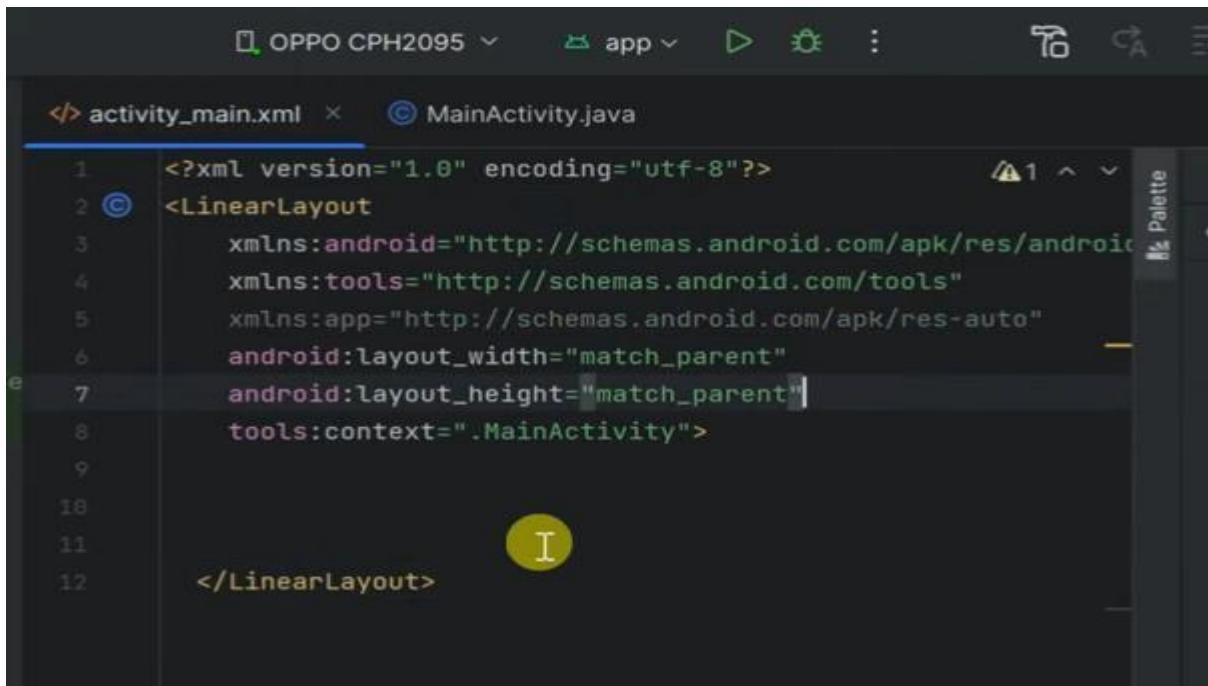


Practical no. 7- Programs related to different layouts: Linear, Relative, Table layout and List view.

