use of Light and Accelerometer Sensor.**

**Program:**

**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:layout_gravity="center"
    android:gravity="center"
    tools:context=".MainActivity"
    android:orientation="vertical"
    android:padding="15dp"
    android:background="@color/white">

    <androidx.cardview.widget.CardView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:cardCornerRadius="100dp"
        app:cardBackgroundColor="@color/black">
        <ImageView
            android:padding="30dp"
            android:layout_width="200dp"
            android:layout_height="200dp"
            android:src="@drawable/microchip"
        />
    </androidx.cardview.widget.CardView>

    <TextView
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Practical - 15"
        android:textAlignment="center"
        android:textSize="36sp"
        android:textStyle="bold"
```

## MOBILE APPLICATION DEVELOPMENT

```
        android:textColor="@color/black"
        android:layout_marginTop="10dp"
    />
```

```
<LinearLayout
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:layout_margin="14dp"
    android:orientation="horizontal"
    >
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Aim:"
        android:textSize="24sp"
        android:textStyle="bold"
        android:textColor="@color/black"
        android:layout_marginTop="10dp"
    />
```

```
<TextView
    android:layout_marginLeft="15dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/use_of_light_accelerometer_sensor"
    android:textSize="24sp"
    android:textColor="@color/black"
    android:layout_marginTop="10dp"
/>
```

```
</LinearLayout>
```

```
<Button
    android:id="@+id/nextBtn"
    android:layout_marginTop="30dp"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Next"
    android:textAllCaps="false"
    android:drawableLeft="@drawable/ic_baseline_arrow_right_alt_24"
```

## MOBILE APPLICATION DEVELOPMENT

```
        android:textColor="@color/white"
        android:theme="@style/Animation.Design.BottomSheetDialog"
    />
```

```
</LinearLayout>
```

### **Activity\_light.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"
    tools:context=".light"
    android:gravity="center"
    >

    <TextView
        android:id="@+id/TVlight"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="@string/light_sensor_values"
        android:textColor="@color/black"
        android:textSize="20dp"
        android:textStyle="bold"/>
```

```
</LinearLayout>
```

### **Activity\_home.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:gravity="center"
    tools:context=".home">

    <Button
```

## MOBILE APPLICATION DEVELOPMENT

```
android:id="@+id/lightBtn"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:text="@string/light"
android:textAllCaps="false"/>
```

```
<Button
    android:id="@+id/gyroBtn"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/gyro"
    android:textAllCaps="false"
    android:layout_marginLeft="20dp"/>
```

```
</LinearLayout>
```

### Activity\_gyro.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"
    tools:context=".gyro"
    android:gravity="center"
    android:orientation="vertical"
    android:layout_marginLeft="100dp">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
        >

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="X:"
            android:textColor="@color/black"
            android:textSize="20sp"
```



## MOBILE APPLICATION DEVELOPMENT

```
        android:layout_marginTop="10dp"/>

        <TextView
            android:id="@+id/gyroX"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textColor="@color/black"
            android:textSize="20sp"
            android:layout_marginTop="10dp"/>

    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
    >

        <TextView
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:text="Y:"
            android:textColor="@color/black"
            android:textSize="20sp"
            android:layout_marginTop="10dp"/>

        <TextView
            android:id="@+id/gyroY"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:textColor="@color/black"
            android:textSize="20sp"
            android:layout_marginTop="10dp"/>

    </LinearLayout>
    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:layout_marginTop="10dp"
    >
```

## MOBILE APPLICATION DEVELOPMENT

```
<TextView
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Z:"
    android:textColor="@color/black"
    android:textSize="20sp"
    android:layout_marginTop="10dp"/>
```

```
<TextView
    android:id="@+id/gyroZ"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:textColor="@color/black"
    android:textSize="20sp"
    android:layout_marginTop="10dp"/>
```

```
</LinearLayout>
</LinearLayout>
```

