

Introduction aux outils *Android*

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SYM – Systèmes mobiles

SDK Android

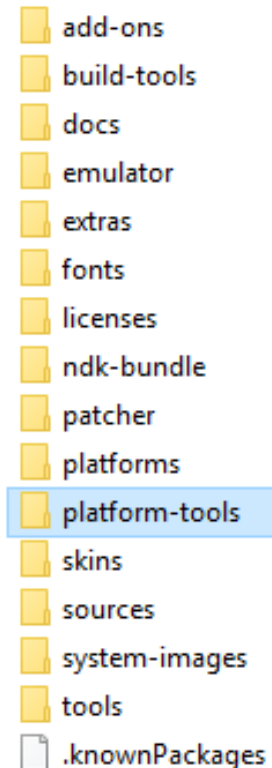
- *Un IDE officiel: Android Studio*
<https://developer.android.com/studio/index.html>
 - Remplace *Eclipse* depuis 2015
 - Basé sur *IntelliJ* Community Edition
 - Licence Apache 2
- *API Java*
- *Une collection d'outils en lignes de commande (ex: ADB)*
- *Un émulateur*

SDK Android

Outils CLI

- Disponibles dans le dossier AndroidSDK
`C:\Users\[account]\AppData\Local\Android\sdk`
`C:\AndroidSDK`
- Il est conseillé d'ajouter le dossier `platform-tools` à votre PATH
- L'outil principal est Android Debug Bridge (ADB), il permet aux développeurs (et aux autres outils de l'écosystème Android) de communiquer avec les devices

```
PS C:\Users\fdutoit> adb devices
List of devices attached
emulator-5554    device
0258d29d8532c2b7    device
```



SDK Android - ADB

`adb devices`

Permet de lister les périphériques connectés

`adb install -r /path/to/the.apk`

Permet d'installer une application

`adb uninstall your.application.package`

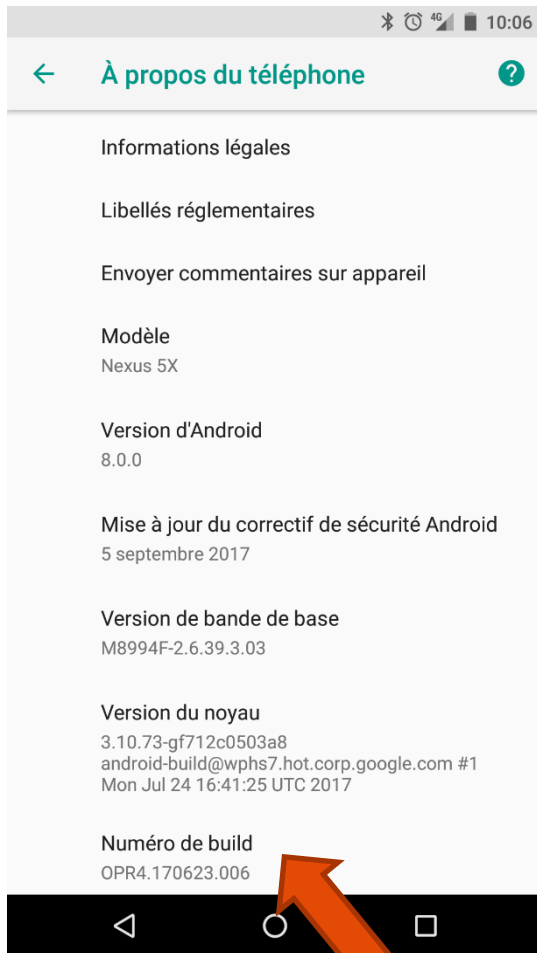
Permet de désinstaller une application (par package)

`adb push local.png /path/device.png`

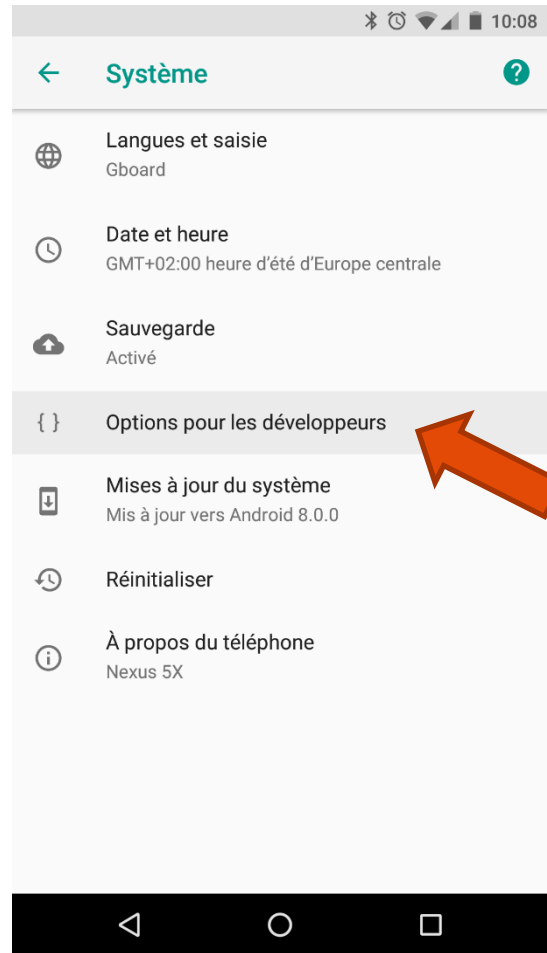
Permet de copier un fichier sur le device

