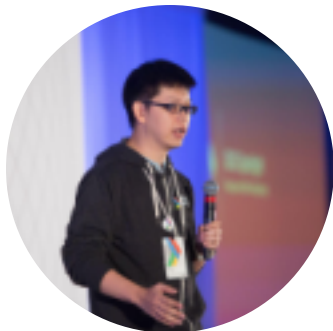




DevFest

What is new in Android



Fung Lam, GDG Hong Kong





DRM Info

Android Fung Tools

3+

Contains Ads

★★★★★ 484

Add to Wishlist

Install

REVIEWS

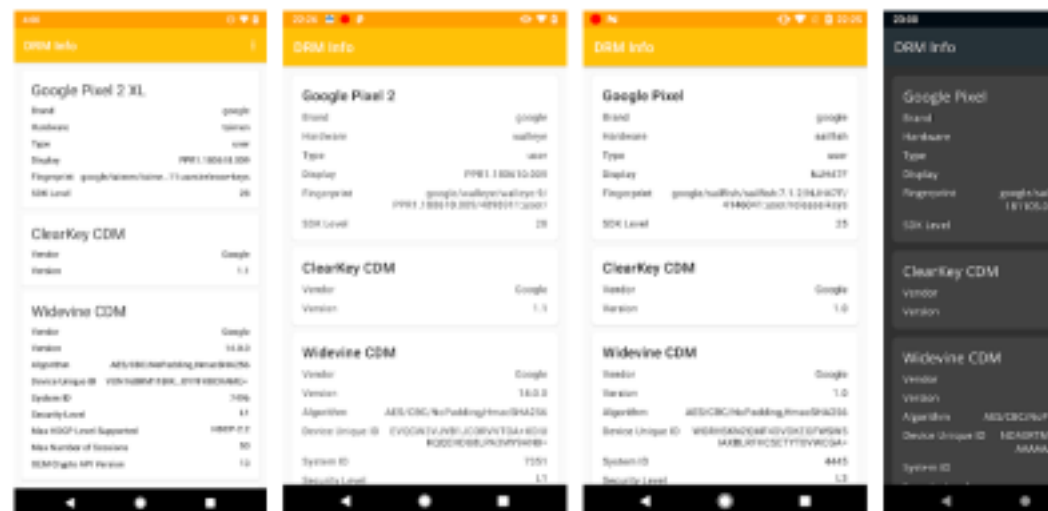
4.7



484 total



Review Policy



DRM Info

Free Tools (Applications)

Create Alert

Open in Google Play

Daily Ranks

Save

Subscribe & Share

Ranks

Highest Ranks

	Overall	Applications	Video Players & Editors (Applications)	Tools (Applications)
# of countries - rank 100 reached	0	0	0	8
# of countries - rank 500 reached	1	5	13	51
# of countries - rank 1000 reached	1	5	17	52



Stable 穩定



Android SDK

Activity | Android Developers

https://developer.android.com/reference/android/app/Activity

Developers Platform Android Studio Google Play Android Jetpack Docs News

Documentation

OVERVIEW GUIDES REFERENCE SAMPLES DESIGN & QUALITY

Activity

added in API level 1

[view source](#)

```
public class Activity
extends ContextThemeWrapper implements LayoutInflater.Factory2, Window.Callback,
KeyEvent.Callback, View.OnCreateContextMenuListener, ComponentCallbacks2

java.lang.Object
├── android.content.Context
│   ├── android.content.ContextWrapper
│       ├── android.view.ContextThemeWrapper
│           └── android.app.Activity
```

Known direct subclasses
[AccountAuthenticatorActivity](#), [ActivityGroup](#), [AliasActivity](#), [ExpandableListActivity](#), [ListActivity](#), [NativeActivity](#)

Known indirect subclasses
[LauncherActivity](#), [PreferenceActivity](#), [TabActivity](#)

Contents

- Developer Guides
- Fragments
- Activity Lifecycle
- Configuration Changes
- Starting Activities and Getting Results
- Saving Persistent State
- Permissions
- Process Lifecycle
- Summary
 - Constants
 - Inherited constants
 - Fields
 - Public constructors
 - Public methods
 - Protected methods
 - Inherited methods

AOSP

Git repositories on android

Name	Description
accessories/manifest	
api_council_filter	Parent for API additions that requires Android API Council approval. OBSOLETE: API-Review is now defined in A...
assets/android-studio-ux-assets	Bug: 32992167
brillo/manifest	
cts_drno_filter	Parent project for CTS projects that requires Dr.No +2's.
device/aaeon/upboard	
device/asus/deb	
device/asus/flo	
device/asus/flo-kernel	
device/asus/fugu	
device/asus/fugu-kernel	
device/asus/grouper	Files specific to Nexus 7
device/asus/tilapia	
device/casio/koi-uboot	
device/common	
device/freescale/picoimx	b/26753464
device/generic/arm64	
device/generic/armv7-a	
device/generic/armv7-a-neon	
device/generic/art	



