

Resources

Resources

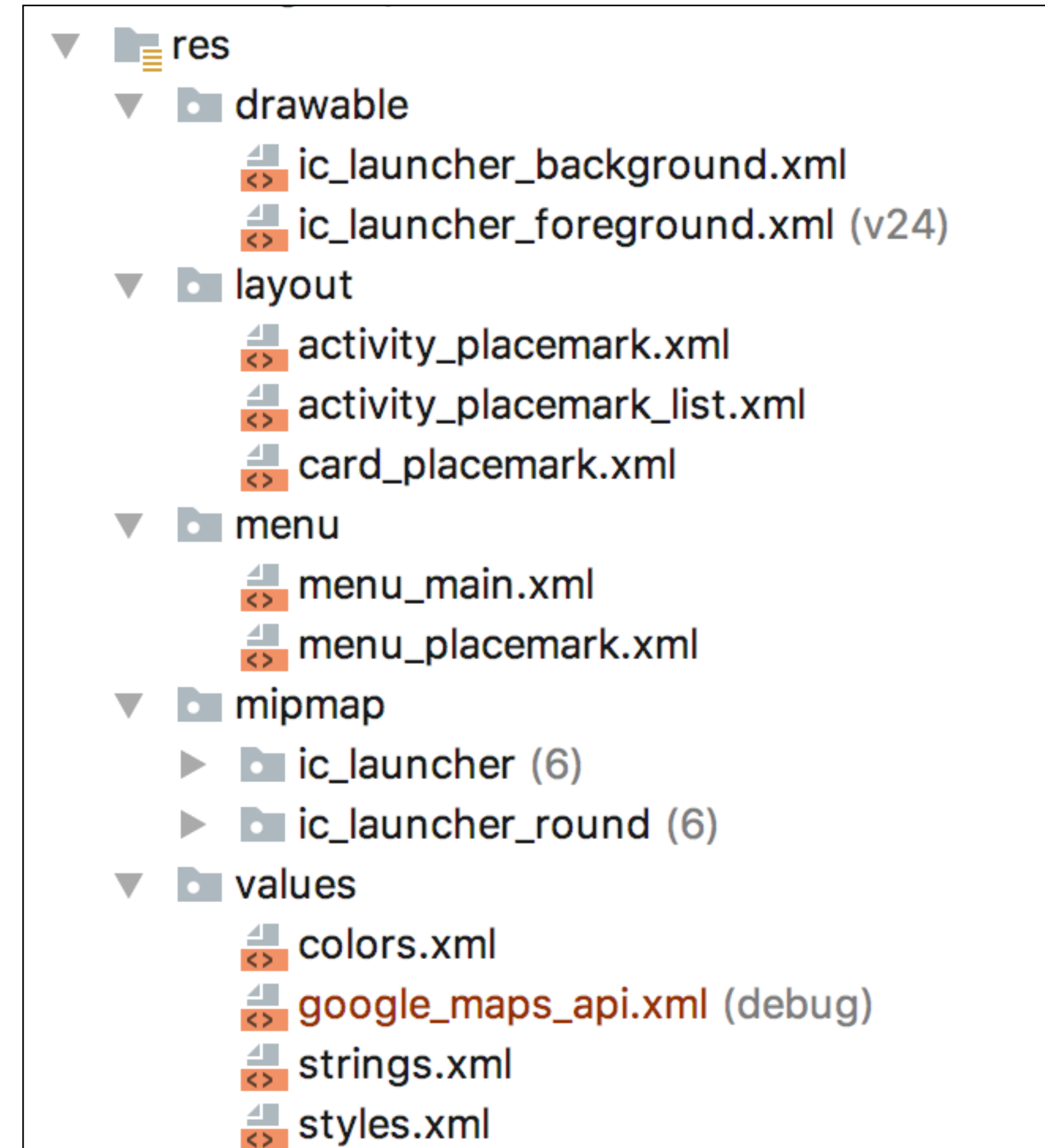


A general term for all layout, strings, bitmaps and other XML artefacts in an Android Project