`adb help` – *Et beaucoup d'autres fonctionnalités*

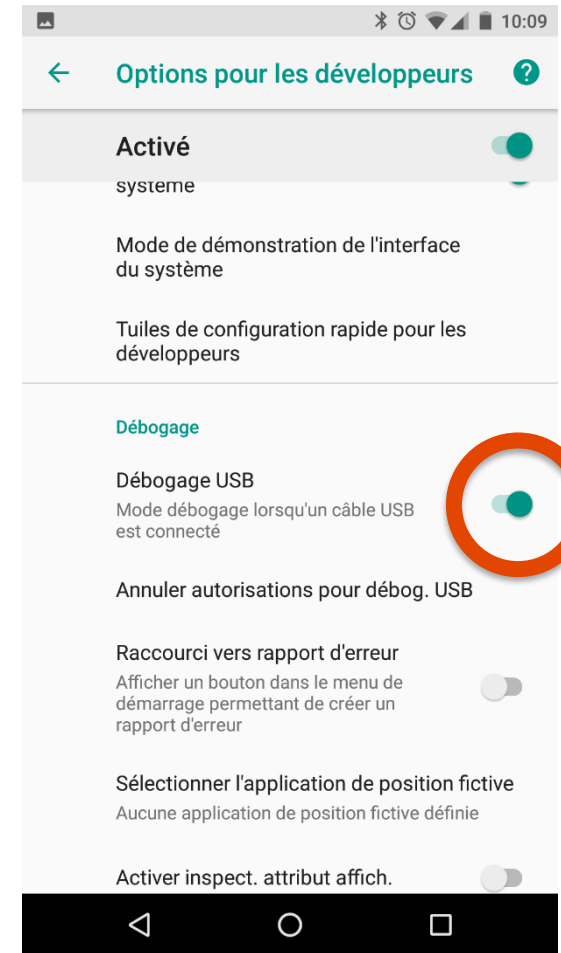
Activer le mode développeur



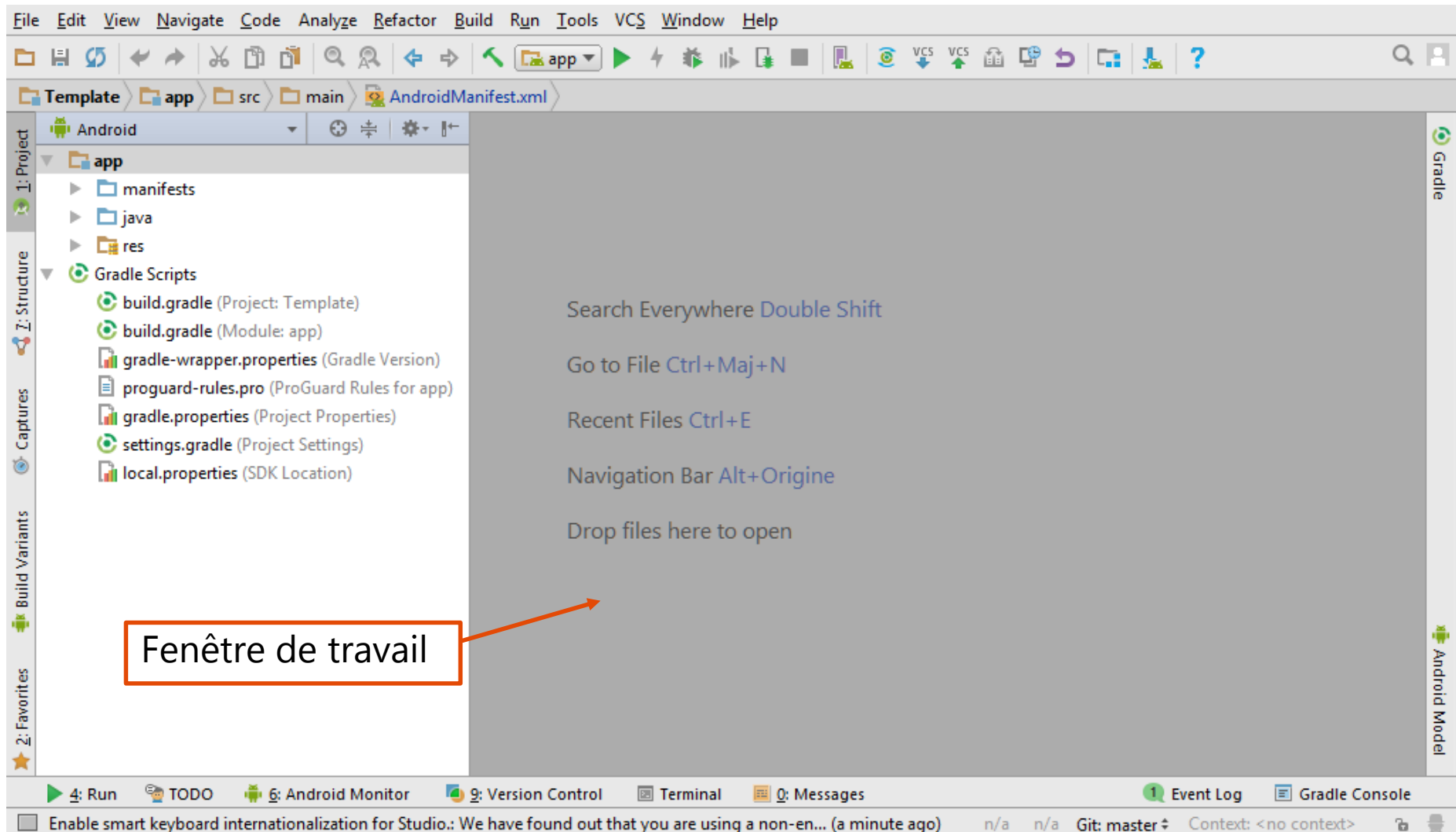
Tapoter 5-6 fois



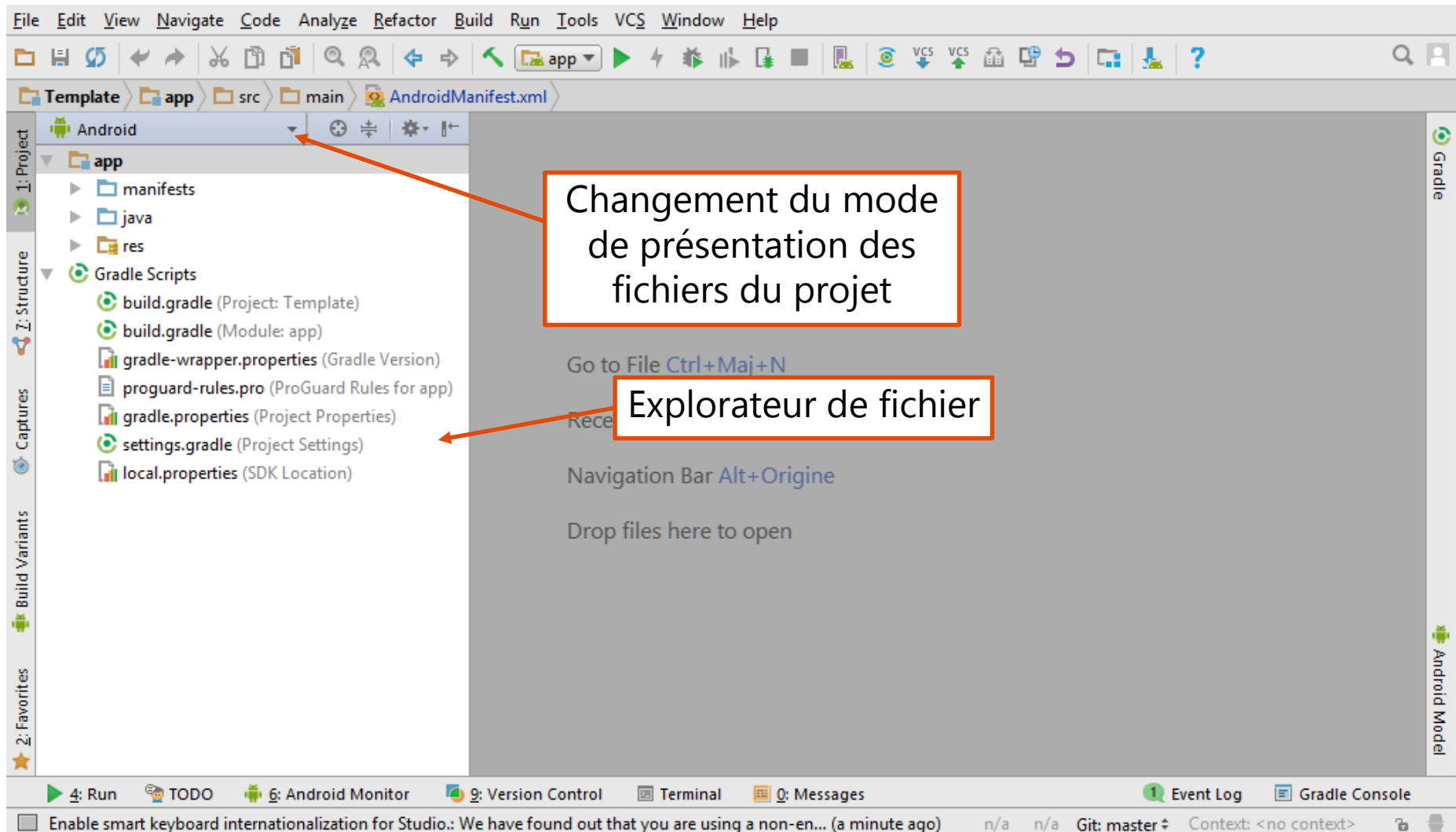
Le menu options pour les développeurs apparaît