AOSP - Android SDK = Hidden API

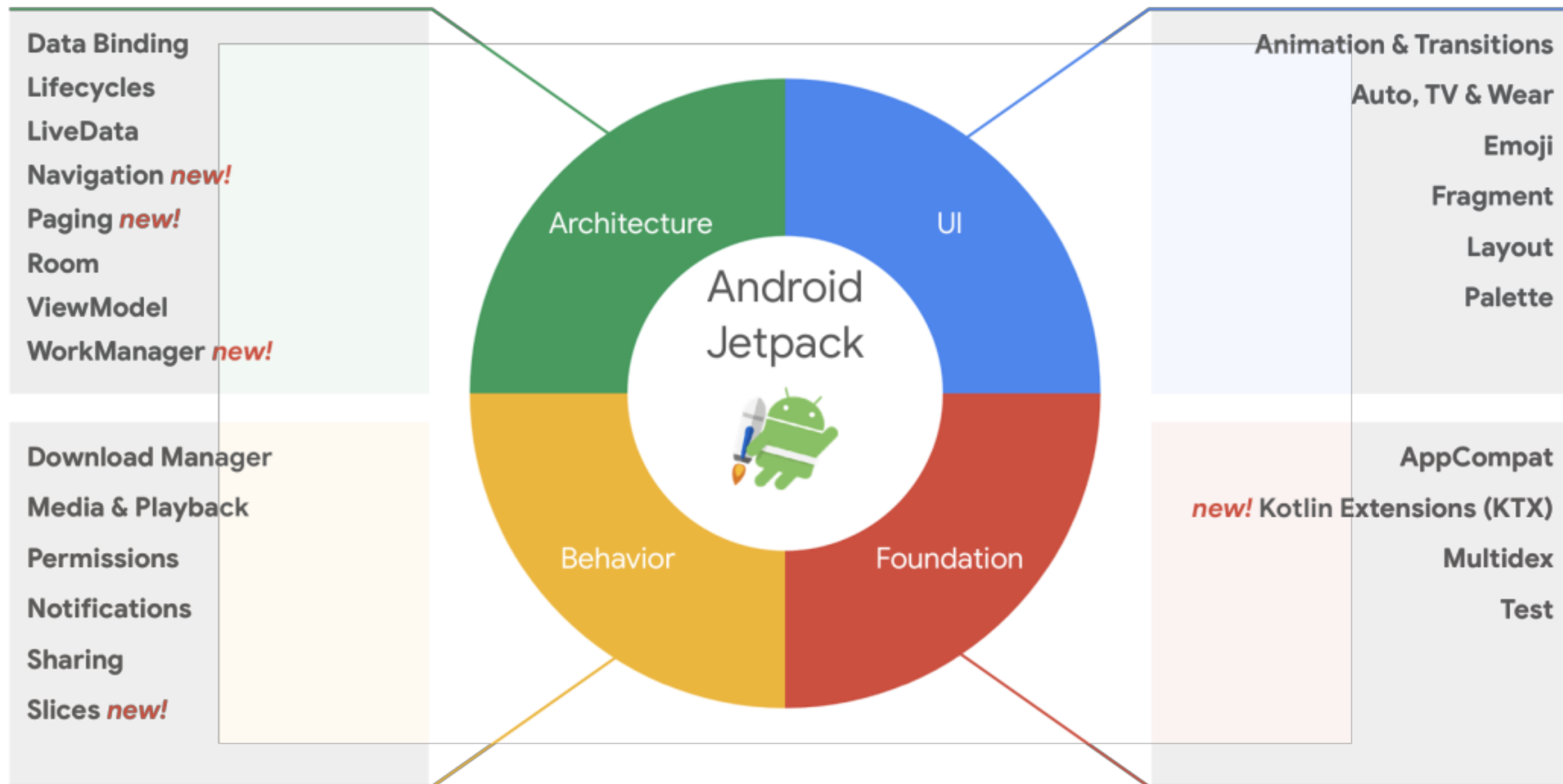
不打算給你用
不保證兼容
不是黑科技
不要碰它



Android Jetpack

Accelerate App Development





Jetpack Architecture

Lifecycle

Lifecycle Aware Components

Room

SQLite object mapping

ViewModel

View data decoupled from OS lifecycle

LiveData

Lifecycle aware observables

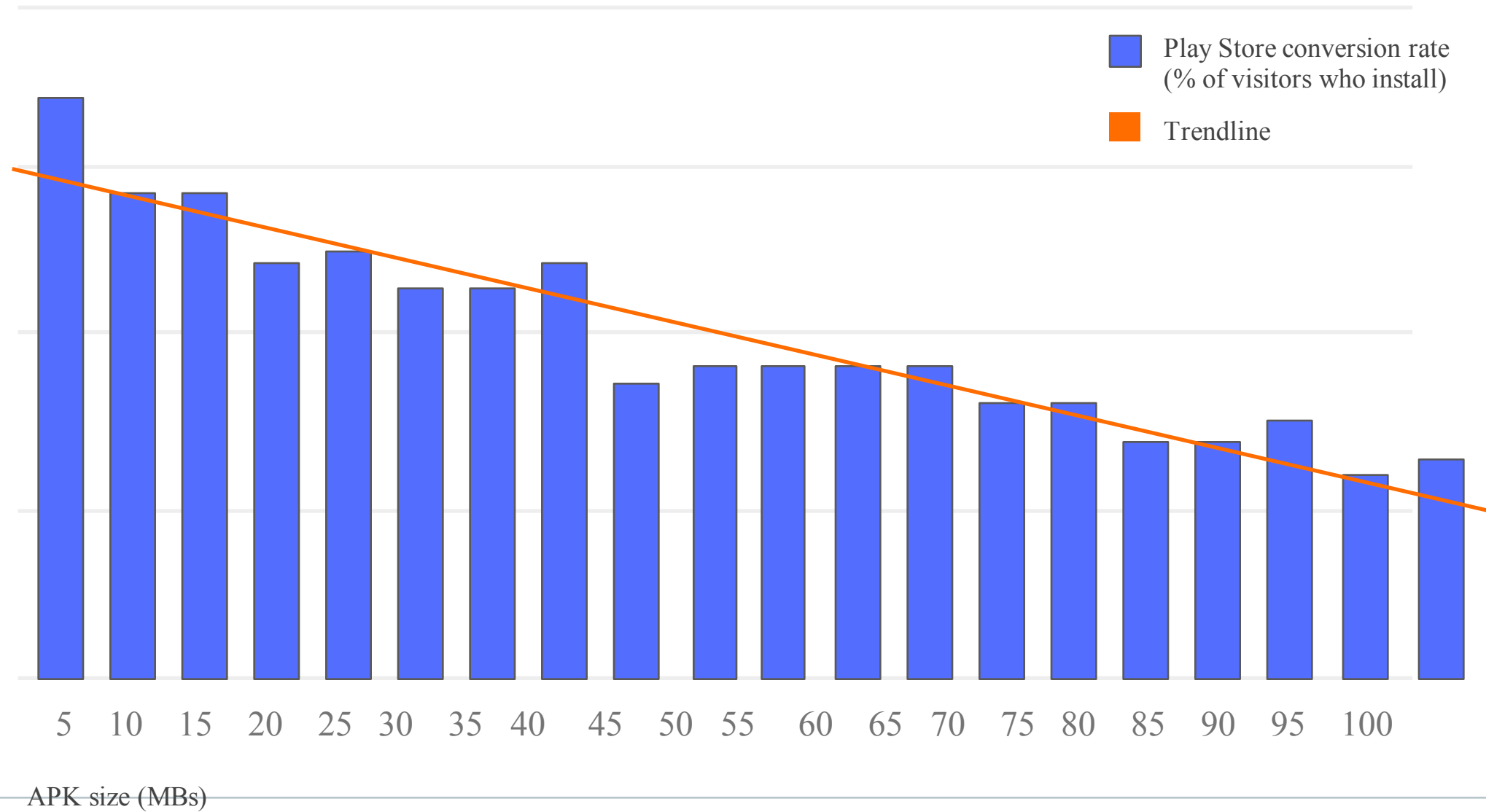
Paging (1.0!)

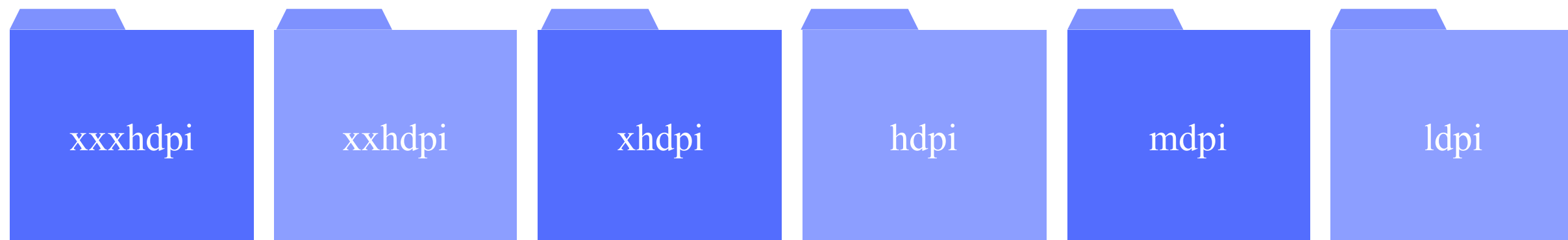
Asynchronous data retrieval

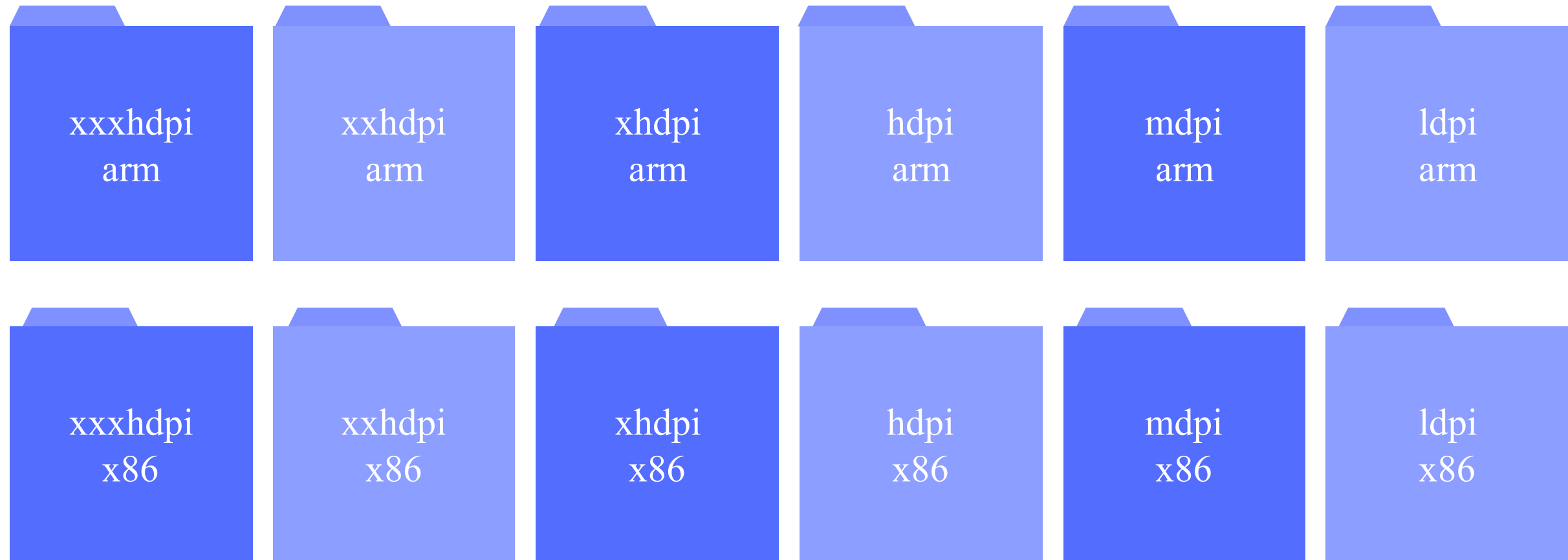
Size 大小

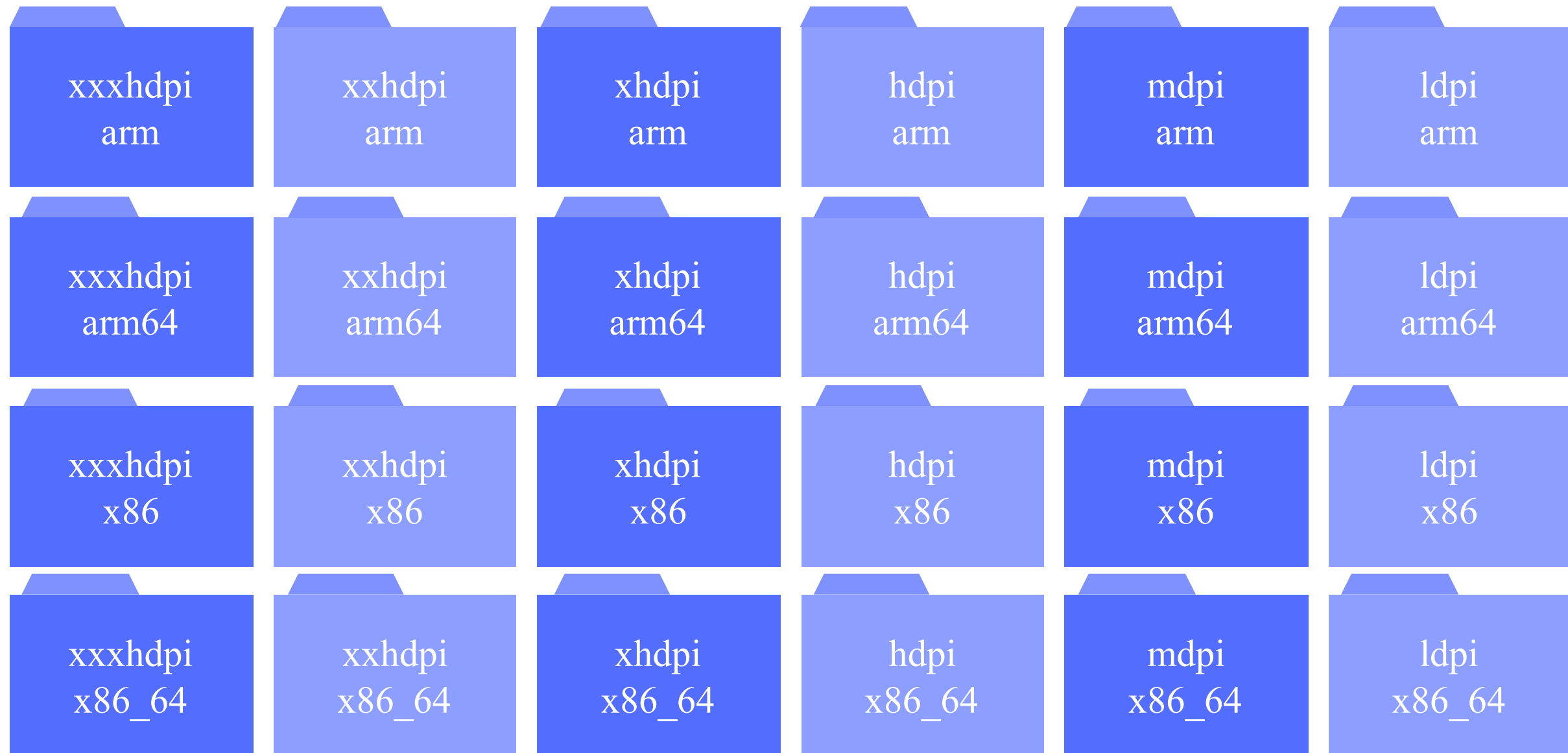


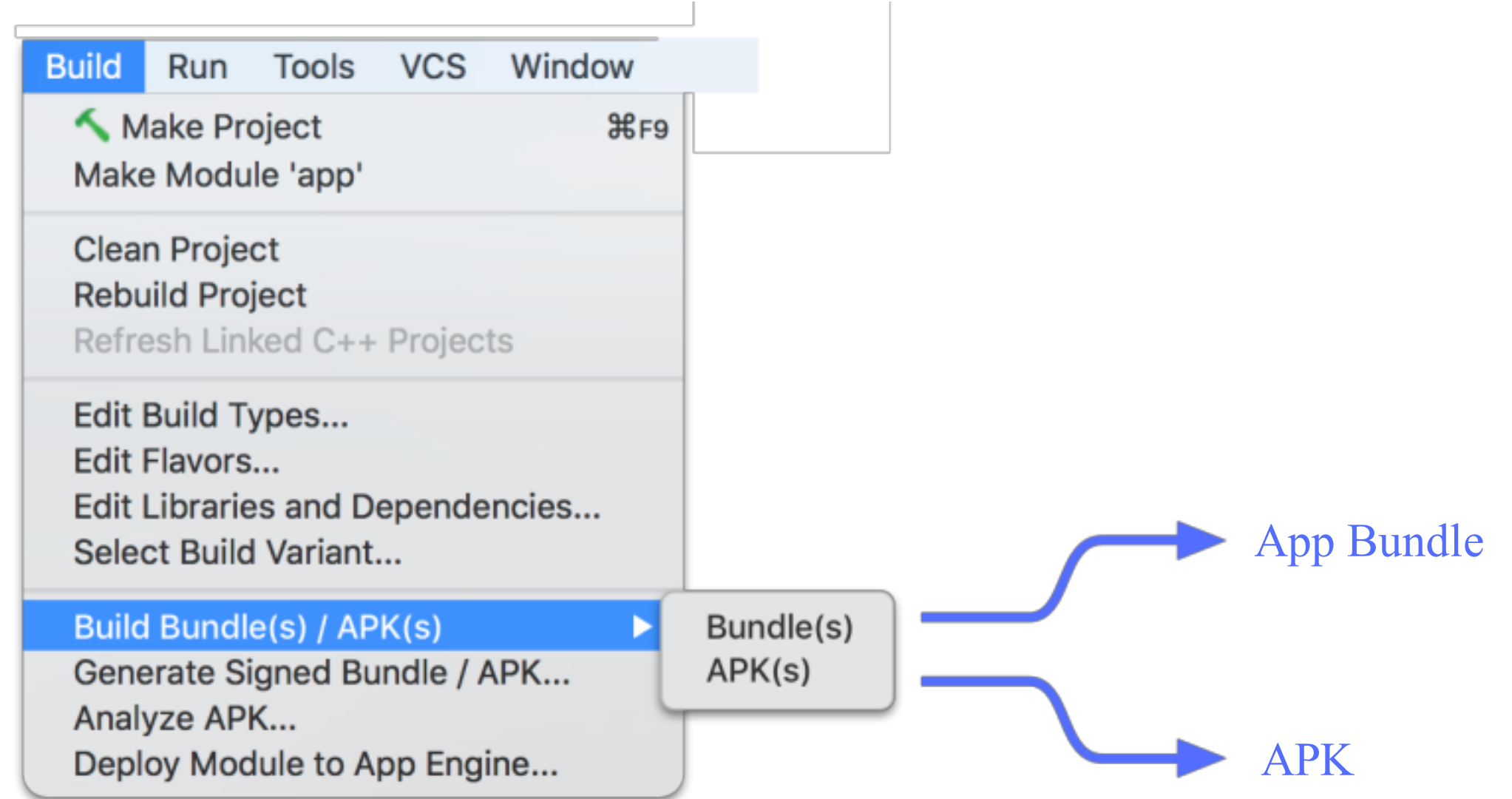
Conversion rate decreases as apps get larger











base.apk



config_xxxhdpi.apk

/res/xxxhdpi

config_xhdpi.apk

/res/xhdpi

config_mhdpi.apk

/res/mhdpi

config_xxxhdpi.apk

/res/xxhdpi

config_hdpi.apk

/res/hdpi

config_ldpi.apk

/res/ldpi

config_x86.apk

/lib/x86

config_arm.apk

/lib/arm

config_en.apk

/res/values-en

config_fr.apk

/res/values-fr

config_es.apk

/res/values-es

...

File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

1042-com.letv.app.appstore-乐视应用商店-com.letv.app.appstore-tencent

1042-com.letv.app.appstore-乐视应用商店-com.letv.app.appstore-tencent.apk

Libraries (*.so) in the APK are missing debug symbols
