# Adapters

## Views

### Single View

### Multiple Widget View

List View 🡪 Recycle View (Updated List View) shows the collection

Adapter

Guide

Present

MVC

Adapter View

Data Source

#### List View

Provide data via two methods

1. Provide data to entries from Strings.xml that is static data. It does not come from an adapter. It cannot be updated at run time.

<string-array name=”OS”>

<item>Android</item>

<item>Windows</item>

<item>Linux</item>

<item>Mac OS</item>

</string-array>

entries : @array/OS

1. Provide data via Adapter classes
2. Base Adapter
3. Array Adapter

Requires three things

Context of activity?

View of each row?

Data?





// Using custom view

// row: image, two texts, call icon

1. CursorAdapter

Android returns data from database in the form of cursor. Cursor points to specific rows of database table

// layout\_row for each row

<?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"  
 android:layout\_width="match\_parent"  
 android:gravity="center\_vertical"  
 android:layout\_height="120dp"

>  
  
 <ImageView  
 android:id="@+id/imageView"  
 android:layout\_width="100dp"  
 android:layout\_height="100dp"  
 android:layout\_weight="0"  
 app:srcCompat="@drawable/allama" />  
  
 <LinearLayout  
 android:layout\_width="wrap\_content"  
 android:layout\_height="120dp"  
 android:layout\_weight="2"  
 android:gravity="center\_vertical"  
 android:orientation="vertical">  
  
 <TextView  
 android:id="@+id/name"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:layout\_marginBottom="20dp"  
 android:text="Text View"  
 android:textSize="20dp" />  
  
 <TextView  
 android:id="@+id/dob"  
 android:layout\_width="match\_parent"  
 android:layout\_height="wrap\_content"  
 android:text="Text View"  
 android:textSize="20dp" />  
  
 </LinearLayout>  
  
 <ImageView  
 android:id="@+id/imageView3"  
 android:layout\_width="100dp"  
 android:layout\_height="100dp"  
 android:layout\_weight="0"  
 app:srcCompat="@android:drawable/sym\_action\_call" />  
  
</LinearLayout>

// Code for this

package com.example.adapterdemo  
  
import android.content.Context  
import androidx.appcompat.app.AppCompatActivity  
import android.os.Bundle  
import android.view.LayoutInflater  
import android.view.View  
import android.view.ViewGroup  
import android.widget.ArrayAdapter  
import android.widget.ImageView  
import android.widget.ListView  
import android.widget.TextView  
  
class MainActivity : AppCompatActivity() {  
  
  
 data class Personality(val dp: Int, val name: String, val dob: String)  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 setContentView(R.layout.*activity\_main*)  
  
 val data = *arrayOf*(  
 Personality(R.drawable.*edhi*, "Edhi", "1/1/1950"),  
 Personality(R.drawable.*quaid*, "Quaid", "25/12/1876"),  
 Personality(R.drawable.*allama*, "Allama", "09/09/1877"),  
 Personality(R.drawable.*sir*, "Sir Nisar", "1/1/1950"),  
 Personality(R.drawable.*edhi*, "Edhi", "1/1/1950"),  
 Personality(R.drawable.*quaid*, "Quaid", "25/12/1876"),  
 Personality(R.drawable.*allama*, "Allama", "09/09/1877"),  
 Personality(R.drawable.*sir*, "Sir Nisar", "1/1/1950"),  
 Personality(R.drawable.*edhi*, "Edhi", "1/1/1950"),  
 Personality(R.drawable.*quaid*, "Quaid", "25/12/1876"),  
 Personality(R.drawable.*allama*, "Allama", "09/09/1877"),  
 Personality(R.drawable.*sir*, "Sir Nisar", "1/1/1950"),  
 Personality(R.drawable.*edhi*, "Edhi", "1/1/1950"),  
 Personality(R.drawable.*quaid*, "Quaid", "25/12/1876"),  
 Personality(R.drawable.*allama*, "Allama", "09/09/1877"),  
 Personality(R.drawable.*sir*, "Sir Nisar", "1/1/1950"),  
 Personality(R.drawable.*edhi*, "Edhi", "1/1/1950"),  
 Personality(R.drawable.*quaid*, "Quaid", "25/12/1876"),  
 Personality(R.drawable.*allama*, "Allama", "09/09/1877"),  
 Personality(R.drawable.*sir*, "Sir Nisar", "1/1/1950"),  
 )  
  
 val adapter = PersonalityAdapter(this, R.layout.*row\_layout*, data)  
 findViewById<ListView>(R.id.*listview*).*adapter* = adapter  
 }  
  
 class PersonalityAdapter(context: Context, resource: Int, objects: Array<out Personality>) :  
 ArrayAdapter<Personality>(context, resource, objects) {  
  