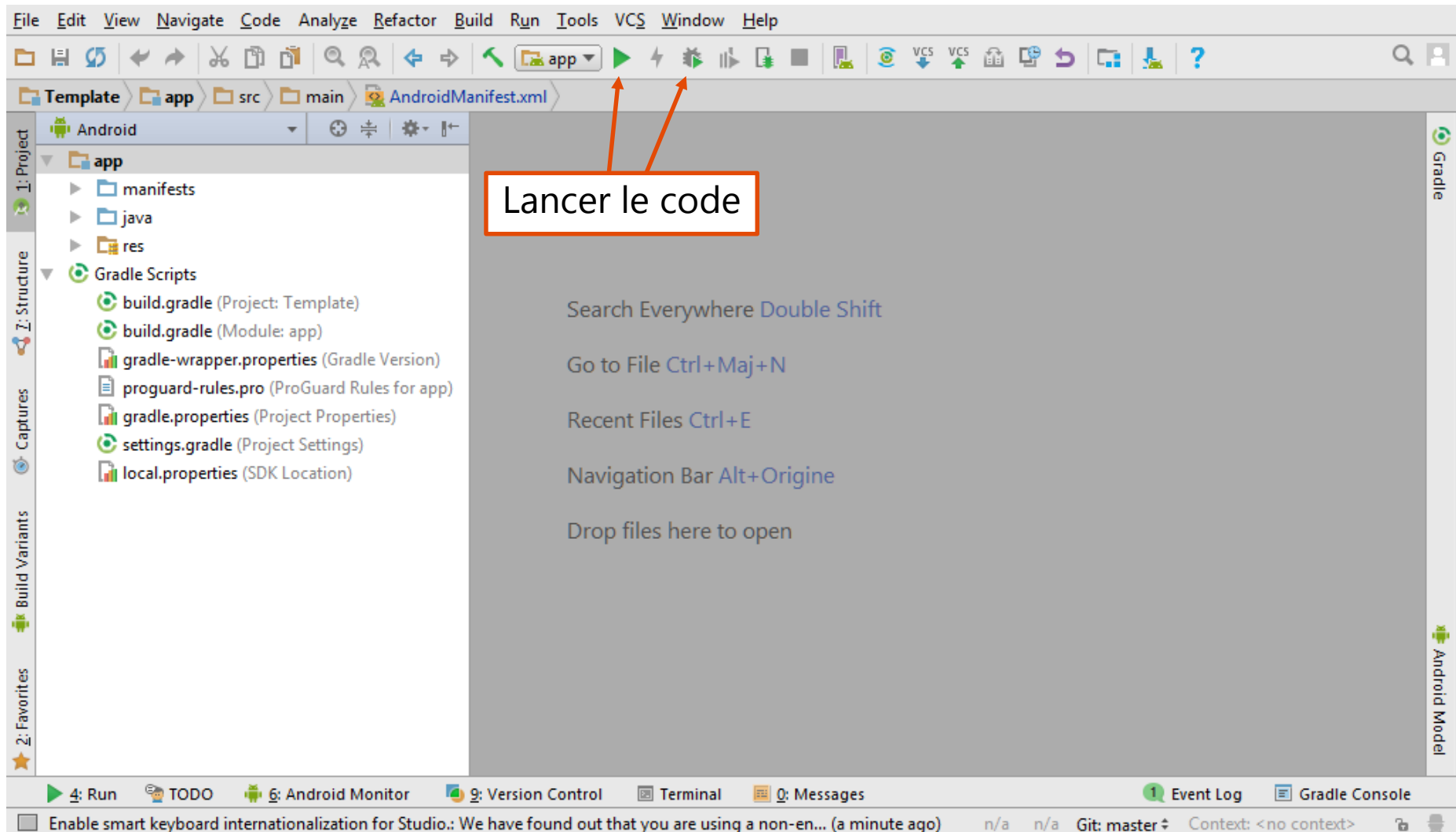
Android Studio



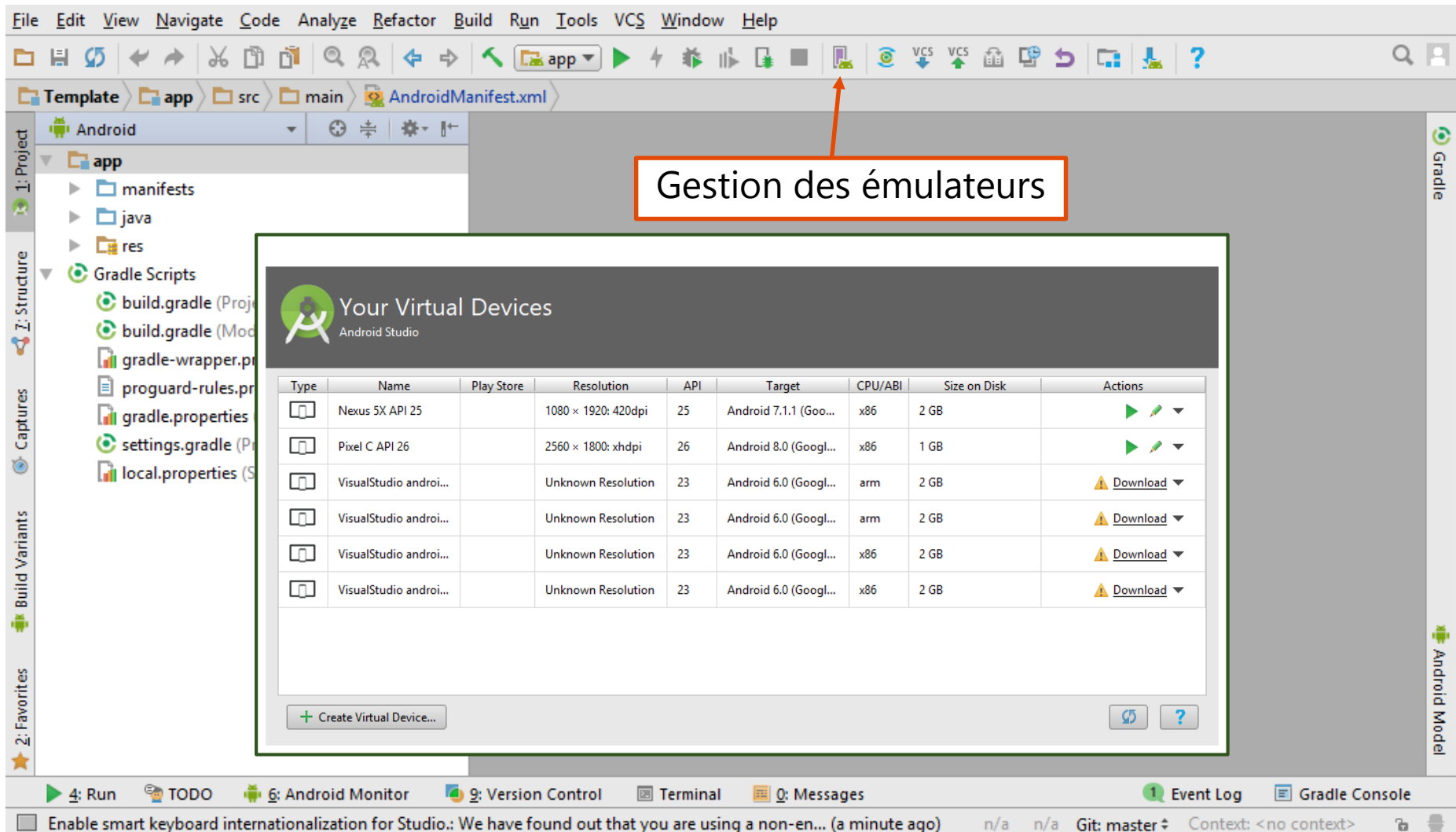
Android Studio



Android Studio



Android Studio

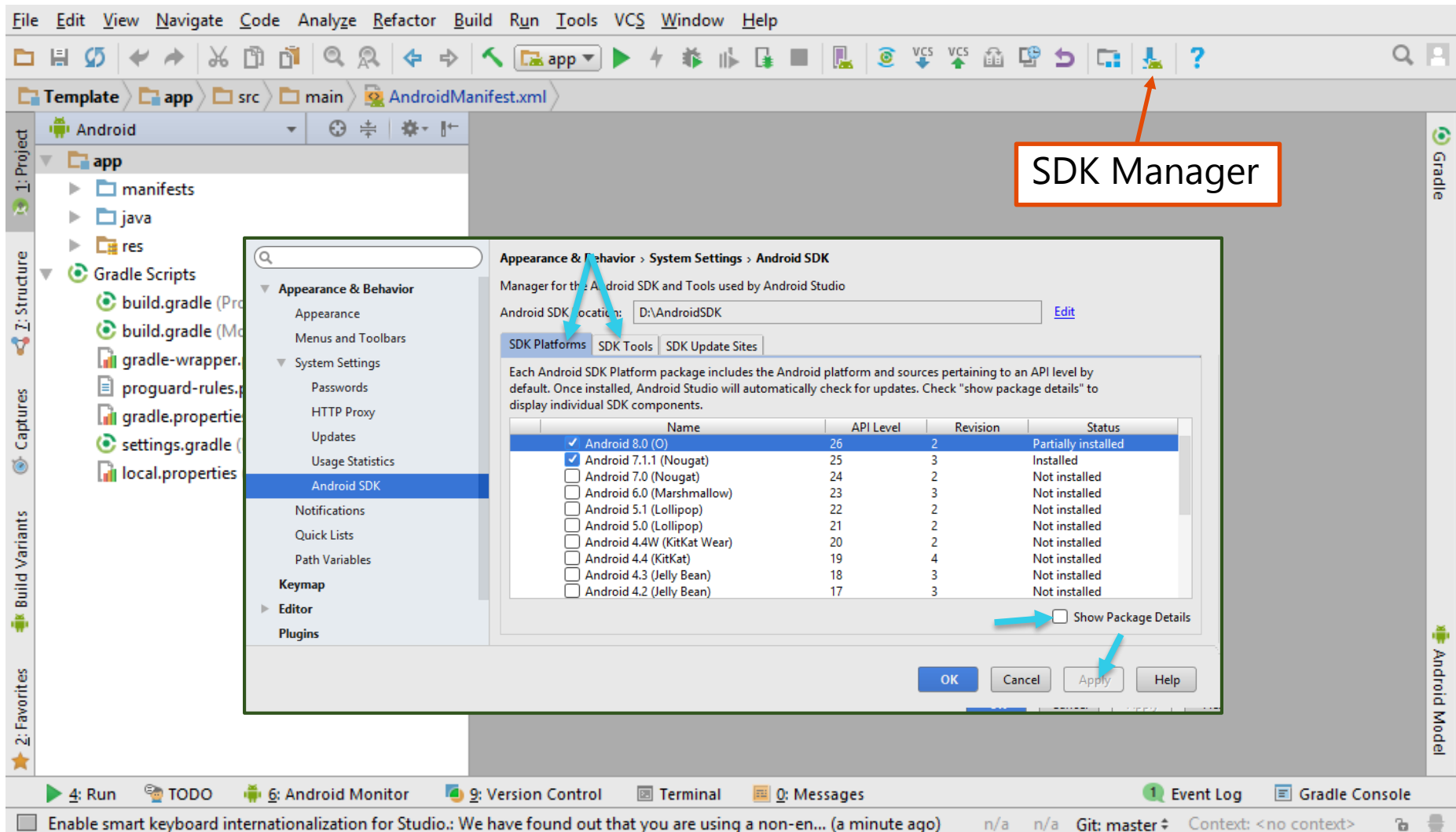


The screenshot shows the Android Studio interface. The top toolbar contains various icons, including the 'Run' button (a green play icon). An orange arrow points from the 'Run' button to the 'Your Virtual Devices' dialog box, which is titled 'Gestion des émulateurs' (Management of emulators). The dialog box displays a table of virtual devices and a 'Create Virtual Device...' button at the bottom.