unknown (version unknown)
APK size: 7.3 MB, Download Size: 6.7 MB

File	Raw File Size	Download Size	% of Total Download size
res	3.5 MB	3.4 MB	49.8%
drawable-xhdpi-v4	3 MB	2.9 MB	43.3%
guide_night_bg.png	315.4 KB	314 KB	4.5%
guide_noon_bg.png	313.2 KB	313 KB	4.5%
guide_morning_bg.png	301.3 KB	301.2 KB	4.4%
guide_eve_bg.png	271.8 KB	269.8 KB	3.9%
user_top_bg.png	183.5 KB	183.5 KB	2.7%
guide_four.png	183 KB	181.6 KB	2.6%
guide_three.png	161.9 KB	160.1 KB	2.3%
guide_one.png	140.4 KB	139.3 KB	2%
guide_two.png	101.4 KB	99.6 KB	1.4%
logo.jpg	62.7 KB	44.1 KB	0.6%
icon_app_no_update.png	36 KB	35.8 KB	0.5%
msg_notext.png	33.7 KB	33.5 KB	0.5%
pic_nonet.png	32 KB	31.9 KB	0.5%
manager_no_fav_icon.png	31.9 KB	31.7 KB	0.5%
icon_no_collection.png	31.9 KB	31.7 KB	0.5%
no_result_icon.png	31.7 KB	31.6 KB	0.5%