### **MainActivity.java**

```
package com.htrap.practical_15sensors;

import androidx.appcompat.app.AppCompatActivity;

import android.content.Intent;
import android.os.Bundle;
import android.os.Handler;
import android.view.View;
import android.widget.Button;

public class MainActivity extends AppCompatActivity {

    Button next_btn;
    int flag=0;

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

## MOBILE APPLICATION DEVELOPMENT

```
next_btn = findViewById(R.id.nextBtn);
Intent intent = new Intent(MainActivity.this,home.class);

new Handler().postDelayed(new Runnable() {
    @Override
    public void run() {
        if(flag==0) {
            startActivity(intent);
            finish();
        }
    }
},2000);
next_btn.setOnClickListener(new View.OnClickListener() {

    @Override
    public void onClick(View v) {
        flag=1;
        startActivity(intent);
        finish();
    }
});

}
}
```

### **light.java**

```
package com.htrap.practical_15sensors;

import androidx.appcompat.app.AppCompatActivity;

import android.hardware.Sensor;
import android.hardware.SensorEvent;
import android.hardware.SensorEventListener;
import android.hardware.SensorManager;
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;

public class light extends AppCompatActivity implements SensorEventListener {
```

## MOBILE APPLICATION DEVELOPMENT

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

    SensorManager sensorManager = (SensorManager)
    getSystemService(SENSOR_SERVICE);

    if(sensorManager!=null){
        Sensor lightSensor = sensorManager.getDefaultSensor(Sensor.TYPE_LIGHT);
        if(lightSensor!=null){
            sensorManager.registerListener(light.this,
lightSensor,SensorManager.SENSOR_DELAY_NORMAL);
        }

    }else{
        Toast.makeText(this, "Sensor not Detected", Toast.LENGTH_SHORT).show();
    }

}

@Override
public void onSensorChanged(SensorEvent event) {
    if(event.sensor.getType() == Sensor.TYPE_LIGHT){
        ((TextView) findViewById(R.id.TVlight)).setText("Values :"+event.values[0]);
    }
}

@Override
public void onAccuracyChanged(Sensor sensor, int accuracy) {

}
}
```

### **home.java**

```
package com.htrap.practical_15sensors;
import androidx.appcompat.app.AppCompatActivity;
import android.content.Intent;
import android.os.Bundle;
```

## MOBILE APPLICATION DEVELOPMENT

```
import android.view.View;
import android.widget.Button;

public class home extends AppCompatActivity {

    Button lightBtn,gyroBtn;

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

        lightBtn = findViewById(R.id.lightBtn);
        gyroBtn = findViewById(R.id.gyroBtn);

        Intent lightIntent = new Intent(home.this,light.class);
        Intent gyroIntent = new Intent(home.this, gyro.class);

        lightBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                startActivity(lightIntent);
            }
        });

        gyroBtn.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View v) {
                startActivity(gyroIntent);
            }
        });
    }
}
```

### **gyro.java**

```
package com.htrap.practical_15sensors;
import androidx.appcompat.app.AppCompatActivity;
import android.hardware.Sensor;
import android.hardware.SensorEvent;
```