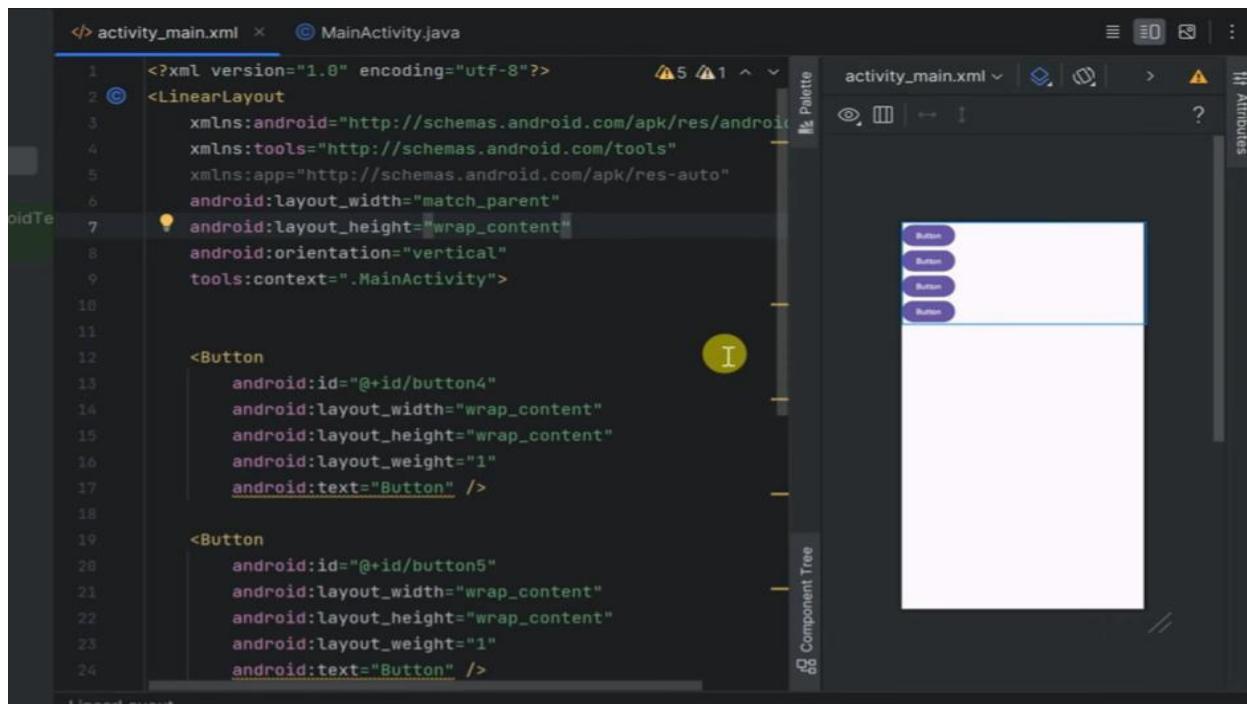
Linear layout :



Screenshot of Android Studio showing the XML code for a Linear Layout. The code defines a single Linear Layout with various attributes. A yellow circle with an 'I' is placed over the closing tag of the Linear Layout.

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

</LinearLayout>
```



Screenshot of Android Studio showing the XML code for a Linear Layout containing two Button elements. The Linear Layout has its height set to wrap_content. The first Button's height is also set to wrap_content, while its width is set to wrap_content. The second Button's height is set to wrap_content, while its width is set to wrap_content. A yellow circle with an 'I' is placed over the first Button's XML code.

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

    <Button
        android:id="@+id/button4"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Button" />

    <Button
        android:id="@+id/button5"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_weight="1"
        android:text="Button" />
```

Relative Layout:

The screenshot shows the Android Studio interface with the XML code for an activity_main.xml layout. The code defines a `<RelativeLayout>` containing an `<EditText>` and a `<LinearLayout>`. The `<EditText>` has a hint of "Reminder". The `<LinearLayout>` has an orientation of "vertical" and is positioned below the `<EditText>`. It contains a single `<Button>`. The preview window on the right shows a white screen with a purple rounded rectangle at the top labeled "Reminder" and two smaller purple rounded rectangles below it.

```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    xmlns:tools="http://schemas.android.com/tools"
    xmlns:app="http://schemas.android.com/apk/res-auto"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:orientation="vertical"
    android:paddingLeft="16dp"
    android:paddingRight="16dp"
    tools:context=".MainActivity">

    <EditText
        android:id="@+id/name"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:hint="Reminder" />
    <LinearLayout
        android:orientation="vertical"
        android:layout_width="fill_parent"
        android:layout_height="fill_parent"
        android:layout_alignParentStart="true"
        android:layout_below="@+id/name">
        <Button
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />
    </LinearLayout>
</RelativeLayout>
```

Table layout:

The screenshot shows the Android Studio interface with the XML code for an activity_main.xml layout. The code defines a `<LinearLayout>` containing a `<TableLayout>`. The `<TableLayout>` has a width of "wrap_content" and a height of "wrap_content". It has a `layout_marginLeft` of "50dp" and a `layout_marginTop` of "150dp". Inside the `<TableLayout>` is a single `<TableRow>`, which contains a single `<Button>`. The preview window on the right shows a white screen with a single button centered in the middle.

```
<?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=".MainActivity">

    <TableLayout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_marginLeft="50dp"
        android:layout_marginTop="150dp">
        <TableRow>
            <Button
                />
        </TableRow>
    </TableLayout>
</LinearLayout>
```

The screenshot shows the Android Studio interface with the XML layout editor on the right and the code editor on the left.