1,080x378 PNG (32-bit color) 183.50 KB

Logcat Terminal TODO

APK size: 7.3 MB, Download Size: 6.7 MB

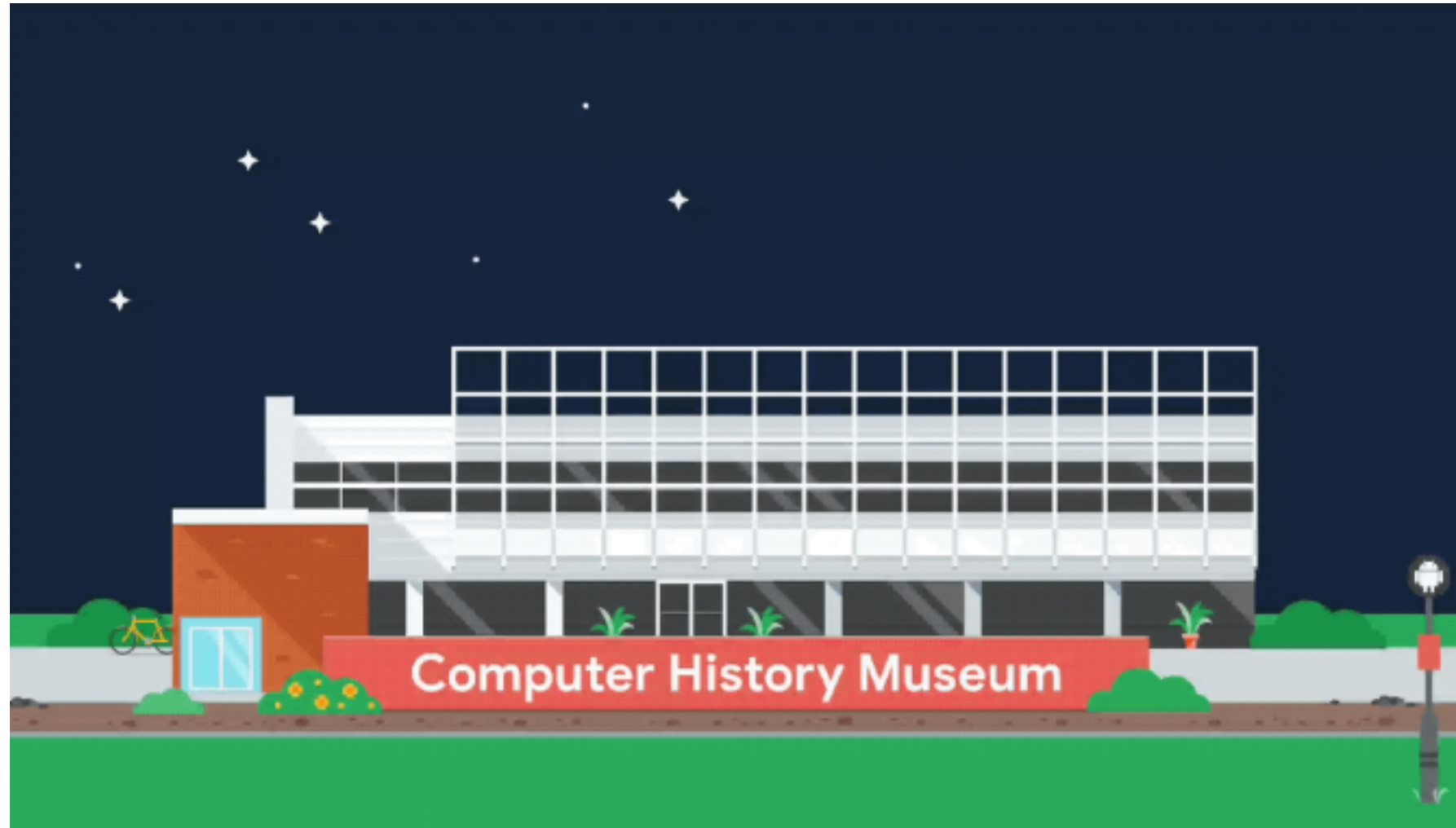
File	Raw File Size	Download Size	% of Total Download size
res	3.5 MB	3.4 MB	49.8%
drawable-xhdpi-v4	3 MB	2.9 MB	43.3%
layout	155.8 KB	154.2 KB	2.2%
drawable-hdpi-v4	109 KB	99.9 KB	1.4%
drawable-xhdpi-v4	82 KB	76.7 KB	1.1%
drawable	52.2 KB	52.2 KB	0.8%
drawable-mdpi-v4	37.5 KB	37.1 KB	0.5%
drawable-ldpi-v4	19.5 KB	19.1 KB	0.3%
color	5.5 KB	5.5 KB	0.1%
anim	3.5 KB	3.5 KB	0.1%
menu	498 B	498 B	0%
classes.dex	1.5 MB	1.5 MB	22.9%
assets	1.1 MB	1.1 MB	16.3%
lib	505 KB	504.2 KB	7.3%

VectorDrawables

```
<!-- res/drawable/battery_charging.xml -->
<vector
  xmlns:android="http://schemas.android.com/apk/res/android"
  android:height="24dp"
  android:width="24dp"
  android:viewportWidth="24.0"
  android:viewportHeight="24.0">
  <group
    android:name="rotationGroup"
    android:pivotX="10.0"
    android:pivotY="10.0"
    android:rotation="15.0">
    <path
      android:name="vect"
      android:fillColor="#FF000000"
      android:pathData="M15.67,4H14V2h-4v2H8.33C7.6,4 7,4.6 7,5.33V9h4.93L13,7v2h4V5.33C17,4.6 16.4,4 15.67,4z"
      android:fillAlpha=".3"/>
    <path
      android:name="draw"
      android:fillColor="#FF000000"
      android:pathData="M13,12.5h2L11,20v-5.5H9L11.93,9H7v11.67C7,21.4 7.6,22 8.33,22h7.33c0.74,0 1.34,-0.6 1.34,-1.33V9h-4v3.5z"/>
    </group>
  </vector>
```



VectorDrawables



From: <https://medium.com/androiddevelopers/understanding-androids-vector-image-format-vectordrawable-ab09e41d5c68>



File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help

cn.com.hsbc.hsbcchina_2.16.1_21601

cn.com.hsbc.hsbcchina_2.16.1_21601.apk

Libraries (*.so) in the APK are missing debug symbols

cn.com.hsbc.hsbcchina (version 2.16.1)

APK size: 59.1 MB, Download Size: 55.9 MB

Compare with previous APK...