## MOBILE APPLICATION DEVELOPMENT

```
import android.hardware.SensorEventListener;
import android.hardware.SensorManager;
import android.os.Bundle;
import android.widget.TextView;
import android.widget.Toast;

public class gyro extends AppCompatActivity implements SensorEventListener {

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

        SensorManager sensorManager = (SensorManager)
        getSystemService(SENSOR_SERVICE);

        if(sensorManager != null){

            Sensor accleroSensor =
            sensorManager.getDefaultSensor(Sensor.TYPE_ACCELEROMETER);

            if(accleroSensor!= null){

                sensorManager.registerListener(this,accleroSensor,SensorManager.SENSOR_DELAY_NORMAL
                );
            }

            }else{
                Toast.makeText(this, "Gyro Sensor Not Found", Toast.LENGTH_SHORT).show();
            }
        }

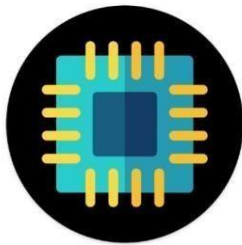
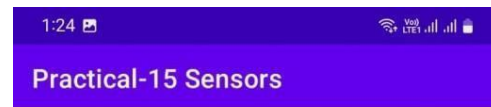
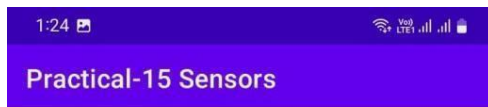
        @Override
        public void onSensorChanged(SensorEvent event) {

            if(event.sensor.getType() == Sensor.TYPE_ACCELEROMETER){
                ((TextView)findViewById(R.id.gyroX)).setText(String.format(" %s", event.values[0]));
                ((TextView)findViewById(R.id.gyroY)).setText(String.format(" %s", event.values[1]));
                ((TextView)findViewById(R.id.gyroZ)).setText(String.format(" %s", event.values[2]));
            }
        }
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

```
}  
  
@Override  
public void onAccuracyChanged(Sensor sensor, int accuracy) {  
  
}  
}
```

### Output:



### Practical - 15

**Aim:** Use of Light & Accelerometer Sensor

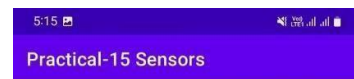
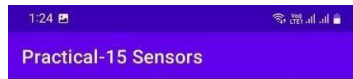
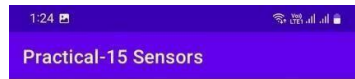
→ Next

Light

Gyro



# MOBILE APPLICATION DEVELOPMENT



X: -0.533907

Y: 2.7868507

Z: 9.004593

Values :23.0

Values :21801.0





## Practical - 16

**Aim: Using location service get the current location and display in TextView.**

**Program:**

**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:background="#4caf50"
    android:gravity="center"
    android:orientation="vertical">
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:fontFamily="sans-serif-black"
        android:text="Latitude:"
        android:textSize="24sp" />
    <TextView
        android:id="@+id/latTextView"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:hint="Latitude "
        android:textColor="#f5f5f5"
        android:textSize="16sp" />
    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:fontFamily="sans-serif-black"
        android:text="Longitude:"
        android:textSize="24sp" />
```

## MOBILE APPLICATION DEVELOPMENT

```
<TextView
    android:id="@+id/lonTextView"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:hint="Longitude"
    android:textColor="#f5f5f5"
    android:textSize="16sp" />
</LinearLayout>
```

### **MainActivity.java:**

```
package com.example.practical16;

import android.Manifest;
import android.annotation.SuppressLint;
import android.content.Context;
import android.content.Intent;
import android.content.pm.PackageManager;
import android.location.Location;
import android.location.LocationManager;
import android.os.Bundle;
import android.os.Looper;
import android.provider.Settings;
import android.widget.TextView;
import android.widget.Toast;

import androidx.annotation.NonNull;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.app.ActivityCompat;

import com.google.android.gms.location.FusedLocationProviderClient;
import com.google.android.gms.location.LocationCallback;
import com.google.android.gms.location.LocationRequest;
```

## MOBILE APPLICATION DEVELOPMENT

```
import com.google.android.gms.location.LocationResult;
import com.google.android.gms.location.LocationServices;
import com.google.android.gms.tasks.OnCompleteListener;
import com.google.android.gms.tasks.Task;

public class MainActivity extends AppCompatActivity {
    FusedLocationProviderClient mFusedLocationClient;
    TextView latitudeTextView, longitTextView;
    int PERMISSION_ID = 44;

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

        latitudeTextView = findViewById(R.id.latTextView);
        longitTextView = findViewById(R.id.lonTextView);

        mFusedLocationClient = LocationServices.getFusedLocationProviderClient(this);
        getLastLocation();
    }

    @SuppressWarnings("MissingPermission")
    private void getLastLocation() {
        if (checkPermissions()) {
            if (isLocationEnabled()) {
                mFusedLocationClient.getLastLocation().addOnCompleteListener(new
OnCompleteListener<Location>() {
                    @Override
                    public void onComplete(@NonNull Task<Location> task) {
                        Location location = task.getResult();
                        if (location == null) {
                            requestNewLocationData();
                        }
                    }
                });
            }
        }
    }
}
```

## MOBILE APPLICATION DEVELOPMENT

```
        } else {
            latitudeTextView.setText(location.getLatitude() + "");
            longitTextView.setText(location.getLongitude() + "");
        }
    }

});

} else {
    Toast.makeText(this, "Please turn on" + " your location...",
        Toast.LENGTH_LONG).show();

    Intent intent = new Intent(Settings.ACTION_LOCATION_SOURCE_SETTINGS);
    startActivity(intent);
}

} else {
    requestPermissions();
}

}

@SuppressLint("MissingPermission")
private void requestNewLocationData() {
    LocationRequest mLocationRequest = new LocationRequest();
    mLocationRequest.setPriority(LocationRequest.PRIORITY_HIGH_ACCURACY);
    mLocationRequest.setInterval(5);
    mLocationRequest.setFastestInterval(0);
    mLocationRequest.setNumUpdates(1);

    mFusedLocationClient = LocationServices.getFusedLocationProviderClient(this);
    mFusedLocationClient.requestLocationUpdates(mLocationRequest,
        mLocationCallback, Looper.myLooper());
}

private LocationCallback mLocationCallback = new LocationCallback() {
    @Override
    public void onLocationResult(LocationResult locationResult) {
```

## MOBILE APPLICATION DEVELOPMENT

```
        Location mLastLocation = locationResult.getLastLocation();
        latitudeTextView.setText("Latitude: " + mLastLocation.getLatitude() + "");
        longitTextView.setText("Longitude: " + mLastLocation.getLongitude() + "");
    }
};

private boolean checkPermissions() {
    return ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_COARSE_LOCATION) ==
PackageManager.PERMISSION_GRANTED && ActivityCompat.checkSelfPermission(this,
Manifest.permission.ACCESS_FINE_LOCATION) ==
PackageManager.PERMISSION_GRANTED;

private void requestPermissions() {
    ActivityCompat.requestPermissions(this, new String[]{
        Manifest.permission.ACCESS_COARSE_LOCATION,
        Manifest.permission.ACCESS_FINE_LOCATION}, PERMISSION_ID);
}

private boolean isLocationEnabled() {
