

Android Resources (Part 1, 2, 3, 4)

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I. Chapter objectives

- Understand resources including definition and XML, basic layouts, ViewPager and TabLayout in Android and apply to practice.

II. Resources

- Description: Things embedded into the app, in res/directory.
Access through code **R.<category>.<resourceName>**.
- Example:
MyProject/
 src/
 MyActivity.java
 res/
 drawable/
 graphic.png
 layout/
 main.xml
 info.xml
 mipmap/
 icon.png
 values/
 strings.xml

Types of resources are mentioned below.

1. Layouts

- Description: A way to organize View inside an UI.
Hierarchical structure of one UI.
Can be created by code, can be nested.
XML files in **res/layout**.
WYSIWYG or manual editor .
- Example: Popular layout classes:

- **FrameLayout**

- Can contain multi-children (Views).
- Multi layers, Z-based order.
- Support child margins and gravity.
- First child will be at the bottom.

- **LinearLayout**

- One direction: horizontal or vertical.
- Use layout_weight (no layout_weight → no stretch).
- Based on orientation.
 - Horizontal: stretch width.
 - Vertical: stretch height.
- Width/height w_i formula:

$$\omega_i = \frac{\gamma_i}{\sum_{j=0}^{n-1} \gamma_j} \times (\omega_{parent} - \sum_{k=0}^{n-1} \omega_k | \gamma_k = 0)$$

- **RelativeLayout**

- Multiple layers, Z-order based.
- Relativity of children' s position and size:
 - To parent.
 - To each other.
- Children are relative to parent and to each other.

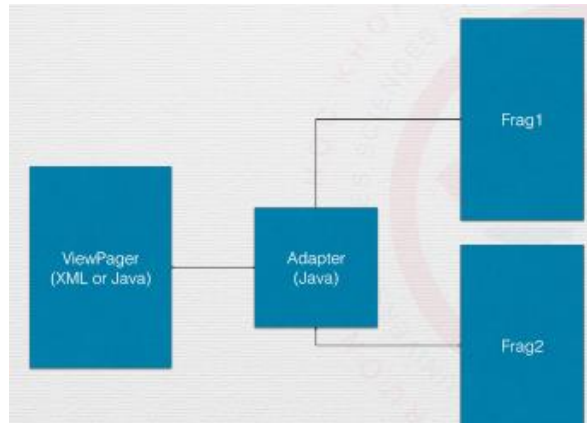
- **ViewPager**

- Tab-like container.
- No header. Use a separate view for that.
 - Android design library' s TabLayout.
- Each tab content is a fragment.
- ViewPager in XML Layout.
 - Example:

```
<android.support.v4.view.ViewPager
    android:id="@+id/pager"
    android:layout_width="match_parent"
    android:layout_height="match_parent" />
```

- “Adapter” in Java class (in parent Activity or Fragment), specify what fragment is in what page.

- Example:



- Header for ViewPager:
 - build.gradle (of your app, not your project)
 - Example:

```
compile "com.android.support:design:23.1.0"
```
 - Layout XML : above ViewPager.