File	Raw File Size	Download Size	% of Total Download size
assets	22.7 MB	21.8 MB	38.7%
pack	21.9 MB	21.1 MB	37.4%
prd_mobile_prod_js.zip	12.2 MB	11.7 MB	20.7%
prd_mobile_prod_js2.zip	9.5 MB	9.3 MB	16.5%
dist_new	9.3 MB	9.4 MB	16.7%
resources	6.1 MB	6.1 MB	10.8%
assets	1.8 MB	1.8 MB	3.3%
main.5ebfd73c50a955de0b7c.bundle.js	224.1 KB	229.8 KB	0.4%
144a4c973a9ab99110101c11cd21381c.png	142.1 KB	142 KB	0.2%
d5ac30bbb81f7499eb1267d6fbf3265.png	92.5 KB	92.6 KB	0.2%
ea6d921c921aa333d5c0dec734284df5.png	83.7 KB	83.7 KB	0.1%
common.1934aa46a8781be0781d.chunk.js	80.6 KB	81.7 KB	0.1%
de1257efa4270f2808fd9cdfc2d3a257.png	78.3 KB	78.3 KB	0.1%
1.e63140e39ee2ba46e17f.chunk.js	74.3 KB	77.7 KB	0.1%
17e37e4acb948ab503286c771c34f88c.png	76 KB	75.9 KB	0.1%
5ea7ba364e5f3279d9fe889eb48264e.png	72.3 KB	72.2 KB	0.1%
aa1f8b2027eb1ec78bbf009e847f08c7.png	45.6 KB	45.5 KB	0.1%
e5360b30ca7241fd321eda76f3a6591a.png	23 KB	23.1 KB	0%

690x222 PNG (32-bit color) 142.50 KB

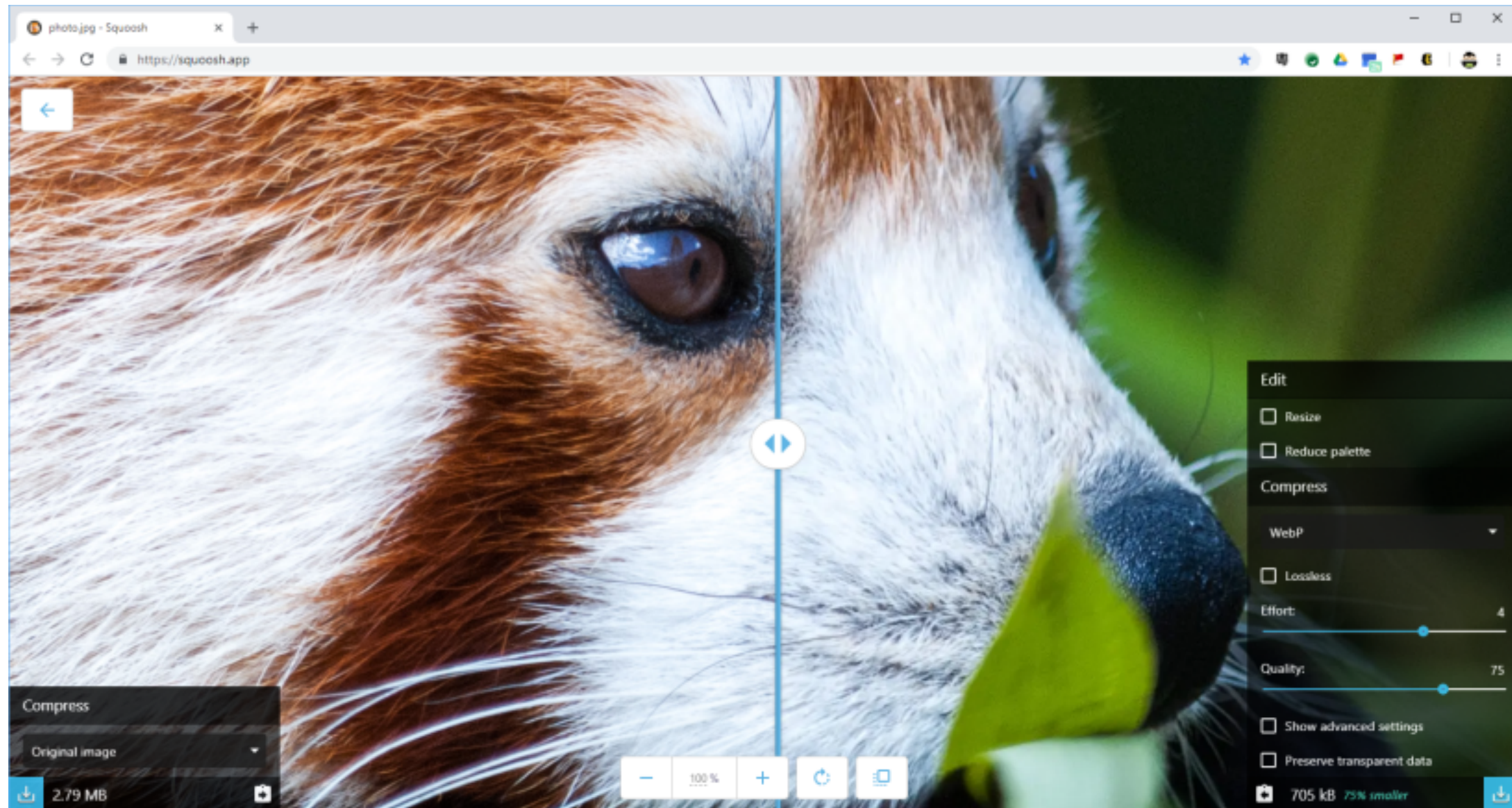
Device File Explorer

Logcat Terminal TODO

Event Log

Context: <no context>

squoosh.app



Speed 速度





天下武功
無堅不破，唯快不破

Still WebViews?

Rendering Layout

- Native + FlatBuffers
- Native + JSON / XML
- WebView + HTML + JS + CSS + Images +

單一頁面需要多少次 TCP 三向交握 (3-way handshaking) ?



RAM!?

	Pixel 1 / 2 / 3	Mi Mix 1 / 2 / 3
2016	4GB	6GB
2017	4GB	8GB
2018	4GB	10GB

10GB!?

Why do we need so many RAM?