XML Layout Editor: Displays a 3x3 grid of buttons labeled 1 through 9. The button at position (3,3) has a blue selection box around it. The layout uses a TableLayout with two TableRow children. Each TableRow contains three Button elements with IDs btn1 through btn9 respectively.

```
<Button  
    android:id="@+id	btn5"  
    android:text="5"  
    android:layout_gravity="center_horizontal"/>  
  
<Button  
    android:id="@+id	btn6"  
    android:text="6"  
    android:layout_gravity="center_horizontal"/>  
  
</TableRow>  
  
<TableRow>  
  
<Button  
    android:id="@+id	btn1"  
    android:text="1"  
    android:layout_gravity="center_horizontal"/>  
  
<Button  
    android:id="@+id	btn2"  
    android:text="2"  
    android:layout_gravity="center_horizontal"/>
```

Code Editor: Shows the corresponding Java code in MainActivity.java. It defines nine buttons (btn1 to btn9) and initializes them in the onCreate method.

```
1 usage  
Button btn1,btn2,btn3,btn4,btn5,btn6,btn7,btn8,btn9;  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main);  
  
    btn1 = findViewById(R.id.btn1);  
    btn2 = findViewById(R.id.btn2);  
    btn3 = findViewById(R.id.btn3);  
    btn4 = findViewById(R.id.btn4);  
    btn5 = findViewById(R.id.btn5);  
    btn6 = findViewById(R.id.btn6);  
    btn7 = findViewById(R.id.btn7);  
    btn8 = findViewById(R.id.btn8);  
    btn9 = findViewById(R.id.btn9);
```

The screenshot shows the Java code editor for MainActivity.java.

```
1 usage  
Button btn1,btn2,btn3,btn4,btn5,btn6,btn7,btn8,btn9;  
  
@Override  
protected void onCreate(Bundle savedInstanceState) {  
    super.onCreate(savedInstanceState);  
    setContentView(R.layout.activity_main);  
  
    btn1 = findViewById(R.id.btn1);  
    btn2 = findViewById(R.id.btn2);  
    btn3 = findViewById(R.id.btn3);  
    btn4 = findViewById(R.id.btn4);  
    btn5 = findViewById(R.id.btn5);  
    btn6 = findViewById(R.id.btn6);  
    btn7 = findViewById(R.id.btn7);  
    btn8 = findViewById(R.id.btn8);  
    btn9 = findViewById(R.id.btn9);
```

The screenshot shows the Android Studio interface with the project navigation bar at the top. The main editor window displays the `MainActivity.java` file. The code is as follows:

```
14     protected void onCreate(Bundle savedInstanceState) {
15         super.onCreate(savedInstanceState);
16         setContentView(R.layout.activity_main);
17
18         btn1 = findViewById(R.id.btn1);
19         btn2 = findViewById(R.id.btn2);
20         btn3 = findViewById(R.id.btn3);
21         btn4 = findViewById(R.id.btn4);
22         btn5 = findViewById(R.id.btn5);
23         btn6 = findViewById(R.id.btn6);
24         btn7 = findViewById(R.id.btn7);
25         btn8 = findViewById(R.id.btn8);
26         btn9 = findViewById(R.id.btn9);
27
28
29         btn1.setOnClickListener(this);
30         btn2.setOnClickListener(this);
31         btn3.setOnClickListener(this);
32         btn4.setOnClickListener(this);
33         btn5.setOnClickListener(this);
34         btn6.setOnClickListener(this);
35         btn7.setOnClickListener(this);
36         btn8.setOnClickListener(this);
37         btn9.setOnClickListener(this);
38     }

```

The screenshot shows the Android Studio interface with the project navigation bar at the top. The main editor window displays the `MainActivity.java` file. The code is identical to the one in the previous screenshot. A code completion tooltip is open at the end of the line `btn1.setOnClickListener(this);`, showing the following options:

- Cast argument to 'OnClickListener'
- Make "MainActivity" implement 'android.view.View.OnClickListener'
- Collapse into loop
- Press Ctrl+Q to toggle preview

```
activity_main.xml>MainActivity.java
```

```
32     btn2.setOnClickListener(this);
33     btn3.setOnClickListener(this);
34     btn4.setOnClickListener(this);
35     btn5.setOnClickListener(this);
36     btn6.setOnClickListener(this);
37     btn7.setOnClickListener(this);
38     btn8.setOnClickListener(this);
39     btn9.setOnClickListener(this);
40 }
41
42     @Override
43     public void onClick(View v) {
44
45         int id = v.getId();
46
47         if (id == R.id.btn1){
48             Toast.makeText(context, this, text: "Button1 Clicked", Toast.LENGTH_SHORT).show();
49         } else if (id == R.id.btn2) {
50             Toast.makeText(context, this, text: "Button 2 Clicked", Toast.LENGTH_SHORT).show();
51         }
52     }
53 }
54 }
```

List view :

```
activity_main.xml>MainActivity.java
```

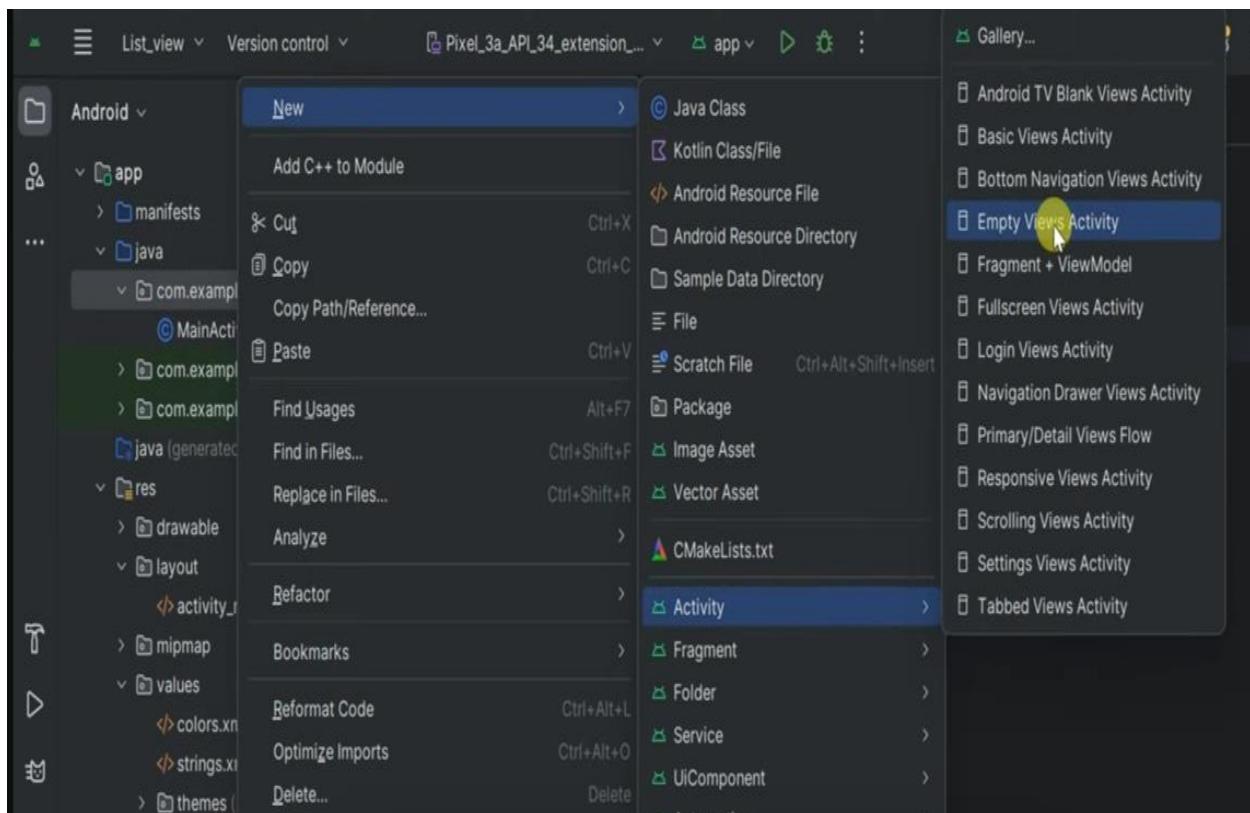
```
<?xml version="1.0" encoding="utf-8"?>
<RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:context=".MainActivity">

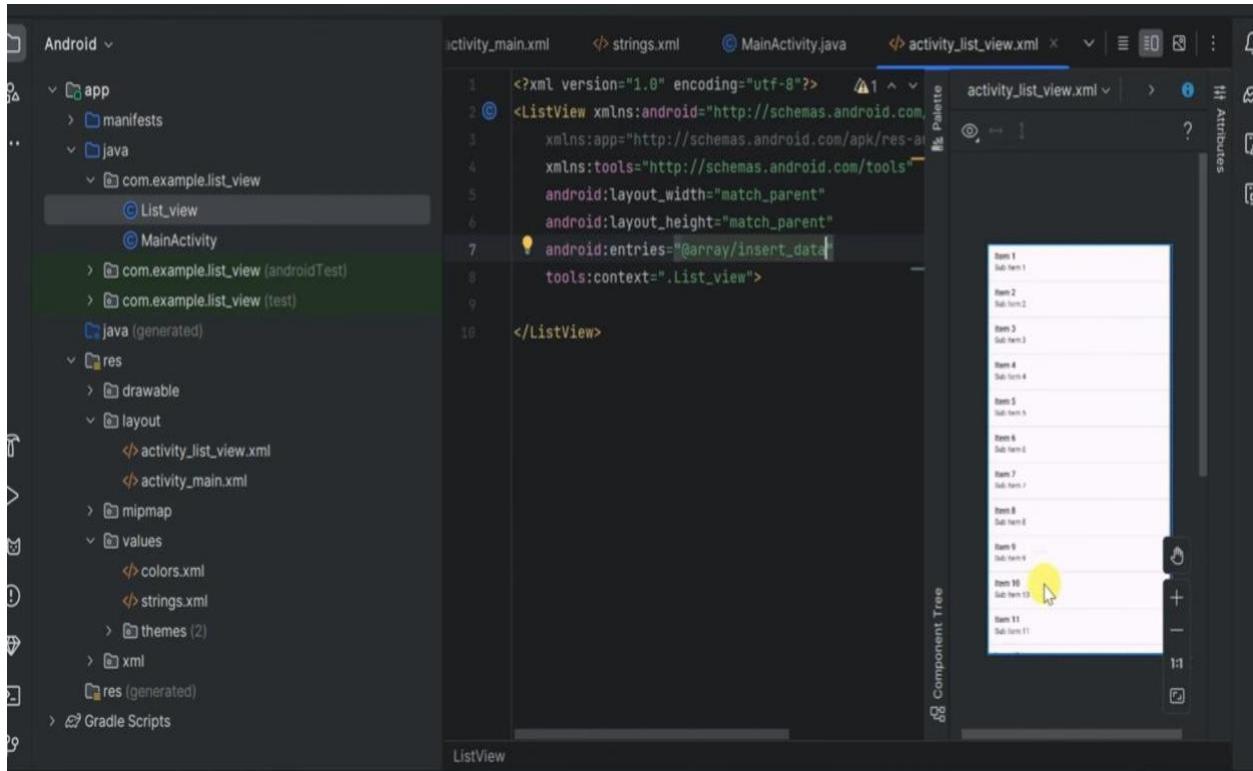
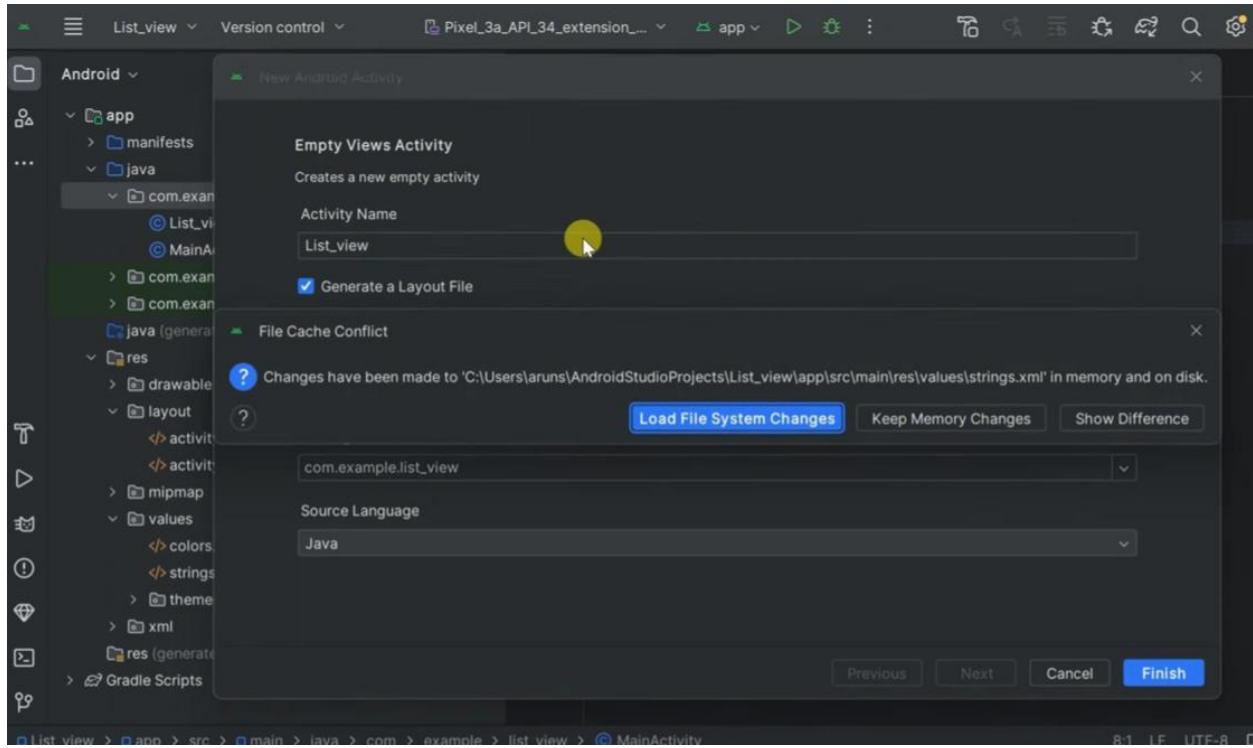
    <Button
        android:layout_width="match_parent"
        android:layout_height="wrap_content"
        android:text="Click here to view the list view"
        android:id="@+id/clickme"
        android:layout_centerInParent="true"/>

</RelativeLayout>
```