    LocationManager locationManager = (LocationManager)
getSystemService(Context.LOCATION_SERVICE);
    return locationManager.isProviderEnabled(LocationManager.GPS_PROVIDER) ||
locationManager.isProviderEnabled(LocationManager.NETWORK_PROVIDER);
}

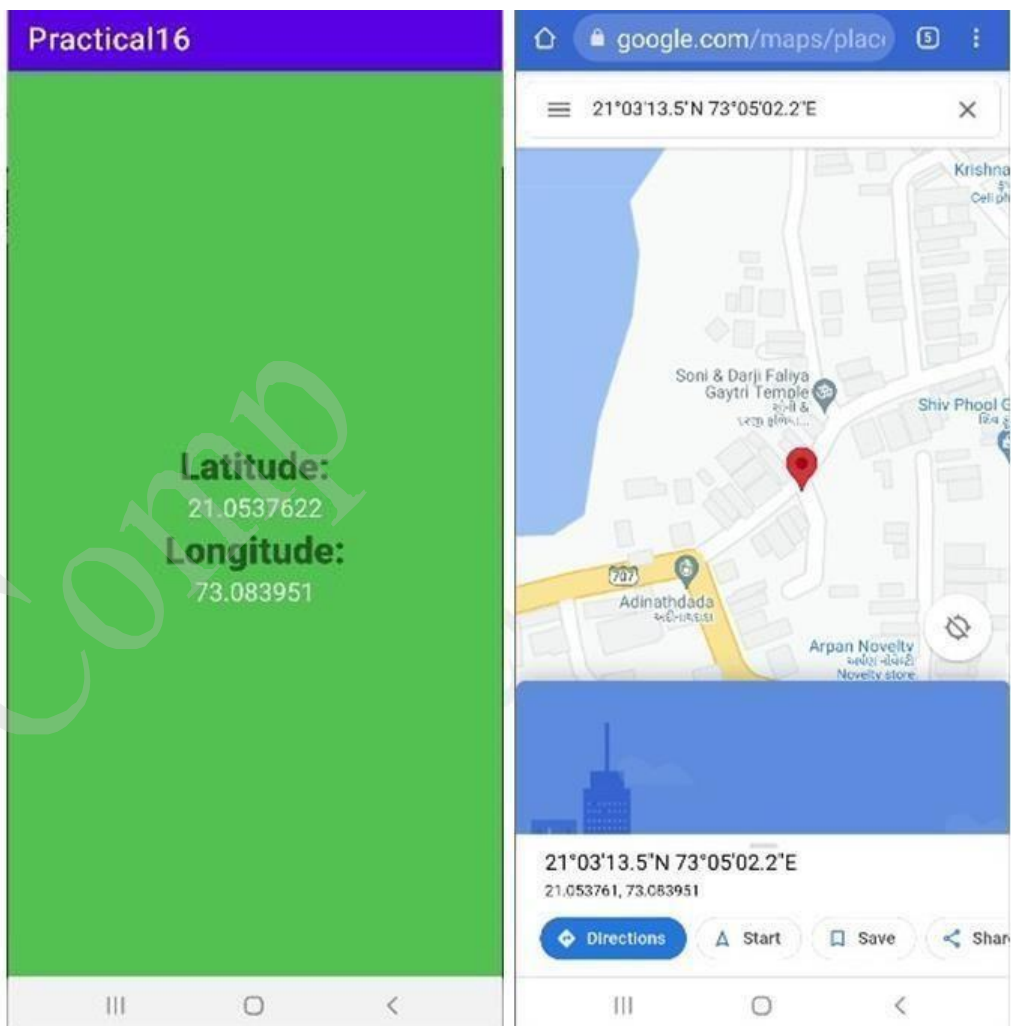
@Override
public void
onRequestPermissionsResult(int requestCode, @NonNull String[] permissions, @NonNull
int[] grantResults) {
    super.onRequestPermissionsResult(requestCode, permissions, grantResults);

    if (requestCode == PERMISSION_ID) {
        if (grantResults.length > 0 && grantResults[0] ==
PackageManager.PERMISSION_GRANTED) {
```

## MOBILE APPLICATION DEVELOPMENT

```
        getLastLocation();  
    }  
}  
}  
@Override  
public void onResume() {  
    super.onResume();  
    if (checkPermissions()) {  
        getLastLocation();  
    }  
}
```

### Output:



### Practical-17

**Aim: Display use of animations**

**Source Code(MainActivity.java):**

```
package com.example.practical17;

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.Button;
import android.widget.ImageView;

public class MainActivity extends AppCompatActivity {

    ImageView imgview;
    Button izoom, ozoom, ifade, ofade, rotate, arotate, blink, uslide, dslide, move, bounce, stop;

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

        imgview=findViewById(R.id.imgview);

        izoom=findViewById(R.id.BTNizoom);
        rotate=findViewById(R.id.BTNrotate);
        ifade=findViewById(R.id.BTNifade);
```

## MOBILE APPLICATION DEVELOPMENT

```
ozoom=findViewById(R.id.BTNozoom);
```

```
arotate=findViewById(R.id.BTNarotate);
```

```
ofade=findViewById(R.id.BTNofade);
```

```
move=findViewById(R.id.BTNmove);
```

```
blink=findViewById(R.id.BTNblink);
```

```
bounce=findViewById(R.id.BTNbounce);
```

```
uslide=findViewById(R.id.BTNuslide);
```

```
dslide=findViewById(R.id.BTNdslide);
```

```
stop=findViewById(R.id.BTNstop);
```

```
izoom.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```