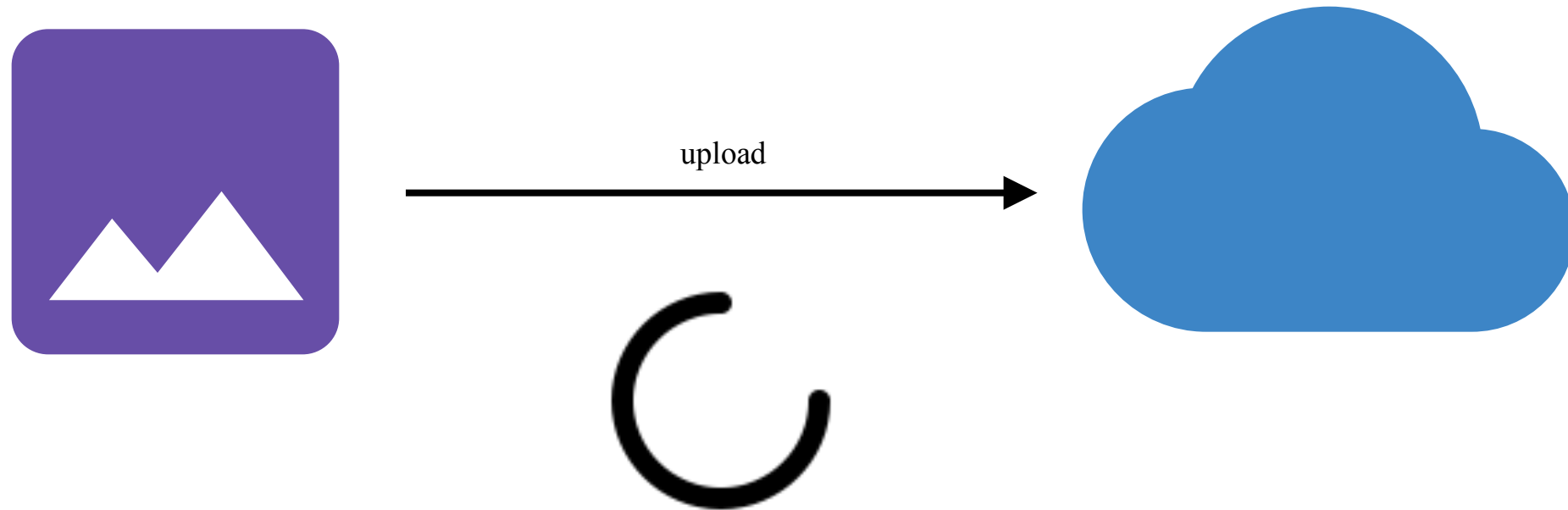


WorkManager

If your app is not running, WorkManager chooses an appropriate way to schedule a background task--depending on the device API level and included dependencies, WorkManager might use JobScheduler, Firebase JobDispatcher, or AlarmManager.



