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विद्याधनं सर्वधन प्रधानम्।

Program No:	16
Roll No :	1545
Title of Program :	Create an application using a listview.
Objective :	

A ListView in Android is a type of AdapterView that displays a vertically scrollable list of items, with each item positioned one below the other. Using an adapter, items are inserted into the list from an array or database efficiently. For displaying the items in the list method setAdaptor() is used. The setAdaptor() method binds the adapter with the ListView.

ListView in Android is a ViewGroup that is used to display the list of items in multiple rows and contains an adapter that automatically inserts the items into the list dynamically. The main purpose of the adapter is to retrieve data from an array or database and dynamically insert each item into the list for the desired result. Adapters can fetch data from various sources including resources like the strings.xml file.

Some Important XML Attributes of ListView

Attribute	Description
android:divider	A color or drawable to separate list items.
android:dividerHeight	Divider's height.

android:entries	Reference to an array resource that will populate the ListView.
android:footerDividersEnabled	When set to false, the ListView will not draw the divider before each footer view.
android:headerDividersEnabled	When set to false, the ListView will not draw the divider before each header view.

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

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```xml
ListView
android: id = "@+id/listView"
android: layout_width = "match_parent"
android: layout_height = "wrap_content"
android: divider = "@color/black"
android: dividerHeight = "1dp"
android: listSelector = "@color/white" /
 >
 <
 /RelativeLayout>
```

MainActivity.java

```java
package com.example.mylistview;
import android.os.Bundle;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;
import androidx.activity.EdgeToEdge;
import androidx.appcompat.app.AppCompatActivity;
import androidx.core.graphics.Insets;
import androidx.core.view.ViewCompat;
import androidx.core.view.WindowInsetsCompat;
public class MainActivity extends AppCompatActivity {
  ListView lv;
  @Override
  protected void onCreate(Bundle savedInstanceState) {
    super.onCreate(savedInstanceState);
    EdgeToEdge.enable(this);
    setContentView(R.layout.activity_main);
    lv = findViewById(R.id.listView);
    final String[] prolan = {
      "C",
      "C++",
      "C#",
      "Java",
      "Python",
      "JavaScript",
```

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```java
      "Kotlin",
      "Swift",
      "Ruby",
      "PHP",
      "Go",
      "Rust",
      "TypeScript",
      "R",
      "MATLAB",
      "Scala",
      "Perl",
      "Dart",
      "Objective-C",
      "SQL"
    };
    ArrayAdapter < String > adapter = new ArrayAdapter < > (
      this,
      android.R.layout.simple_list_item_1,
      prolan
    );
    lv.setAdapter(adapter);
    lv.setOnItemClickListener(new AdapterView.OnItemClickListener() {
      @Override
      public void onItemClick(AdapterView < ? > parent, android.view.View view, int
position, long id) {
        String selected = prolan[position];
        Toast.makeText(MainActivity.this, "You clicked: " + selected,
          Toast.LENGTH_SHORT).show();
      }
    });
    ViewCompat.setOnApplyWindowInsetsListener(findViewById(R.id.main), (v,
      insets) -> {
      Insets systemBars = insets.getInsets(WindowInsetsCompat.Type.systemBars());
      v.setPadding(systemBars.left, systemBars.top, systemBars.right,
        systemBars.bottom);
      return insets;
    });
  }
}
```

Output: