```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="wrap_content"
android:orientation="vertical"
tools:context=".MainActivity" >

<ListView
android:id="@+id/listView"
android:layout_width="match_parent"
android:layout_height="match_parent" />
</LinearLayout>
```



```java
package com.ict.ex15_listview;

import androidx.appcompat.app.AppCompatActivity;

import android.os.Bundle;
import android.view.View;
import android.widget.AdapterView;
import android.widget.ArrayAdapter;
import android.widget.ListView;
import android.widget.Toast;

import java.util.ArrayList;

public class MainActivity extends AppCompatActivity {
    // 리스트뷰도 스피너와 마찬가지로 어댑터를 사용한다.
    // 다른점 : 스피너 배너. 리스트뷰는 ArrayList
    //         스피너 : setOnItemSelectedListener,
    //         리스트뷰 : setOnItemClickListener,
    ListView listView;
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
        listView = findViewById(R.id.listView);
        // 어댑터에 저장하는 데이터를 ArrayList에 담자
        ArrayList<String> list = new ArrayList<>();
        list.add("나라선택");
        list.add("한국");
        list.add("중국");
        list.add("일본");
        list.add("영국");
        list.add("태국");
        // 어댑터
        ArrayAdapter<String> adapter =
        new ArrayAdapter<>(this, android.R.layout.simple_list_item_1, list);
        // 어댑터 장착
        listView.setAdapter(adapter);
        // 이벤트 처리
        listView.setOnItemClickListener(new AdapterView.OnItemClickListener() {
        @Override
        public void onItemClick(AdapterView<?> adapterView, View view, int i, long
l) {
        String msg = (String)listView.getAdapter().getItem(i);
        Toast.makeText(MainActivity.this, msg+" 선택",Toast.LENGTH_SHORT).show();
        }
        });
    }
}
```
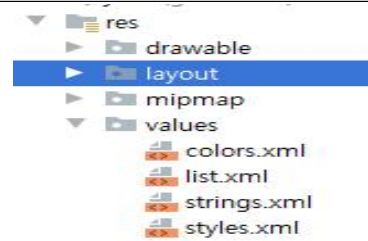
```xml
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
xmlns:app="http://schemas.android.com/apk/res-auto"
xmlns:tools="http://schemas.android.com/tools"
android:layout_width="match_parent"
android:layout_height="match_parent"
tools:context=".MainActivity2">
<!--res - values-list.xml 를 만든다.-->
<ListView
android:id="@+id/listView2"
android:layout_width="match_parent"
android:layout_height="match_parent"
android:entries="@array/web"/>
</LinearLayout>
```

res
► drawable
► layout
► mipmap
▼ values
colors.xml
list.xml
strings.xml
styles.xml

```xml
<?xml version="1.0" encoding="utf-8"?>
<resources>
    <array name="web">
        <item>html</item>
        <item>servlet</item>
        <item>json</item>
        <item>ajax</item>
        <item>jQuery</item>
    </array>
</resources>
```

Item 1
Sub Item 1

Item 2
Sub Item 2

Item 3
Sub Item 3

Item 4
Sub Item 4

Item 5
Sub Item 5

```java
public class MainActivity2 extends AppCompatActivity {
ListView listView2;
@Override
protected void onCreate(Bundle savedInstanceState) {
super.onCreate(savedInstanceState);
setContentView(R.layout.activity_main2);

listView2 = findViewById(R.id.listView2);

listView2.setOnItemClickListener(new AdapterView.OnItemClickListener() {
@Override
public void onItemClick(AdapterView<?> adapterView, View view, int i, long
l) {
String msg = (String) listView2.getAdapter().getItem(i);
Toast.makeText(MainActivity2.this, msg+ "선택", Toast.LENGTH_SHORT).show();
}
});
}
}
```

Ex15_ListView

html

servlet

json

ajax

jQuery

servlet선택

```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="wrap_content"
    android:orientation="vertical"
    tools:context=".MainActivity3">

    <LinearLayout
        android:layout_width="match_parent"
        android:layout_height="match_parent"
        android:orientation="horizontal">

        <EditText
            android:id="@+id/editText1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:ems="10"
            android:inputType="textPersonName"
            android:hint="입출력정보 입력하세요" />

        <Button
            android:id="@+id/button1"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="추가" />

        <Button
            android:id="@+id/button2"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content"
            android:layout_weight="1"
            android:text="삭제" />
    </LinearLayout>

    <ListView
        android:id="@+id/listView1"
        android:layout_width="match_parent"
        android:layout_height="match_parent" />
</LinearLayout>
```



```java
public class MainActivity3 extends AppCompatActivity {
    EditText editText1;
    Button button1, button2;
    ListView listView1;
    ArrayList<String> list = new ArrayList<>();

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main3);

        editText1 = findViewById(R.id.editText1);
        button1 = findViewById(R.id.button1);
        button2 = findViewById(R.id.button2);
        listView1 = findViewById(R.id.listView1);

        list.add("과일선택");;
        list.add("수박");
        list.add("사과");
        list.add("바나나");

        final ArrayAdapter<String> adapter = new ArrayAdapter<String>(
                this, android.R.layout.simple_list_item_1, list
        );

        listView1.setAdapter(adapter);

        button1.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String str = editText1.getText().toString();
                list.add(str);
                editText1.setText("");
                // 한템포 늦게 반응한다.
                // 리스트에 데이터가 변경되면 시스템에게 알리고 바로 새로고침 하자.
                adapter.notifyDataSetChanged();
            }
        });
        button2.setOnClickListener(new View.OnClickListener() {
            @Override
            public void onClick(View view) {
                String str = editText1.getText().toString();
                list.remove(str);
                editText1.setText("");
                // 한템포 늦게 반응한다.
                // 리스트에 데이터가 변경되면 시스템에게 알리고 바로 새로고침 하자.
                adapter.notifyDataSetChanged();
            }
        });
    }
}
```