Making Mobile Apps
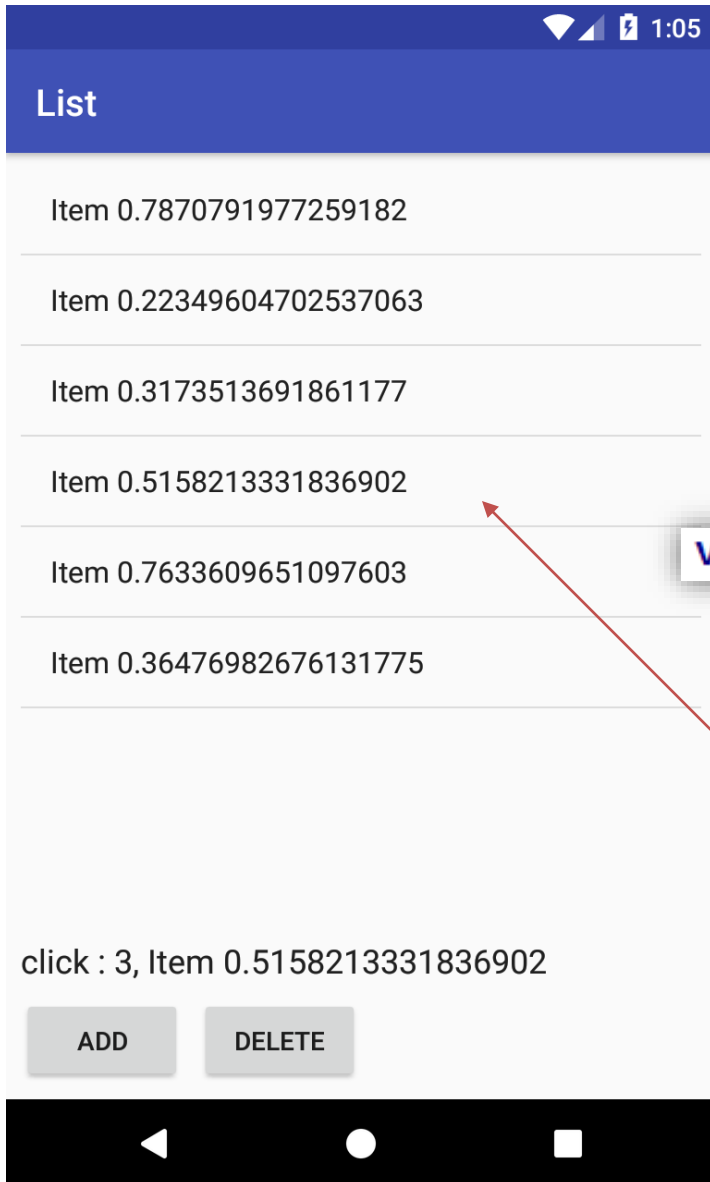
Lec 24. ListView & Adapter

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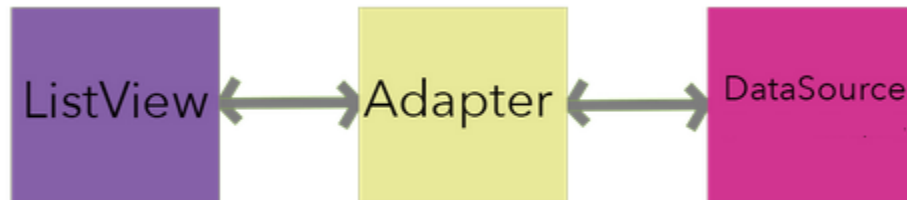# ListView – Adapter – Data

```
var items = mutableListOf<String>()
```

```
var adapter: ArrayAdapter<String>
```

(1)

```kotlin
class MainActivity : AppCompatActivity() {

    var items = mutableListOf<String>()
    lateinit var adapter: ArrayAdapter<String>

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        adapter = ArrayAdapter(
                this, android.R.layout.simple_list_item_1, items)

        listView.setAdapter(adapter)
    }

    fun add_item(view: View) {
        items.add("Item " + Math.random())
        adapter.notifyDataSetChanged()
    }

    fun del_item(view: View) {
        items.removeAt(0)
        adapter.notifyDataSetChanged()
    }
}
```