The screenshot shows the Android Studio interface with the project structure on the left and the code editor on the right. The code editor displays the `strings.xml` file under the `res/values` directory. The file contains the following XML code:

```
<resources>
    <string name="app_name">List_view</string>
    <array name="insert_data">
        <item>One</item>
        <item>Two</item>
        <item>Three</item>
        <item>Four</item>
        <item>Five</item>
        <item>Six</item>
        <item>Seven</item>
        <item>Eight</item>
        <item>Nine</item>
        <item>Ten</item>
    </array>
</resources>
```





The screenshot shows the Android Studio interface with the following details:

- Project Structure:** The left sidebar shows the project structure under "Android". It includes the "app" module with "manifests", "java", "res", and "Gradle Scripts" sections. The "java" section contains a package named "com.example.list_view" which includes "List_view" and "MainActivity".
- Code Editor:** The main window displays the "MainActivity.java" file. The code is as follows:

```
1  package com.example.list_view;
2
3  import android.os.Bundle;
4  import android.view.View;
5  import android.widget.Button;
6
7  public class MainActivity extends AppCompatActivity {
8
9     @Override
10    protected void onCreate(Bundle savedInstanceState) {
11        super.onCreate(savedInstanceState);
12        setContentView(R.layout.activity_main);
13
14        Button btn = findViewById(R.id.clickme);
15
16        btn.setOnClickListener(new View.OnClickListener() {
17            @Override
18            public void onClick(View v) {
19                Intent intent = new Intent(getApplicationContext(), List_view.class);
20                startActivity(intent);
21            }
22        });
23    }
24}
```

The code editor has syntax highlighting and a status bar at the top indicating 1 warning.