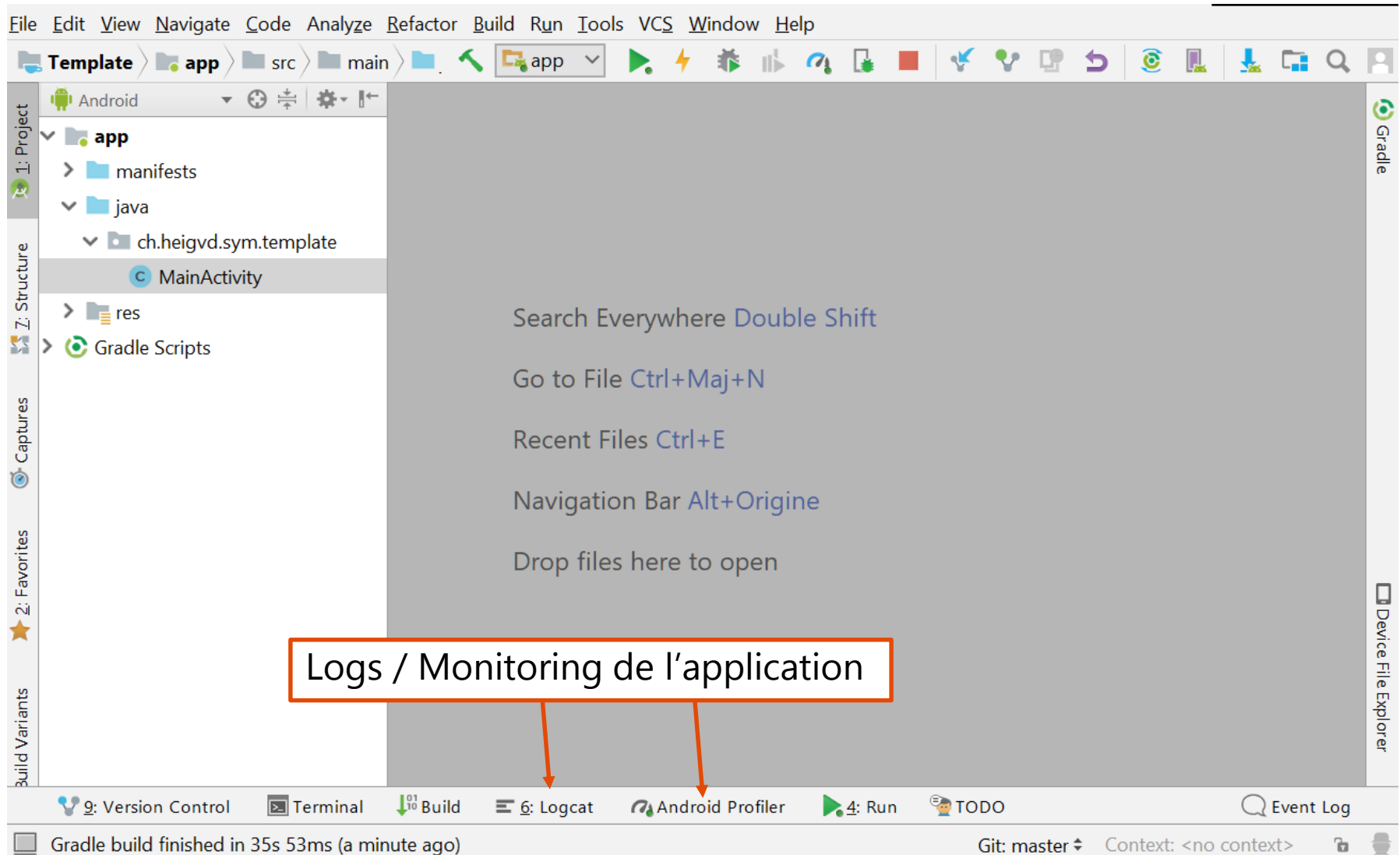
Type	Name	Play Store	Resolution	API	Target	CPU/ABI	Size on Disk	Actions
	Nexus 5X API 25		1080 × 1920: 420dpi	25	Android 7.1.1 (Goo...	x86	2 GB	
	Pixel C API 26		2560 × 1800: xhdpi	26	Android 8.0 (Googl...	x86	1 GB	
	VisualStudio androi...		Unknown Resolution	23	Android 6.0 (Googl...	arm	2 GB	Download
	VisualStudio androi...		Unknown Resolution	23	Android 6.0 (Googl...	arm	2 GB	Download
	VisualStudio androi...		Unknown Resolution	23	Android 6.0 (Googl...	x86	2 GB	Download
	VisualStudio androi...		Unknown Resolution	23	Android 6.0 (Googl...	x86	2 GB	Download

[+ Create Virtual Device...](#)

Android Studio

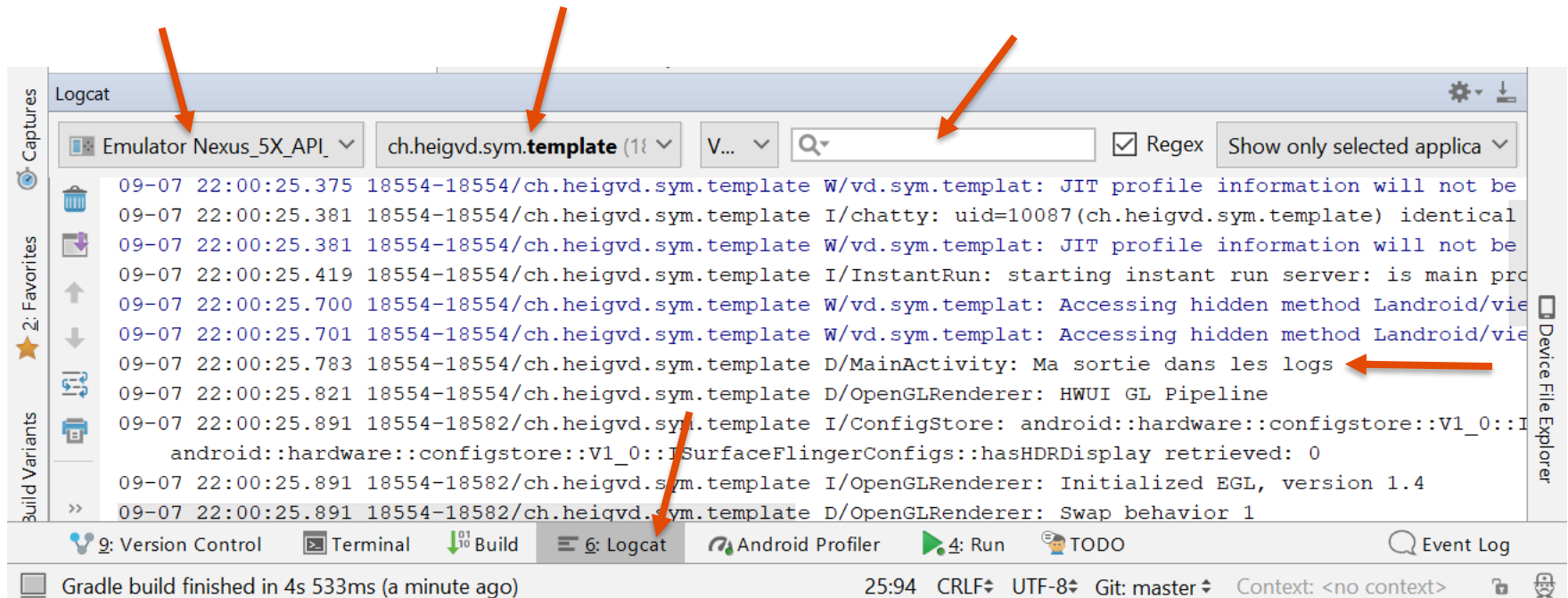


Android Studio

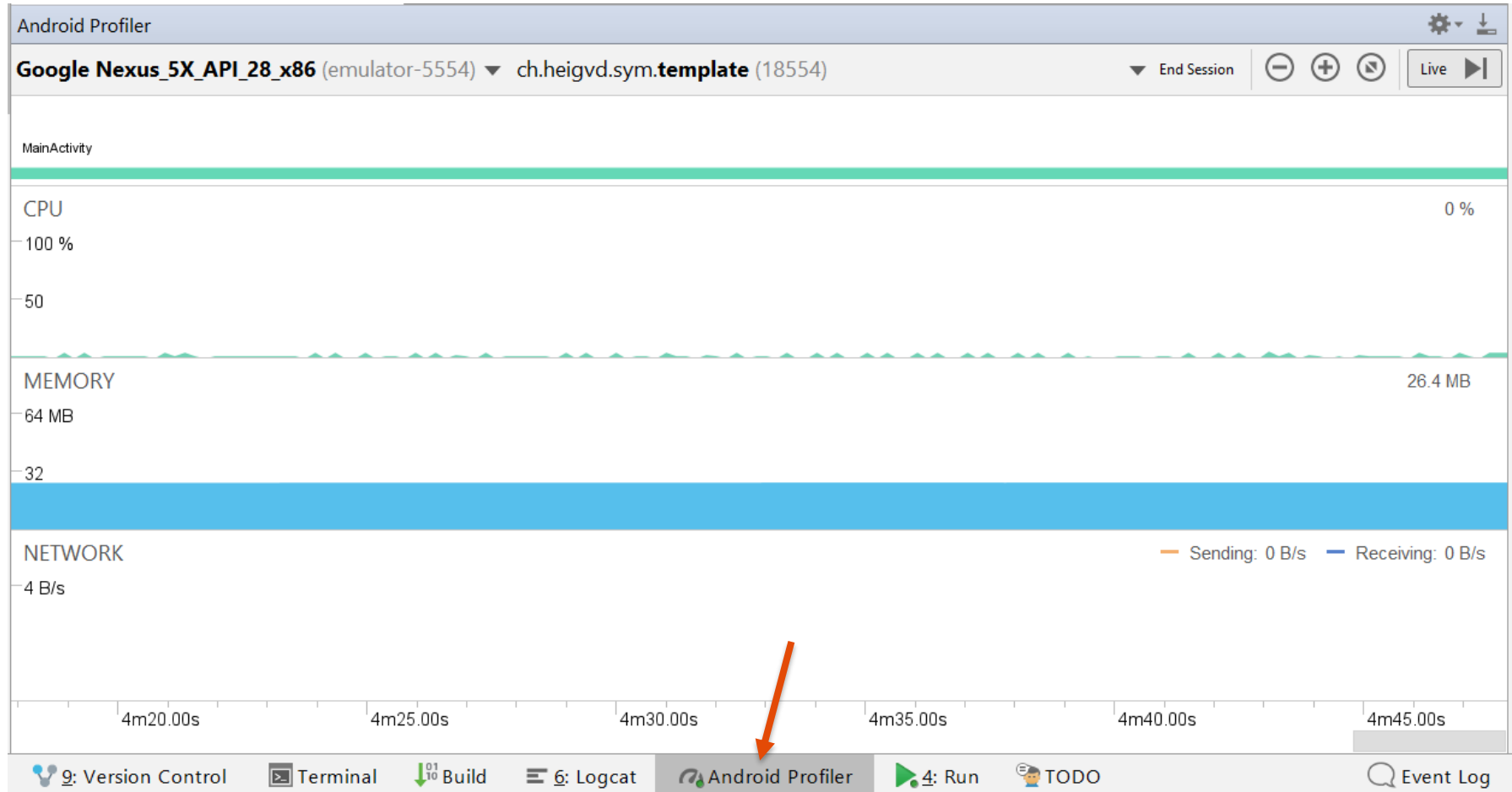


Android Studio - Logs

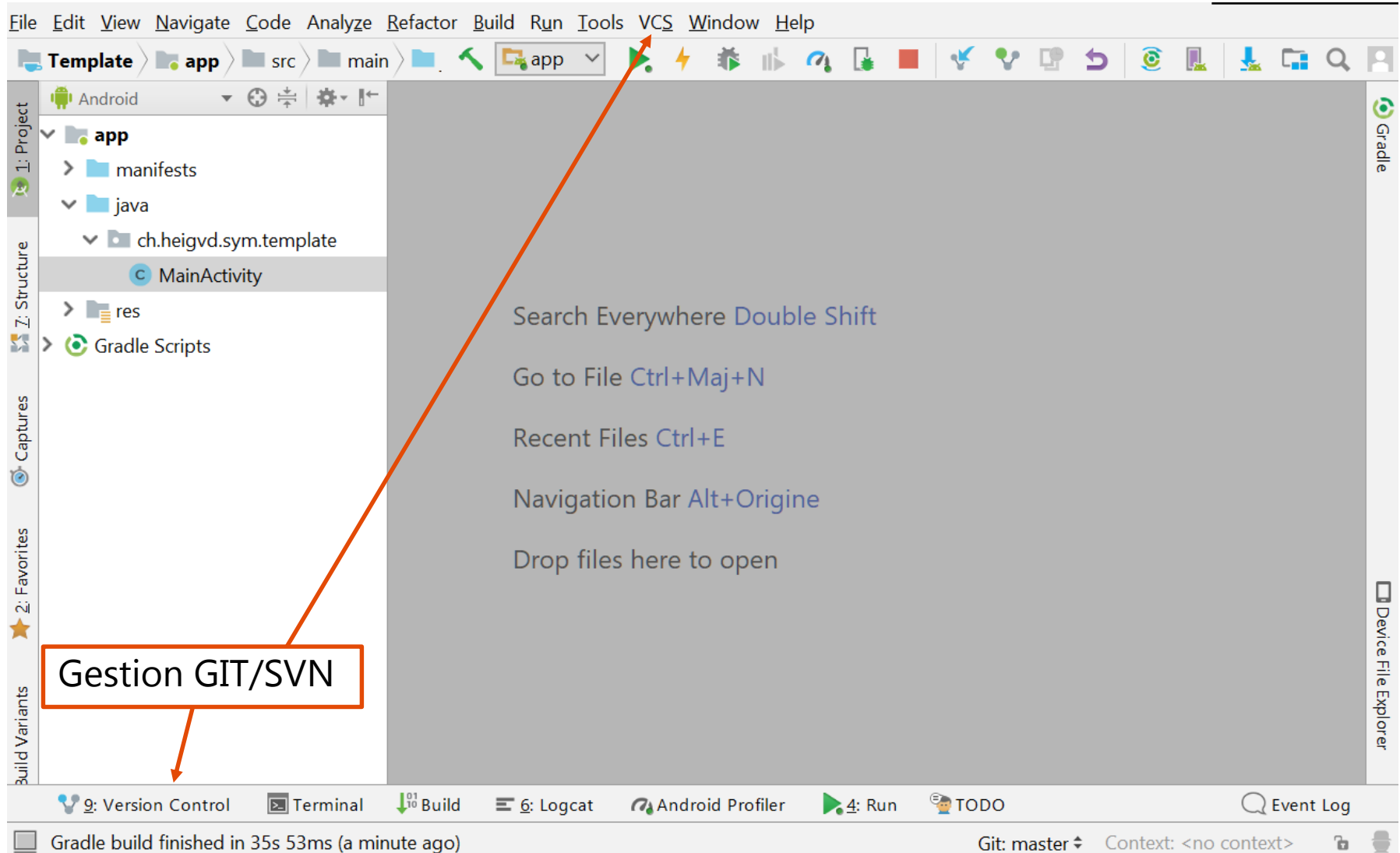
ch.heigvd.sym.template D/MainActivity: Ma sortie dans les logs