```
        Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),  
R.anim.zoom_in_animation);
```

```
        imgview.startAnimation(anim);
```

```
    }
```

```
});
```

```
rotate.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```

```
        Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),  
R.anim.rotato_animation);
```

```
        imgview.startAnimation(anim);
```

```
    }
```

```
});
```

```
ifade.setOnClickListener(new View.OnClickListener() {
```

```
    @Override
```

```
    public void onClick(View v) {
```



## MOBILE APPLICATION DEVELOPMENT

```
        Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.fade_in_animation);

        imgview.startAnimation(anim);
    }
});
```

```
ozoom.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.zoom_out_animation);

        imgview.startAnimation(anim);
    }
});
```

```
arotate.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.rotate_anti_animation);

        imgview.startAnimation(anim);
    }
});
```

```
ofade.setOnClickListener(new View.OnClickListener() {

    @Override

    public void onClick(View v) {

        Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.fade_out_animation);

        imgview.startAnimation(anim);
    }
});
```

```
move.setOnClickListener(new View.OnClickListener() {
```

## MOBILE APPLICATION DEVELOPMENT

```
@Override
public void onClick(View v) {
    Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.move_animation);
    imgview.startAnimation(anim);
}
});
blink.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.blink_animation);
        imgview.startAnimation(anim);
    }
});
bounce.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.bounce_animation);
        imgview.startAnimation(anim);
    }
});
uslide.setOnClickListener(new View.OnClickListener() {
    @Override
    public void onClick(View v) {
        Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),
R.anim.slide_up_animation);
        imgview.startAnimation(anim);
    }
});
```

## MOBILE APPLICATION DEVELOPMENT

```
dslide.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        Animation anim = AnimationUtils.loadAnimation(getApplicationContext(),  
R.anim.slide_down_animation);  
        imgview.startAnimation(anim);  
    }  
});  
stop.setOnClickListener(new View.OnClickListener() {  
    @Override  
    public void onClick(View v) {  
        imgview.clearAnimation();  
    }  
});  
}
```

### **}Source Code(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"  
    android:background="#BA5151"  
    tools:context=".MainActivity">  
  
    <TextView  
        android:id="@+id/txt1"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:layout_marginTop="28dp"
```

## MOBILE APPLICATION DEVELOPMENT

```
android:text="ANIMATION"
android:textSize="35dp"
android:textColor="@color/black"
android:gravity="center"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toTopOf="parent"/>
```

<ImageView

```
android:id="@+id/imgview"
android:layout_width="wrap_content"
android:layout_height="wrap_content"
android:layout_marginTop="28dp"
android:src="@drawable/img"
app:layout_constraintEnd_toEndOf="parent"
app:layout_constraintHorizontal_bias="0.497"
app:layout_constraintStart_toStartOf="parent"
app:layout_constraintTop_toBottomOf="@+id/txt1"/>
```

<LinearLayout

```
android:id="@+id/linear1"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="16dp"
android:orientation="horizontal"
android:weightSum="3"
app:layout_constraintTop_toBottomOf="@+id/imgview"
tools:layout_editor_absoluteX="0dp">
```

<Button

## MOBILE APPLICATION DEVELOPMENT

```
android:id="@+id/BTNizoom"
style="@style/TextAppearance.AppCompat.Widget.Button"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_weight="1"
android:padding="3dp"
android:text="@string/izoom"
android:textColor="@color/white" />
```

<Button

```
android:id="@+id/BTNrotate"
style="@style/TextAppearance.AppCompat.Widget.Button"
android:layout_width="59dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_weight="1"
android:padding="3dp"
android:text="@string/clockwise"
android:textColor="@color/white" />
```

<Button