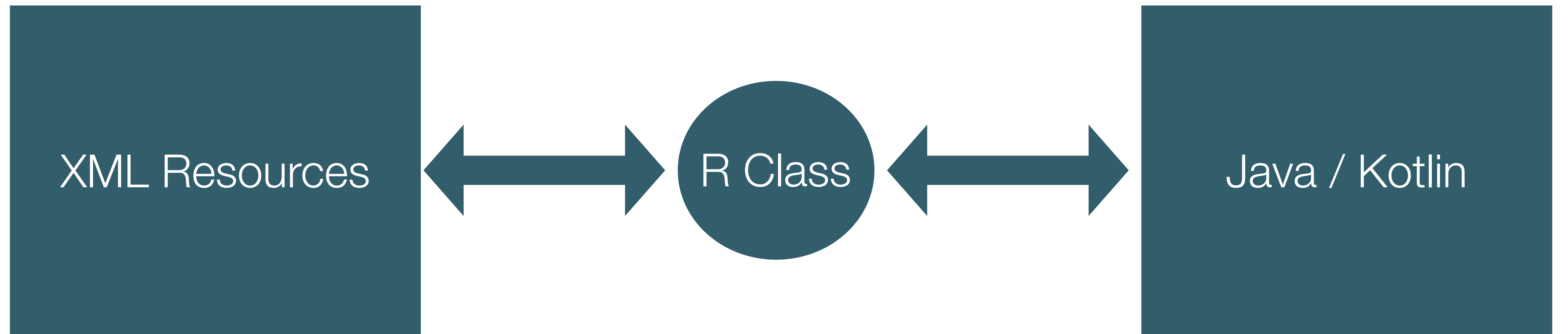
“Resources are the additional files and static content that your code uses, such as bitmaps, layout definitions, user interface strings, animation instructions, and more.”

“You should always externalize app resources such as images and strings from your code, so that you can maintain them independently”

“Once you externalize your app resources, you can access them using resource IDs that are generated in your project's R class”



<https://developer.android.com/guide/topics/resources/providing-resources>



Exercise 1: String Resources

In PlacemarkActivity - we have the following hard coded string:

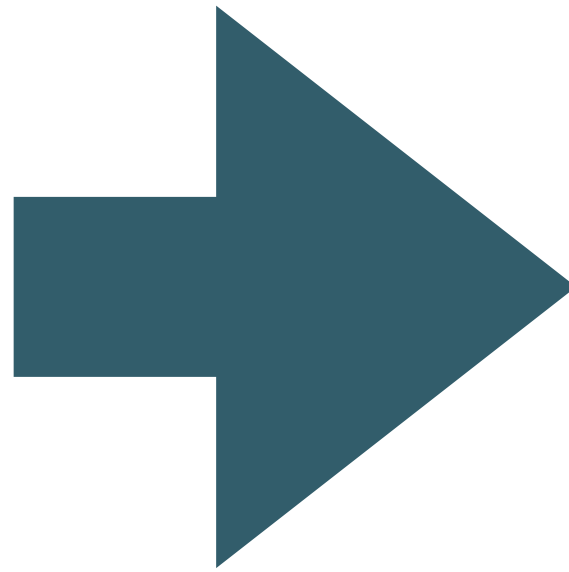
PlacemarkActivity

```
toast("Please Enter a title")
```

These strings should be in the strings.xml resource file. Move them in there, and figure out how to load the strings in PlacemarkActivity.

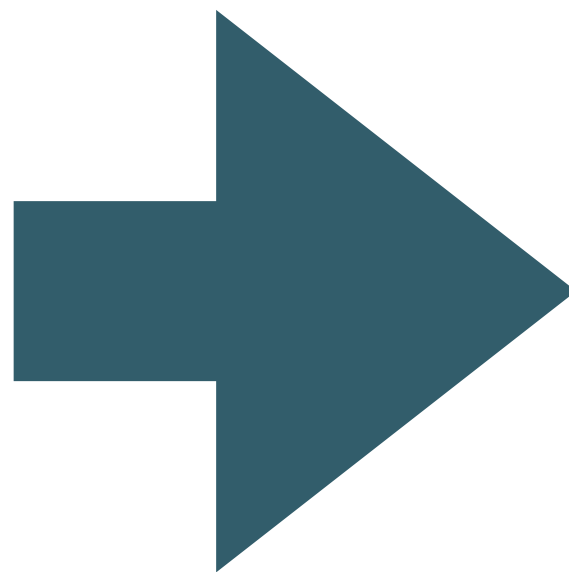
PlacemarkActivity

```
...  
    btnAdd.setText("Save Placemark")  
...  
    toast("Please Enter a title")
```



strings.xml

```
<resources>  
    <string name="app_name">Placemark</string>  
    <string name="hint_placemarkTitle">Placemark Title</string>  
    <string name="hint_placemarkDescription">Description </string>  
    <string name="button_addPlacemark">Add Placemark</string>  
    <string name="menu_addPlacemark">Add</string>  
    <string name="menu_cancelPlacemark">Cancel</string>  
    <string name="save_placemark"> Save Placemark </string>  
    <string name="enter_placemark_title"> Please enter a Placemark Title </string>  
  
</resources>
```



```
btnAdd.setText(R.string.save_placemark)
```

```
toast(R.string.enter_placemark_title)
```

strings.xml

```
<string name="enter_placemark_title"> Please enter a Placemark Title </string>
```