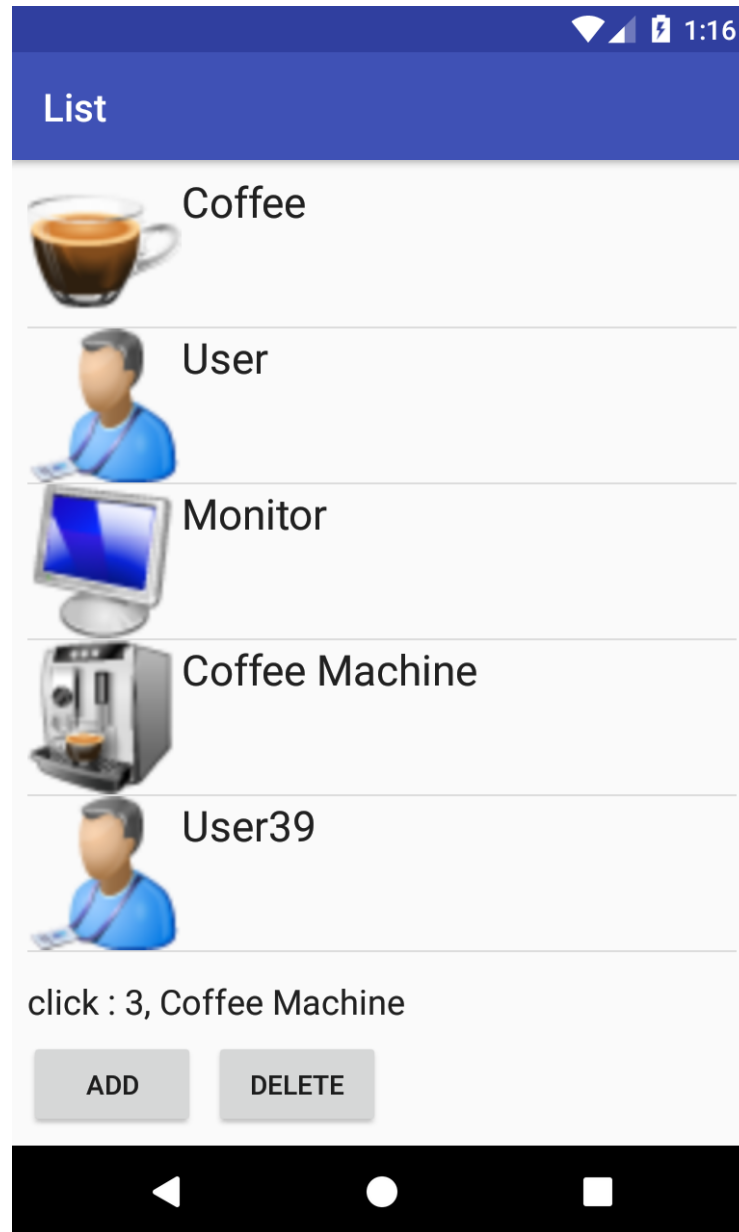## (2) Add "setOnItemClickListener"

```kotlin
class MainActivity : AppCompatActivity(), AdapterView.OnItemClickListener {

    var items = mutableListOf<String>()
    lateinit var adapter: ArrayAdapter<String>
    var idx_sel = 0

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        adapter = ArrayAdapter(
                this, android.R.layout.simple_list_item_1, items)

        listView.setAdapter(adapter)
        listView.setOnItemClickListener(this)
    }
```

```kotlin
fun add_item(view: View) {
    items.add("Item " + Math.random())
    adapter.notifyDataSetChanged()
}

fun del_item(view: View) {
    items.removeAt(idx_sel)
    adapter.notifyDataSetChanged()
}

override fun onItemClick(
        parent: AdapterView<*>, view: View, position: Int, id: Long) {
    textView.text = "click : " + position + ", " + items[position]
    idx_sel = position
}
}
```

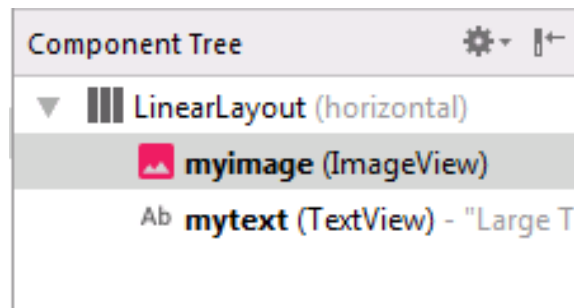# ListView with Custom Layout

ListView with a Custom Layout

(1) make a layout for a row

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

    <ImageView
        android:layout_width="80dp"
        android:layout_height="80dp"
        android:id="@+id/myimage" />

    <TextView
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Large Text"
        android:id="@+id/mytext"
        android:textAppearance="@style/TextAppearance.AppCompat.Large" />

</LinearLayout>
```

```
▼ 📁 layout
      activity_main.xml
      list_row.xml
```

Component Tree ⚙▾ ⊩←

```
▼ ▌▌▌ LinearLayout (horizontal)
        📷 myimage (ImageView)
        Ab mytext (TextView) - "Large T...
```

▼📶🔋 8:00

List

Large Text