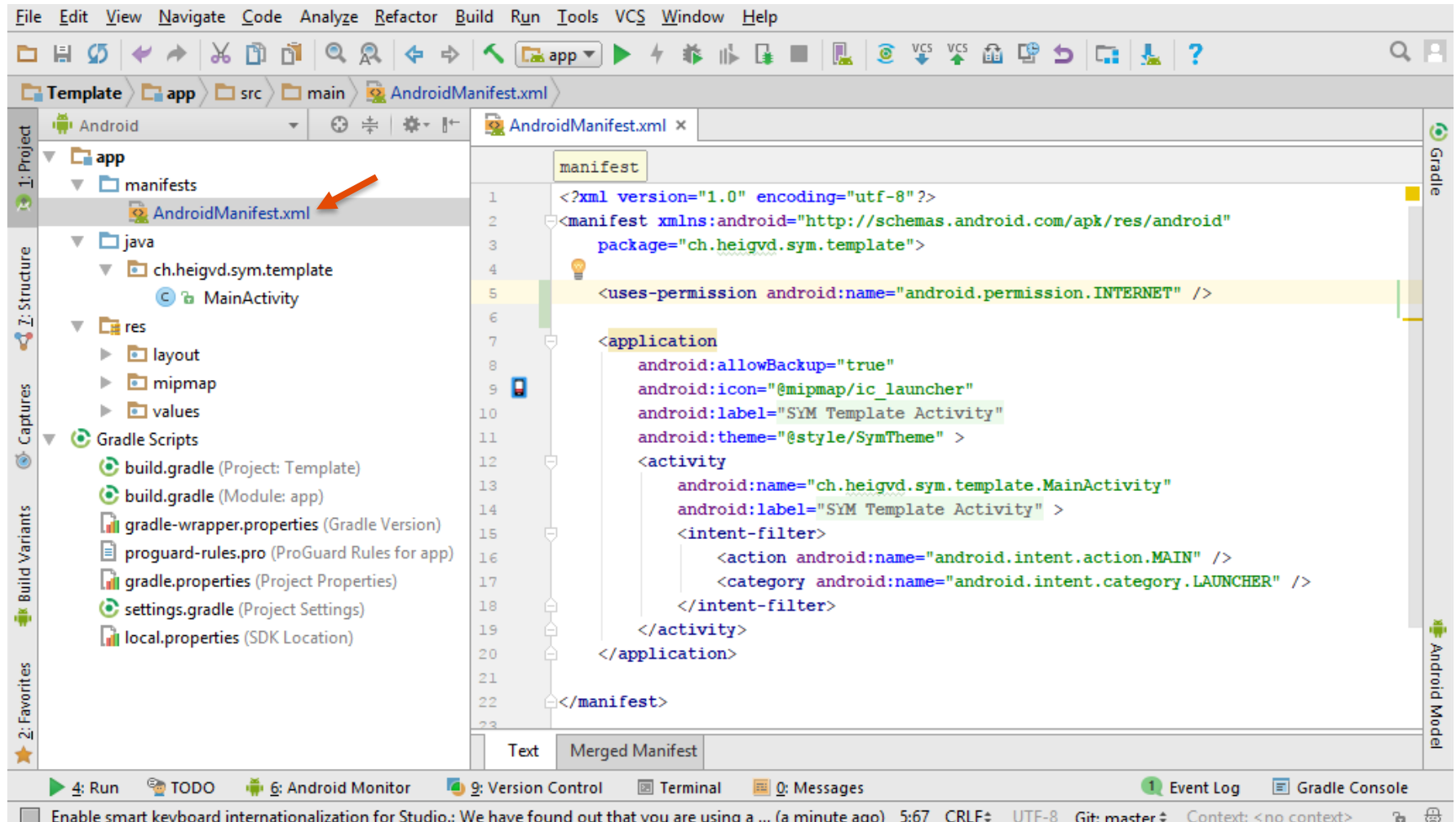
Android Studio - Monitoring



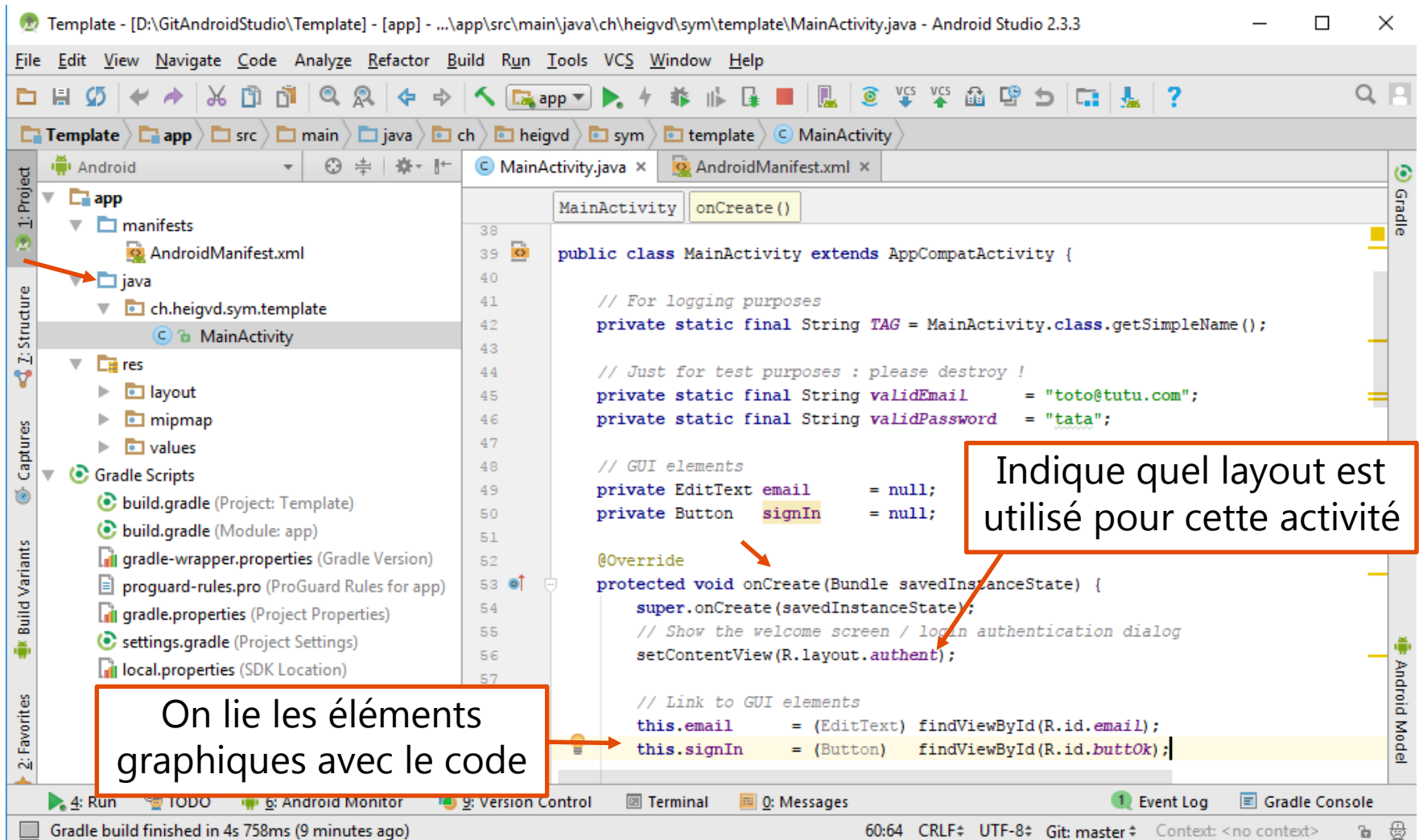
Android Studio



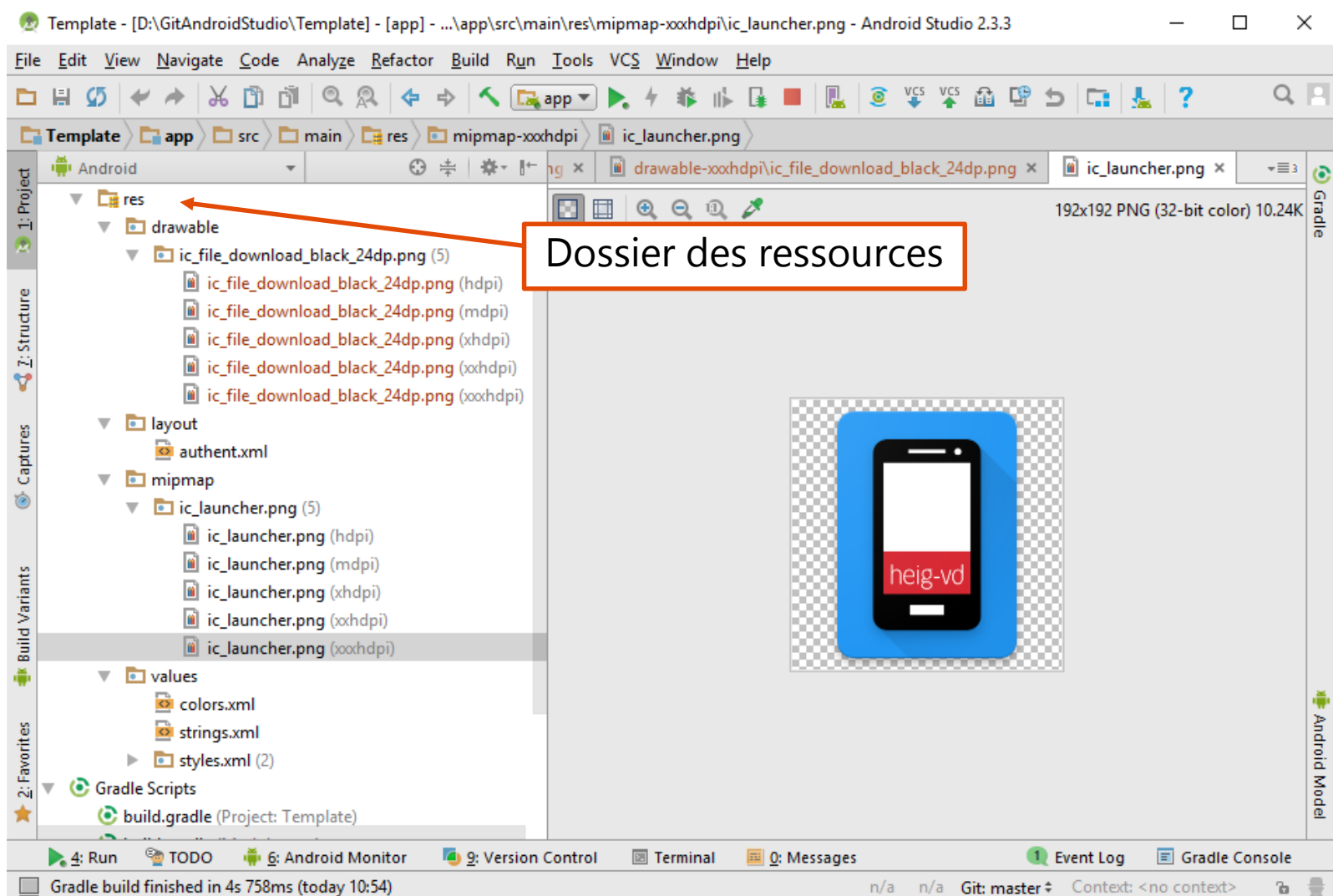
Android Studio



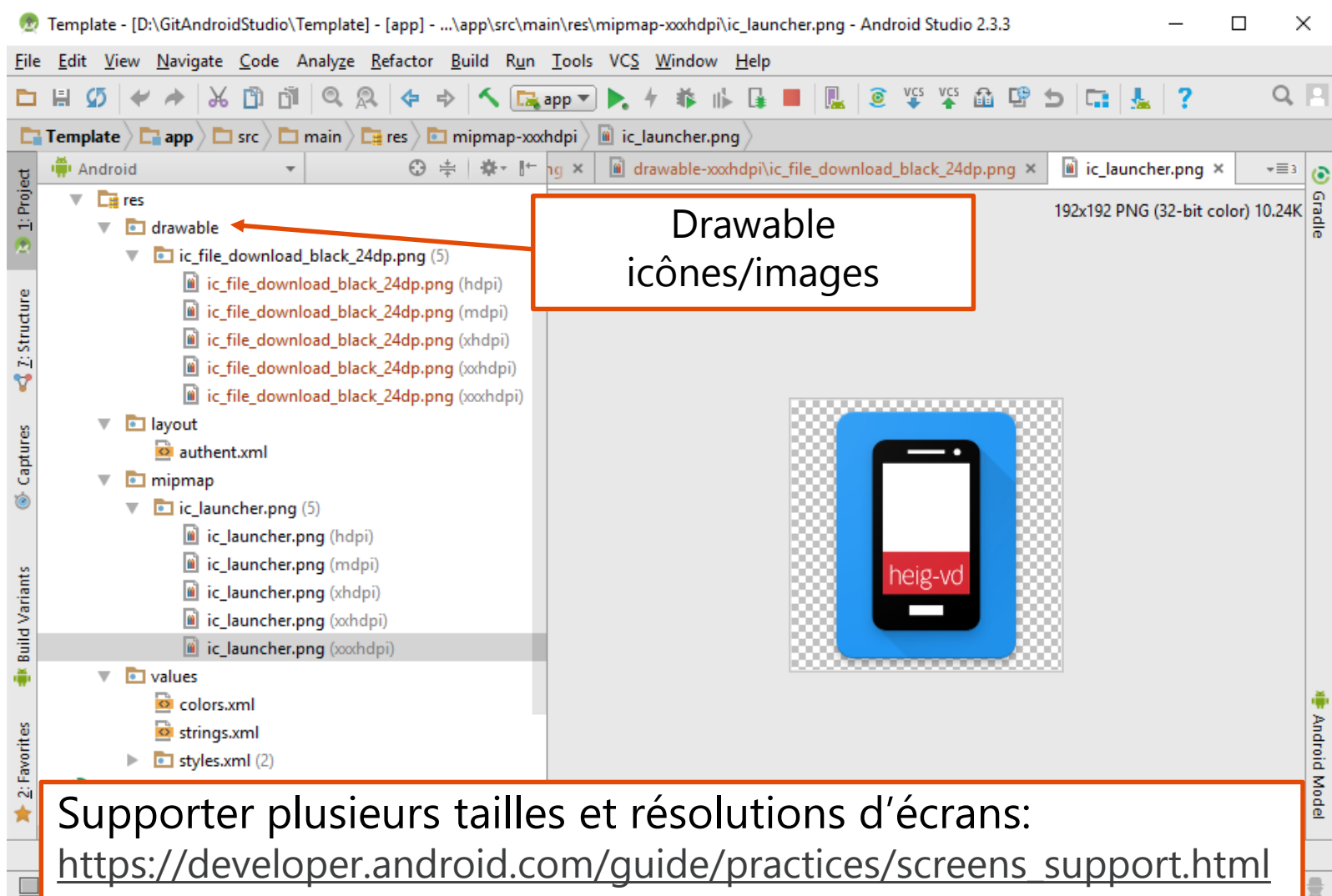
Android Studio



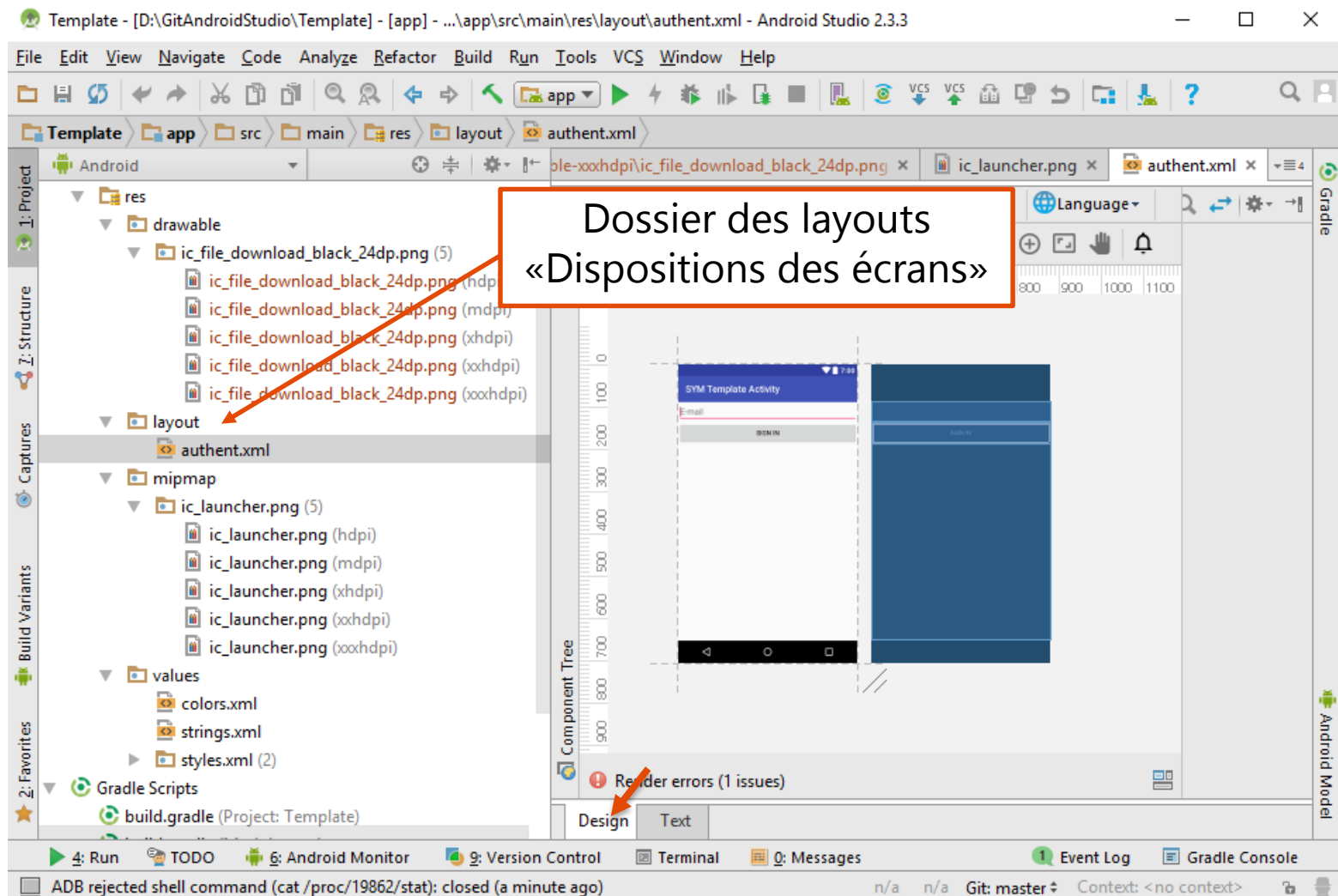
Android Studio



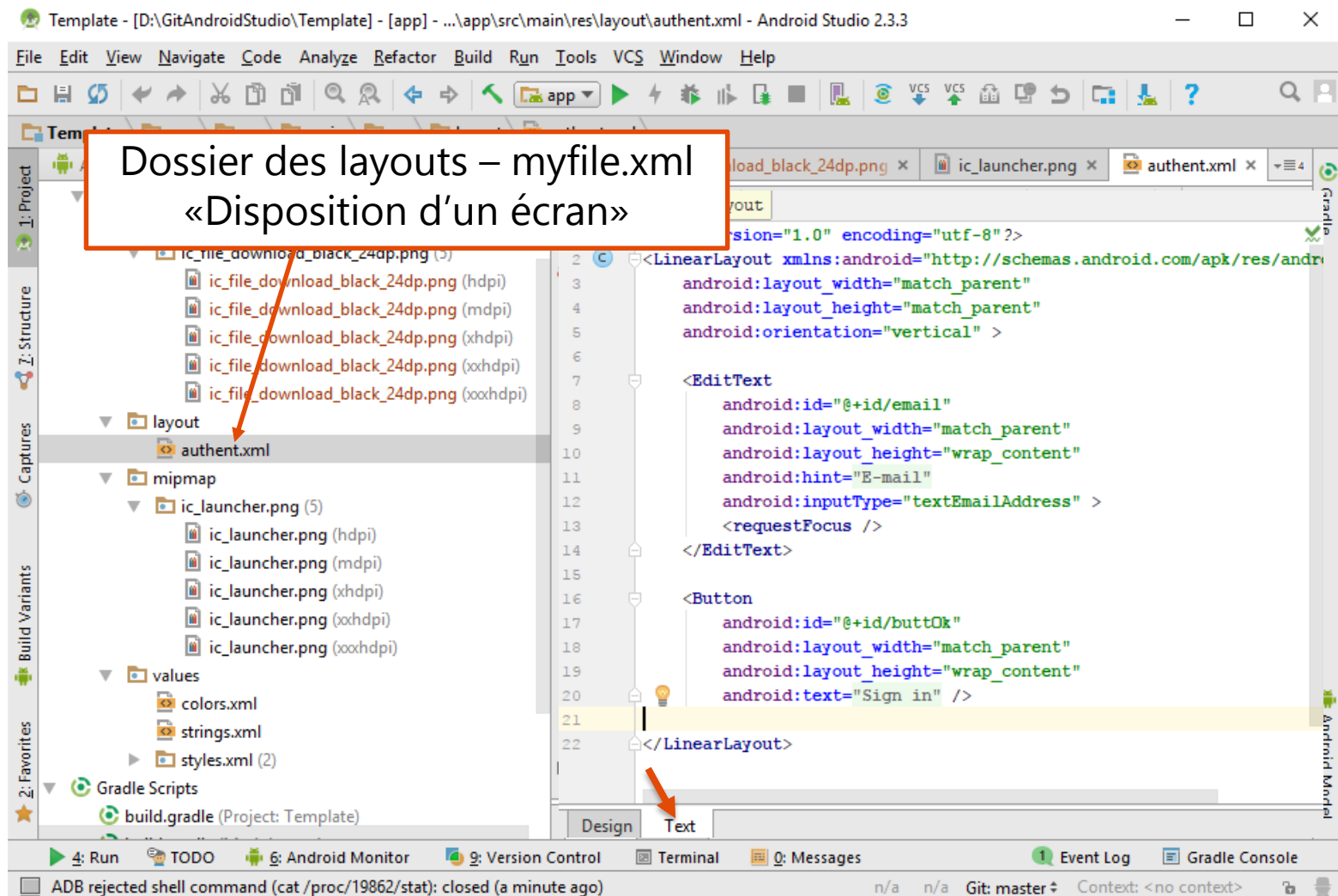
Android Studio



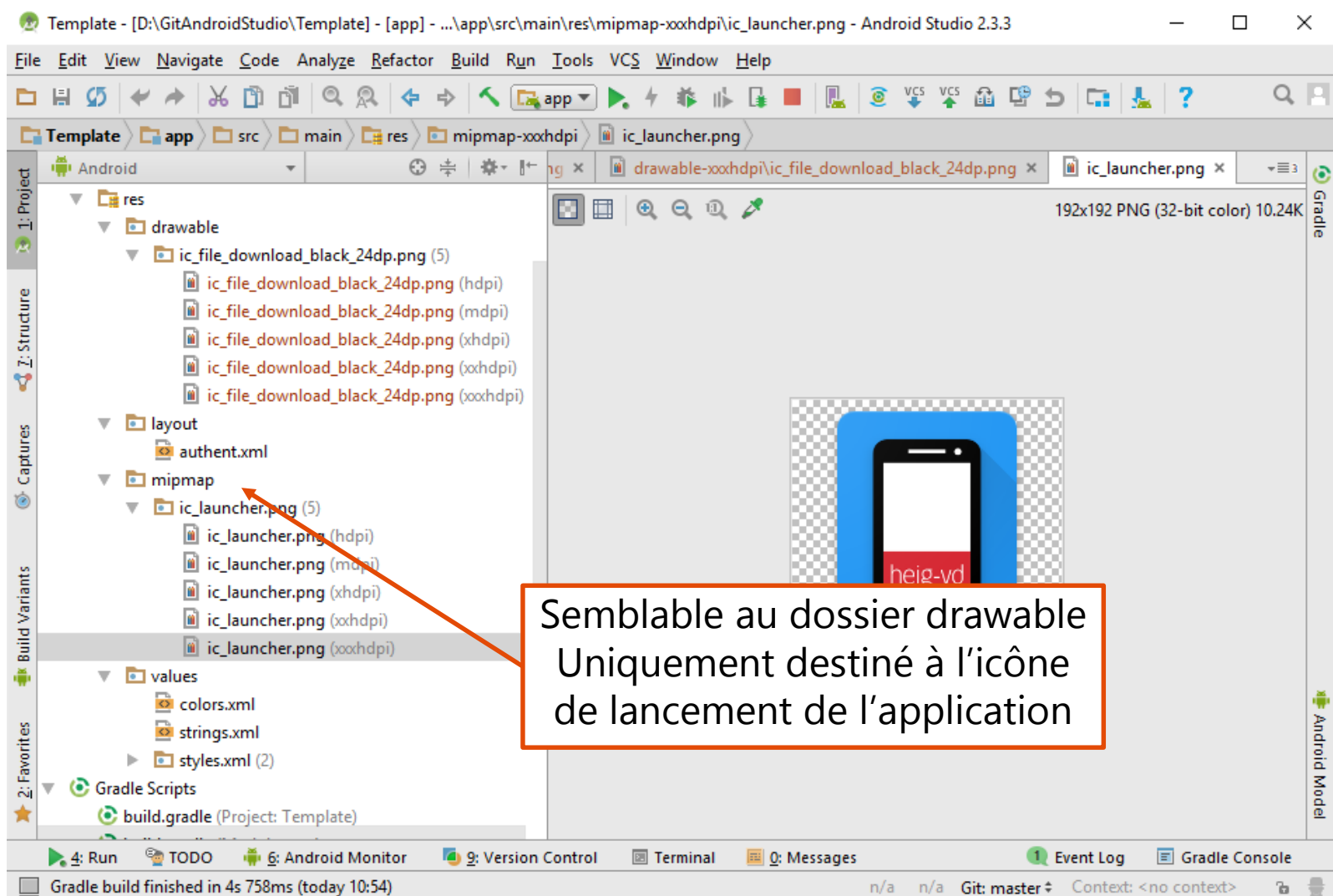
Android Studio



Android Studio



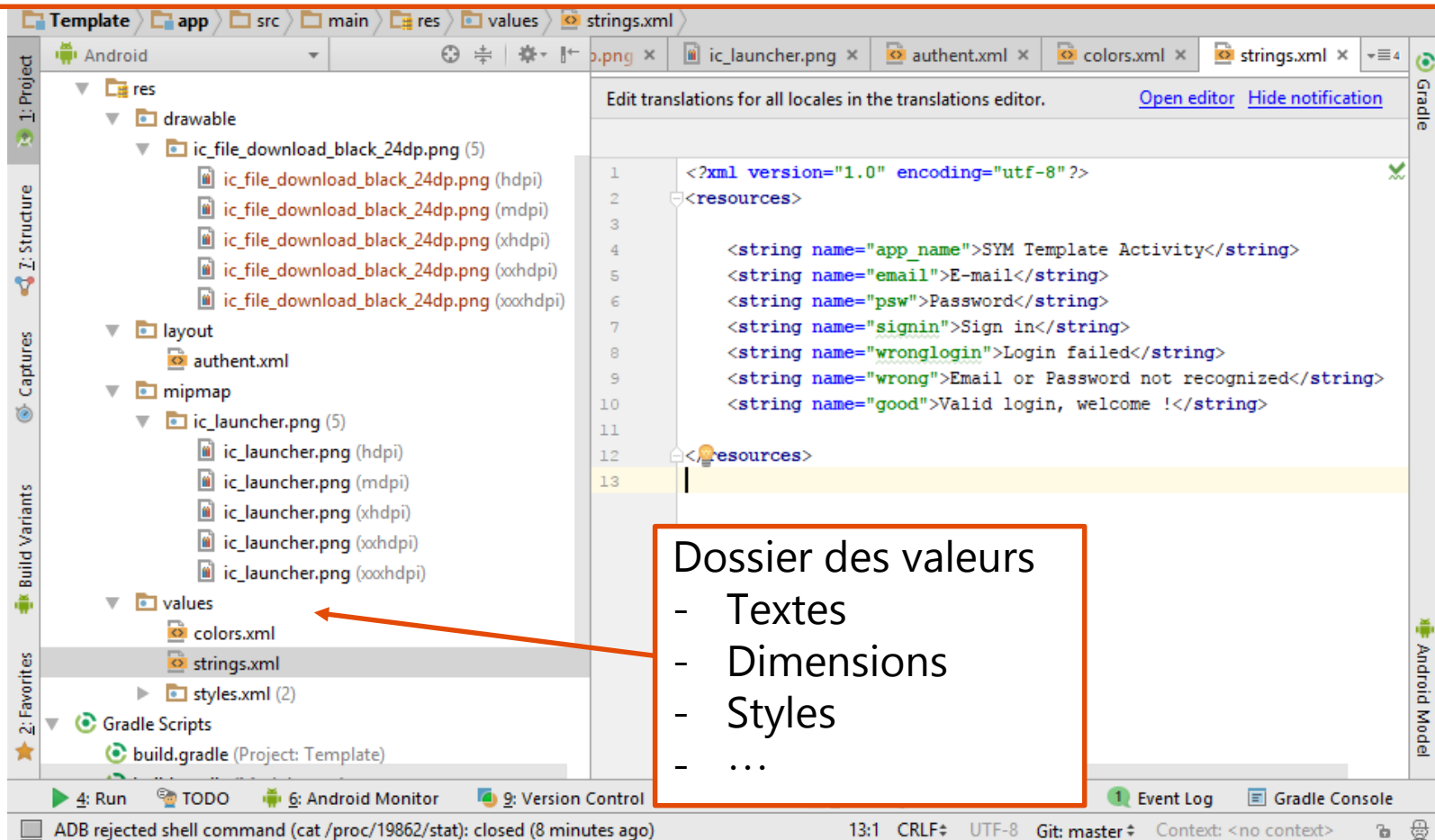
Android Studio



Android Studio

Providing resources:

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



Android Studio

Fichiers de configuration
- 2 fichiers *gradle*

```
1  apply plugin: 'com.android.application'
2
3  // Manifest version information
4  def versionMajor = 0
5  def versionMinor = 0
6  def versionPatch = 1
7
8  android {