We can now rewrite the toast like this:

```
toast(R.string.enter_placemark_title)
```

```
btnAdd.setOnClickListener() { it: View!  
    placemark.title = placemarkTitle.text.toString()  
    placemark.description = description.text.toString()  
    if (placemark.title.isEmpty()) {  
        toast("Please enter a Placemark Title")  
    } else {  
        if (edit) {  
            app.placemarks.update(placemark.copy())  
        } else {  
            app.placemarks.create(placemark.copy())  
        }  
    }  
}
```



Studio will automatically show string value - unless you select it

```
btnAdd.setOnClickListener() { it: View!  
    placemark.title = placemarkTitle.text.toString()  
    placemark.description = description.text.toString()  
    if (placemark.title.isEmpty()) {  
        toast(R.string.enter_placemark_title)  
    } else {  
        if (edit) {  
            app.placemarks.update(placemark.copy())  
        } else {  
            app.placemarks.create(placemark.copy())  
        }  
    }  
}
```



```
toast(R.string.enter_placemark_title)
```

A class generated by android development tools

Maps ids defined in xml to Java/
Kotlin names

Generate class can be found in
build/generated/source/r

The R Class

```
package org.wit.placemark;

public final class R {
    public static final class anim {
        public static final int abc_fade_in=0x7f010000;
        public static final int abc_fade_out=0x7f010001;
        public static final int abc_grow_fade_in_from_bottom=0x7f010002;
        public static final int abc_popup_enter=0x7f010003;
        public static final int abc_popup_exit=0x7f010004;
        public static final int abc_shrink_fade_out_from_bottom=0x7f010005;
        public static final int abc_slide_in_bottom=0x7f010006;
        public static final int abc_slide_in_top=0x7f010007;
        public static final int abc_slide_out_bottom=0x7f010008;
        public static final int abc_slide_out_top=0x7f010009;
        public static final int abc_tooltip_enter=0x7f01000a;
        public static final int abc_tooltip_exit=0x7f01000b;
        public static final int design_bottom_sheet_slide_in=0x7f01000c;
        public static final int design_bottom_sheet_slide_out=0x7f01000d;
        public static final int design_snackbar_in=0x7f01000e;
        public static final int design_snackbar_out=0x7f01000f;
    }
    public static final class animator {
        public static final int design_appbar_state_list_animator=0x7f020000;
        public static final int design_fab_hide_motion_spec=0x7f020001;
        public static final int design_fab_show_motion_spec=0x7f020002;
        public static final int mtrl_btn_state_list_anim=0x7f020003;
        public static final int mtrl_btn_unelevated_state_list_anim=0x7f020004;
        public static final int mtrl_chip_state_list_anim=0x7f020005;
        public static final int mtrl_fab_hide_motion_spec=0x7f020006;
        public static final int mtrl_fab_show_motion_spec=0x7f020007;
```


Resource Types I

Animation Resources

Define pre-determined animations.

Tween animations are saved in `res/anim/` and accessed from the `R.anim` class.

Frame animations are saved in `res/drawable/` and accessed from the `R.drawable` class.

Color State List Resource

Define a color resources that changes based on the View state.

Saved in `res/color/` and accessed from the `R.color` class.

Drawable Resources

Define various graphics with bitmaps or XML.

Saved in `res/drawable/` and accessed from the `R.drawable` class.

Layout Resource

Define the layout for your application UI.

Saved in `res/layout/` and accessed from the `R.layout` class.

String Resources

Define strings, string arrays, and plurals (and include string formatting and styling).

Saved in `res/values/` and accessed from the `R.string`, `R.array`, and `R.plurals` classes.

Style Resource

Define the look and format for UI elements.

Saved in `res/values/` and accessed from the `R.style` class.

Font Resources

Define font families and include custom fonts in XML.

Saved in `res/font/` and accessed from the `R.font` class.

Placemark Resources

- ▼ res
 - ▼ drawable
 - ic_launcher_background.xml
 - ic_launcher_foreground.xml (v24)
 - ▼ layout
 - activity_placemark.xml
 - activity_placemark_list.xml
 - card_placemark.xml
 - ▼ menu
 - menu_main.xml
 - menu_placemark.xml
 - ▼ mipmap
 - ▼ ic_launcher (6)
 - ic_launcher.png (hdpi)
 - ic_launcher.png (mdpi)
 - ic_launcher.png (xhdpi)
 - ic_launcher.png (xxhdpi)
 - ic_launcher.png (xxxhdpi)
 - ic_launcher.xml (anydpi-v26)
 - ▼ ic_launcher_round (6)
 - ic_launcher_round.png (hdpi)
 - ic_launcher_round.png (mdpi)
 - ic_launcher_round.png (xhdpi)
 - ic_launcher_round.png (xxhdpi)
 - ic_launcher_round.png (xxxhdpi)
 - ic_launcher_round.xml (anydpi-v26)
 - ▼ values
 - colors.xml
 - strings.xml
 - styles.xml