```kotlin
data class MyData(var img : Int, var name : String)

class MyAdapter(context: Context, list: MutableList<MyData>) :
        ArrayAdapter<MyData>(context, 0, list) {

    override fun getView(position: Int, convertView: View?, parent: ViewGroup?): View {

        var data = getItem(position)

        var a = LayoutInflater.from(context)

        var view = convertView
        if(view == null) {
            view = a.inflate(R.layout.list_row, parent, false);
        }

        var list_text = view!!.findViewById<TextView>(R.id.mytext)
        var list_image = view.findViewById<ImageView>(R.id.myimage)

        list_text.text = data.name
        list_image.setImageResource(data.img)

        return view
    }
}
```
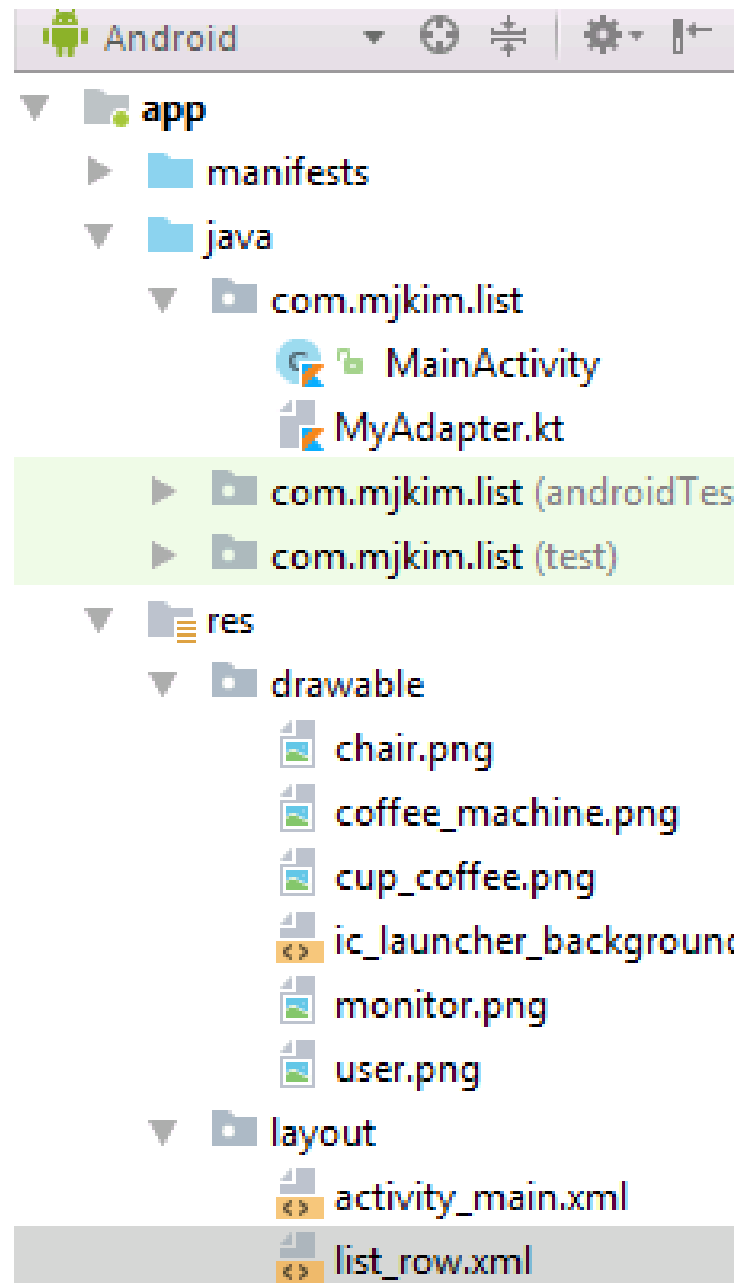
(3) Add images

```
Android                    ⊙  ÷  | ⚙ ▾  |←

▼  app
   ▶     manifests
   ▼     java
      ▼     com.mjkim.list
                  MainActivity
                MyAdapter.kt
      ▶     com.mjkim.list (androidTes
      ▶     com.mjkim.list (test)
   ▼     res
      ▼     drawable
                chair.png
                coffee_machine.png
                cup_coffee.png
                ic_launcher_background
                monitor.png
                user.png
      ▼     layout
                activity_main.xml
                list_row.xml
```

(4) Main Activity

```kotlin
class MainActivity : AppCompatActivity(), AdapterView.OnItemClickListener {

    var items = mutableListOf(
            MyData(R.drawable.cup_coffee, "Coffee"),
            MyData(R.drawable.user, "User"),
            MyData(R.drawable.monitor, "Monitor"),
            MyData(R.drawable.coffee_machine, "Coffee Machine"))

    lateinit var adapter : MyAdapter
    var idx_sel = 0

    override fun onCreate(savedInstanceState: Bundle?) {
        super.onCreate(savedInstanceState)
        setContentView(R.layout.activity_main)

        adapter = MyAdapter(this, items)
        listView.setAdapter(adapter)
        listView.setOnItemClickListener(this)
    }
```

```kotlin
fun add_item(view: View) {
    items.add( MyData(R.drawable.user, "User" + Random().nextInt(100)) )
    adapter.notifyDataSetChanged()
}

fun del_item(view: View) {
    items.removeAt(idx_sel)
    adapter.notifyDataSetChanged()
}

override fun onItemClick(
        parent: AdapterView<*>, view: View, position: Int, id: Long) {
    textView.setText("click : " + position + ", " + items[position].name)
    idx_sel = position
}
}
```