 val cont = context  
 val res = resource  
 val data= objects

override fun getView(position: Int, convertView: View?, parent: ViewGroup): View {  
 var view = convertView!!  
 if(view == null)  
 view = LayoutInflater.from(cont).inflate(res, parent, false)  
  
 val dp = view.findViewById<ImageView>(R.id.*imageView*)  
 dp.setImageResource(data[position].dp)  
  
 val name = view.findViewById<TextView>(R.id.*name*)  
 name.*text* = data[position].name  
  
 val dob = view.findViewById<TextView>(R.id.*dob*)  
 dob.*text* = data[position].dob  
  
 return view  
 }  
  
 }  
  
}

# Full Code

package com.example.listviewandadapter  
  
import android.content.Context  
import androidx.appcompat.app.AppCompatActivity  
import android.os.Bundle  
import android.speech.tts.TextToSpeech  
import android.view.LayoutInflater  
import android.view.View  
import android.view.ViewGroup  
import android.widget.\*  
  
class MainActivity : AppCompatActivity() {  
  
 data class Personality(var dp: Int, var name: String, var dob: String)  
 var isTTSReady = false  
  
 override fun onCreate(savedInstanceState: Bundle?) {  
 super.onCreate(savedInstanceState)  
 setContentView(R.layout.*activity\_main*)  
  
 val tts: TextToSpeech = TextToSpeech(this,  
 TextToSpeech.OnInitListener **{** isTTSReady = true  
 **}** )  
  
 val data = *arrayOf*(  
 Personality(R.drawable.*edhi*, "Edhi", "1/1/1950"),  
 Personality(R.drawable.*quaid*, "Quaid", "25/12/1876"),  
 Personality(R.drawable.*allama*, "Allama", "09/09/1877"),  
 Personality(R.drawable.*sir*, "Sir Nisar", "1/1/1950"),  
 Personality(R.drawable.*edhi*, "Edhi", "1/1/1950"),  
 Personality(R.drawable.*quaid*, "Quaid", "25/12/1876"),  
 Personality(R.drawable.*allama*, "Allama", "09/09/1877"),  
 Personality(R.drawable.*sir*, "Sir Nisar", "1/1/1950"),  
 Personality(R.drawable.*edhi*, "Edhi", "1/1/1950"),  
 Personality(R.drawable.*quaid*, "Quaid", "25/12/1876"),  
 Personality(R.drawable.*allama*, "Allama", "09/09/1877"),  
 Personality(R.drawable.*sir*, "Sir Nisar", "1/1/1950"),  
 Personality(R.drawable.*edhi*, "Edhi", "1/1/1950"),  
 Personality(R.drawable.*quaid*, "Quaid", "25/12/1876"),  
 Personality(R.drawable.*allama*, "Allama", "09/09/1877"),  
 Personality(R.drawable.*sir*, "Sir Nisar", "1/1/1950"),  
 Personality(R.drawable.*edhi*, "Edhi", "1/1/1950"),  
 Personality(R.drawable.*quaid*, "Quaid", "25/12/1876"),  
 Personality(R.drawable.*allama*, "Allama", "09/09/1877"),  
 Personality(R.drawable.*sir*, "Sir Nisar", "1/1/1950"),  
 )  
  
 val list = findViewById<ListView>(R.id.*list*)  
  
 val adapter = PersonalityAdapter(this,  
 R.layout.*row*, data)  
  
 list.*adapter* = adapter  
  
 list.*onItemClickListener* =  
 AdapterView.OnItemClickListener **{** adapterView, view, i, l **->** Toast.makeText(this, data[i].name, Toast.*LENGTH\_LONG*).show()  
 if(isTTSReady)  
 tts.speak(  
 view.findViewById<TextView>(R.id.*name*).*text*,  
 TextToSpeech.*QUEUE\_ADD*,  
 null,  
 "1234"  
 )  
 **}** }  
  
 class PersonalityAdapter(context: Context, resource: Int, objects: Array<out Personality>) :  
 ArrayAdapter<Personality>(context, resource, objects) {  
  
 val res = resource  
 val data = objects  
  
 override fun getView(position: Int, convertView: View?, parent: ViewGroup): View {  
 var view = convertView  
 if(view == null)  
 view = LayoutInflater.from(*context*).inflate(res, parent, false)  
  
 val dp = view!!.findViewById<ImageView>(R.id.*imageView*)  
 dp.setImageResource(data[position].dp)  
  
 val name = view.findViewById<TextView>(R.id.*name*)  
 name.*text* = data[position].name  
  
 val dob = view.findViewById<TextView>(R.id.*dob*)  
 dob.*text* = data[position].dob  
  
 return view  
 }  
  
 }  
}