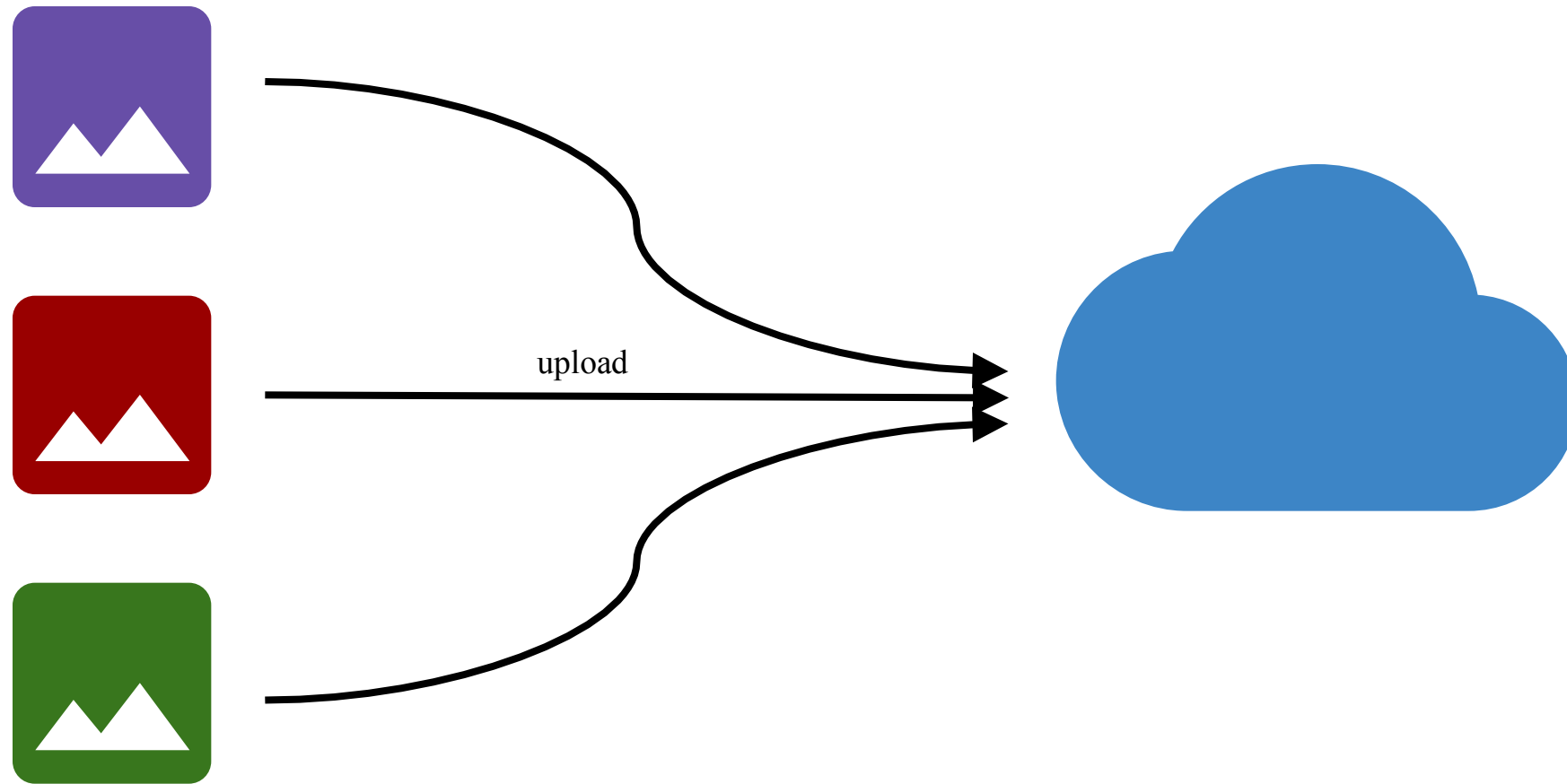
Show Progress



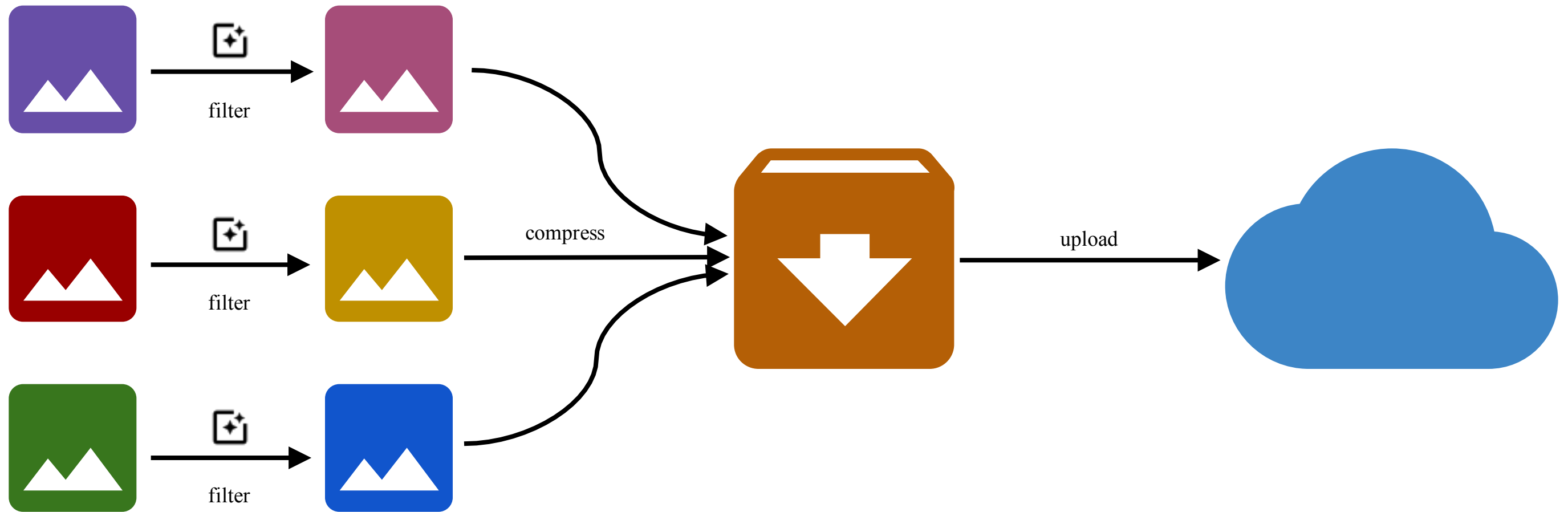
Chain Work



Parallel Work



Complex Flows



Screen 螢幕



Screen

- 4:3 to 16:9 to 2:1 to ... larger and longer 全面屏
// Bottom Navigation
- Rounded Corner 圓角屏
// Design Guideline - Margins!!! 保持距離
- Display Cut-out 劉海 / 水滴
// Testing, Testing and Testing 測試 測試 測試





android support for Foldables



Foldable Screen 可摺式

- Screen Size \neq Window Size
- Not fixed orientation
- Resizable Activity



Target SDK Level Requirement

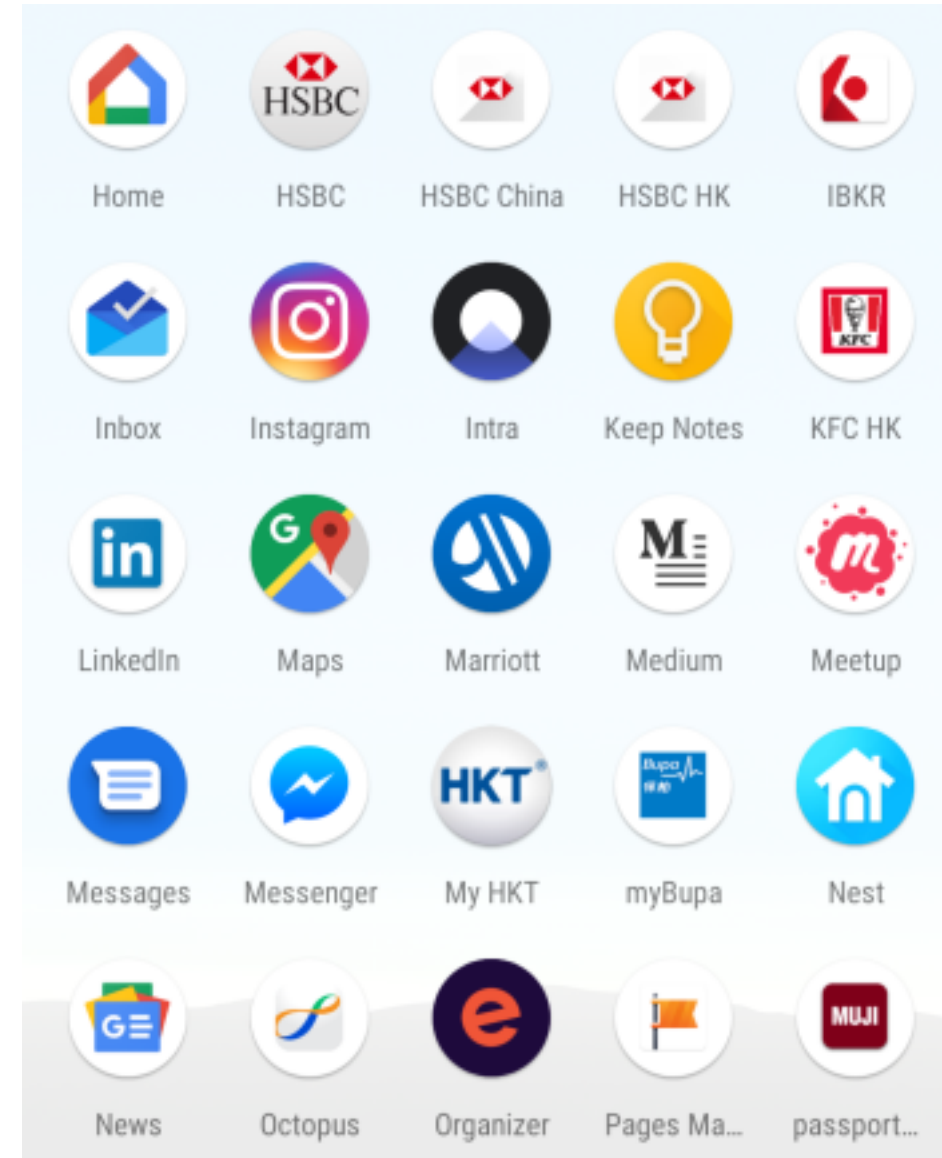
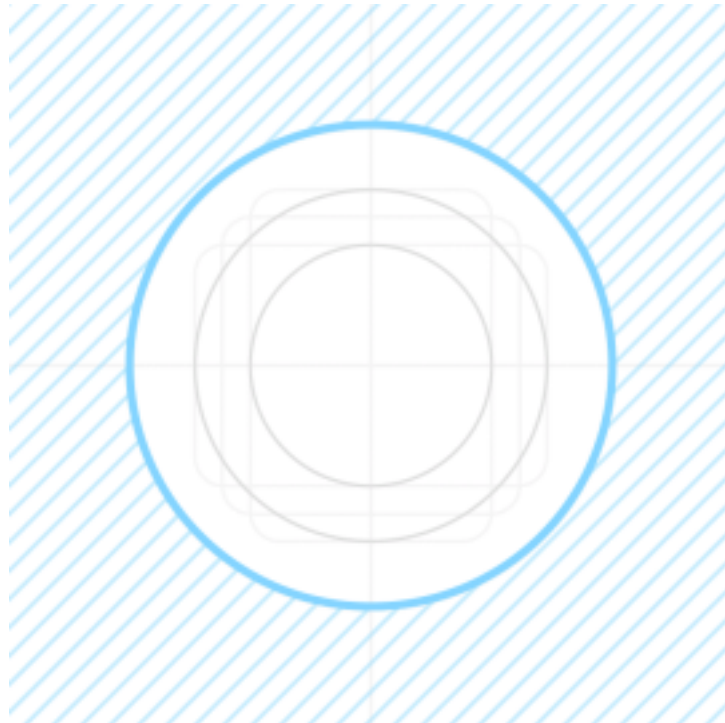
- `targetSdk >= 26`
- Google Play
 - New App: Aug-2018
 - App Update: Nov-2018
- Major App Market in CN
 - New App: May-2019
 - App Update: Aug-2019



Stand Out 突出



Adaptive App Icon



Questions?

Github: [seventhmoon](#)

Google Play: [j.mp/androidfung](#)