9      compileSdkVersion 26
10     buildToolsVersion "26.0.1"
11
12     defaultConfig {
13         applicationId "ch.heigvd.sym.template"
14         minSdkVersion 14
15         targetSdkVersion 26
16         versionCode versionMajor * 10000 + versionMinor * 100 + versionPatch
17         versionName "${versionMajor}.${versionMinor}.${versionPatch}"
18     }
19
20     buildTypes {
21         release {
22             minifyEnabled false
23             proguardFiles getDefaultProguardFile('proguard-android.txt'), 'proguard-rules.pro'
24         }
25     }
26
27     dependencies {
28         compile fileTree(dir: 'libs', include: ['*.jar'])
29         compile 'com.android.support:appcompat-v7:26.0.2'
30     }
31 }
```

ADB rejected shell command (cat /proc/19862/stat): closed (17 minutes ago)

12:20 CRLF UTF-8 Git: master Context: <no context>

Emulateurs

Bien que l'émulateur fourni de base avec le SDK d'Android soit à présent relativement complet et bien optimisé, il existe d'autres alternatives:

- *Genymotion – Version personnelle gratuite*
<https://www.genymotion.com/fun-zone/>
- *Visual Studio Emulator for Android*
Version autonome aussi disponible
<https://www.visualstudio.com/fr/vs/msft-android-emulator>

Documentation

- *Documentation*
<https://developer.android.com/guide/index.html>
- *API Android (JAVA)*
<https://developer.android.com/reference/classes.html>
- *Conseils Material Design*
<https://developer.android.com/design/index.html>
- *Changements apportés par les nouvelles versions*
<https://developer.android.com/about/versions/pie/>
- *The Busy Coder's Guide to Android Development*
<https://commonsware.com/Android/>