```
android:id="@+id/BTNifade"
style="@style/TextAppearance.AppCompat.Widget.Button"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_weight="1"
android:padding="3dp"
android:text="@string/ifade"
```

## MOBILE APPLICATION DEVELOPMENT

```
        android:textColor="@color/white" />
```

```
</LinearLayout>
```

```
<LinearLayout
```

```
    android:id="@+id/linear2"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginTop="16dp"
```

```
    android:orientation="horizontal"
```

```
    android:weightSum="3"
```

```
    app:layout_constraintTop_toBottomOf="@+id/linear1"
```

```
    tools:layout_editor_absoluteX="0dp">
```

```
<Button
```

```
    android:id="@+id/BTNozoom"
```

```
    style="@style/TextAppearance.AppCompat.Widget.Button"
```

```
    android:layout_width="0dp"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_margin="10dp"
```

```
    android:layout_weight="1"
```

```
    android:padding="3dp"
```

```
    android:text="@string/ozoom"
```

```
    android:textColor="@color/white" />
```

```
<Button
```

```
    android:id="@+id/BTNarotate"
```

```
    style="@style/TextAppearance.AppCompat.Widget.Button"
```

```
    android:layout_width="59dp"
```

```
    android:layout_height="wrap_content"
```

## MOBILE APPLICATION DEVELOPMENT

```
android:layout_margin="10dp"
android:layout_weight="1"
android:padding="3dp"
android:text="@string/anticlockwise"
android:textColor="@color/white" />
```

<Button

```
android:id="@+id/BTNofade"
style="@style/TextAppearance.AppCompat.Widget.Button"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_weight="1"
android:padding="3dp"
android:text="@string/ofade"
android:textColor="@color/white" />
```

</LinearLayout>

<LinearLayout

```
android:id="@+id/linear3"
android:layout_width="match_parent"
android:layout_height="wrap_content"
android:layout_marginTop="16dp"
android:orientation="horizontal"
android:weightSum="3"
app:layout_constraintTop_toBottomOf="@+id/linear2"
tools:layout_editor_absoluteX="0dp">
```

<Button

## MOBILE APPLICATION DEVELOPMENT

```
android:id="@+id/BTNmove"
style="@style/TextAppearance.AppCompat.Widget.Button"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_weight="1"
android:padding="3dp"
android:text="@string/move"
android:textColor="@color/white" />
```

<Button

```
android:id="@+id/BTNblink"
style="@style/TextAppearance.AppCompat.Widget.Button"
android:layout_width="59dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_weight="1"
android:padding="3dp"
android:text="@string/blink"
android:textColor="@color/white" />
```

<Button

```
android:id="@+id/BTNbounce"
style="@style/TextAppearance.AppCompat.Widget.Button"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_weight="1"
android:padding="3dp"
android:text="@string/bounce"
```



## MOBILE APPLICATION DEVELOPMENT

```
android:textColor="@color/white" />
```

```
</LinearLayout>
```

```
<LinearLayout
```

```
    android:id="@+id/linear4"
```

```
    android:layout_width="match_parent"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_marginTop="16dp"
```

```
    android:orientation="horizontal"
```

```
    android:weightSum="3"
```

```
    app:layout_constraintTop_toBottomOf="@+id/linear3"
```

```
    tools:layout_editor_absoluteX="0dp">
```

```
<Button
```

```
    android:id="@+id/BTNuslide"
```

```
    style="@style/TextAppearance.AppCompat.Widget.Button"
```

```
    android:layout_width="0dp"
```

```
    android:layout_height="wrap_content"
```

```
    android:layout_margin="10dp"
```

```
    android:layout_weight="1"
```

```
    android:padding="3dp"
```

```
    android:text="@string/uslide"
```

```
    android:textColor="@color/white" />
```

```
<Button
```

```
    android:id="@+id/BTNstop"
```

```
    style="@style/TextAppearance.AppCompat.Widget.Button"
```

```
    android:layout_width="59dp"
```

```
    android:layout_height="wrap_content"
```

## MOBILE APPLICATION DEVELOPMENT

```
android:layout_margin="10dp"
android:layout_weight="1"
android:padding="3dp"
android:text="@string/stop"
android:textColor="@color/white" />
```

<Button

```
android:id="@+id/BTNdslide"
style="@style/TextAppearance.AppCompat.Widget.Button"
android:layout_width="0dp"
android:layout_height="wrap_content"
android:layout_margin="10dp"
android:layout_weight="1"
android:padding="3dp"
android:text="@string/dslide"
android:textColor="@color/white" />
```

</LinearLayout>

</androidx.constraintlayout.widget.ConstraintLayout>

### **Source Code(blink.xml):**

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
  <alpha android:fromAlpha="0.0"
    android:toAlpha="1.0"
    android:interpolator="@android:anim/accelerate_interpolator"
    android:duration="500"
    android:repeatMode="reverse"
    android:repeatCount="infinite"/>
</set>
```

## MOBILE APPLICATION DEVELOPMENT

### Source Code(bounce.xml):

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    android:interpolator="@android:anim/linear_interpolator"
    android:fillAfter="true">
        <translate
            android:fromYDelta="100% "
            android:toYDelta="-20% "
            android:duration="300" />
        <translate
            android:startOffset="500"
            android:fromYDelta="-20% "
            android:toYDelta="10% "
            android:duration="150" />
        <translate
            android:startOffset="1000"
            android:fromYDelta="10% "
            android:toYDelta="0"
            android:duration="100" />
    </set>
```

### Source Code(fade\_in.xml):

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    android:interpolator="@android:anim/linear_interpolator">
        <alpha
            android:duration="2000"
            android:fromAlpha="0.1"
            android:toAlpha="1.0" />
    </set>
```

### Source Code(fade\_out.xml):

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    android:interpolator="@android:anim/linear_interpolator">
        <alpha
            android:duration="2000"
            android:fromAlpha="1.0"
            android:toAlpha="0.1" />
        </set>
```

### Source Code(move.xml):

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
    <translate
        android:fromXDelta="0%p"
        android:toXDelta="75%p"
        android:duration="700" />
    </set>
```

### Source Code(rotate\_anti.xml):

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

### Source Code(rotate.xml):

```
<?xml version="1.0" encoding="utf-8"?>
<set xmlns:android="http://schemas.android.com/apk/res/android">
```

## MOBILE APPLICATION DEVELOPMENT

```
<rotate  
    android:duration="1000"  
    android:pivotX="50%"  
    android:pivotY="50%"  
    android:fromDegrees="0"  
    android:toDegrees="360"/>
```

```
</set>
```

### **Source Code(slide\_up.xml):**

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

```
</set>
```

### **Source Code(slide\_down.xml):**

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

```
</set>
```

### **Source Code(zoom\_in.xml):**

```
<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android">  
    <scale  
        android:duration="1000"  
        android:fromXScale="1"  
        android:fromYScale="1"
```

## MOBILE APPLICATION DEVELOPMENT

```
        android:pivotX="50% "  
        android:pivotY="50% "  
        android:toXScale="3"  
        android:toYScale="3"/>  
</set>
```

### **Source Code(zoom\_out.xml):**

```
<?xml version="1.0" encoding="utf-8"?>  
<set xmlns:android="http://schemas.android.com/apk/res/android">  
    <scale  
        android:duration="1000"  
        android:fromXScale="1"  
        android:fromYScale="1"  
        android:pivotX="50% "  
        android:pivotY="50% "  
        android:toXScale="0.3"  
        android:toYScale="0.3"/>  
</set>
```

## MOBILE APPLICATION DEVELOPMENT

### Output:



## MOBILE APPLICATION DEVELOPMENT

### Zoom Animation



### Rotate Animation





## MOBILE APPLICATION DEVELOPMENT

### Fade Animation



### Slide Animation

