



Reskilling 4Employment Software Developer

Acesso móvel a sistemas de informação

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Sistema operativo

- De uma forma simplista um sistema operativo é um conjunto de software concebido especificamente para gerir os recursos de Hardware de uma máquina e facilitar a sua utilização.



Tipos de sistemas operativos



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- Os sistemas operativos podem dividir-se em duas categorias:
 - Desktop
 - Mobile

Sistemas operativos Desktop

- Um sistema operativo Desktop é normalmente utilizado em máquinas pessoais ou de produção, nomeadamente computadores desktop, laptop ou servidores.
- Existem imensos sistemas operativos, cada um com várias versões e funcionalidades.
- Exemplos:
 - Windows
 - Mac OS X
 - Linux



Sistemas operativos Desktop



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Nome	Empresa	Versão mais recente	Ano de lançamento da última versão
Windows	Microsoft	Windows 11	2021
macOS	Apple Inc.	macOS v12 "Ventura"	2022
Sistemas baseados em Linux	Linus Benedict Torvalds	Várias distribuições	2022

Sistemas operativos Mobile



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- Estes sistemas operativos são desenhados para dispositivos móveis como smartphones, tablets, PDAs ou outros.
- Atualmente os sistemas operativos mobile mais utilizados são o Android e o iOS.



GOOGLE ANDROID



APPLE IOS

Sistemas operativos Mobile



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Nome	Fundação/Empresa	Versão mais recente	Ano de lançamento
Android	Google Inc.	Android 13	2022
iOS	Apple Inc.	iOS 16	2022

Sistemas operativos Mobile

- Marcas que usam Android
 - Samsung
 - Alcatel
 - Asus
 - Huawei
 - Nubia
 - OnePlus
 - Lenovo
 - Wiko
 - Sony
 - Xiaomi
 - HTC
 - Nexus
 - LG
 - Motorola
 - Nokia
 - Microsoft
 - ...



Sistemas operativos Mobile

- Marcas que usam iOS
 - Apple



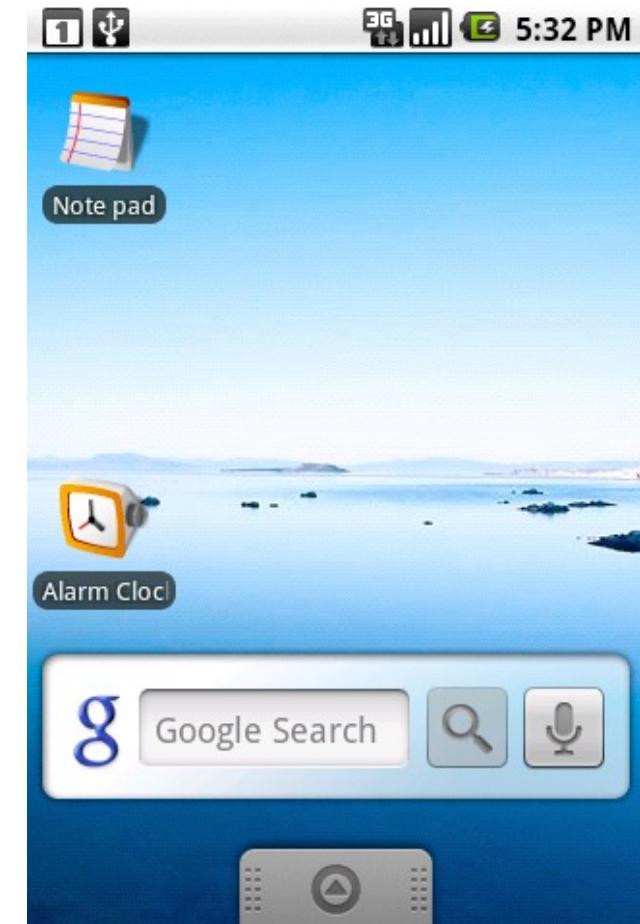
Sistemas operativos - Android

- O Android é um sistema operativo livre, baseado em Linux, desenvolvido pela Google para dispositivos móveis.
- Atualmente o Android está direcionado para as vertentes:
 - Smartphone/tablet
 - TV (Android TV)
 - Carro (Android Auto)
 - Smartwatch (Wear OS)
 - IoT (Android Things)
- Desde 2013, o Android é o sistema operativo mobile mais usado no mundo.



Versões do Android

- Android 1.5 – Cupcake (2009)



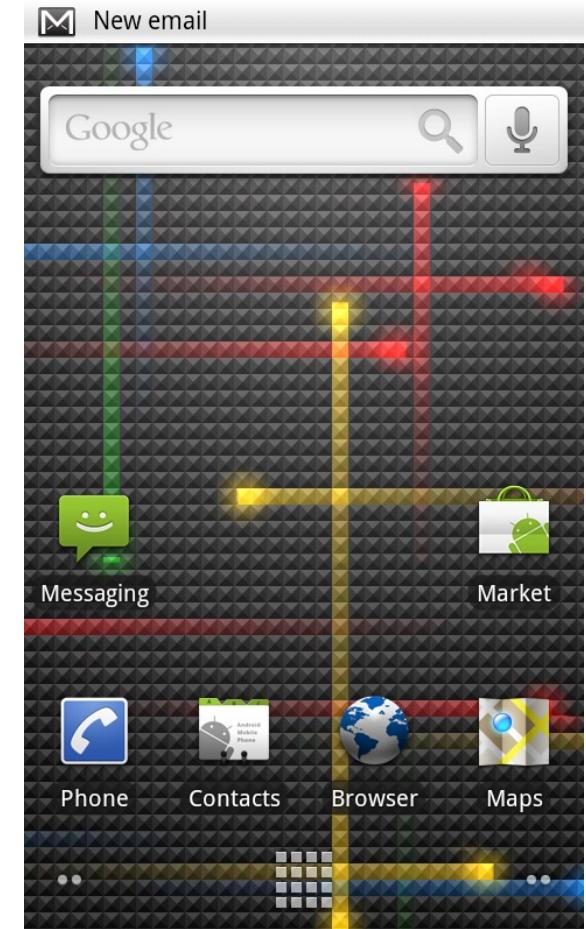
Versões do Android

- Android 1.6 – Donut (2009)



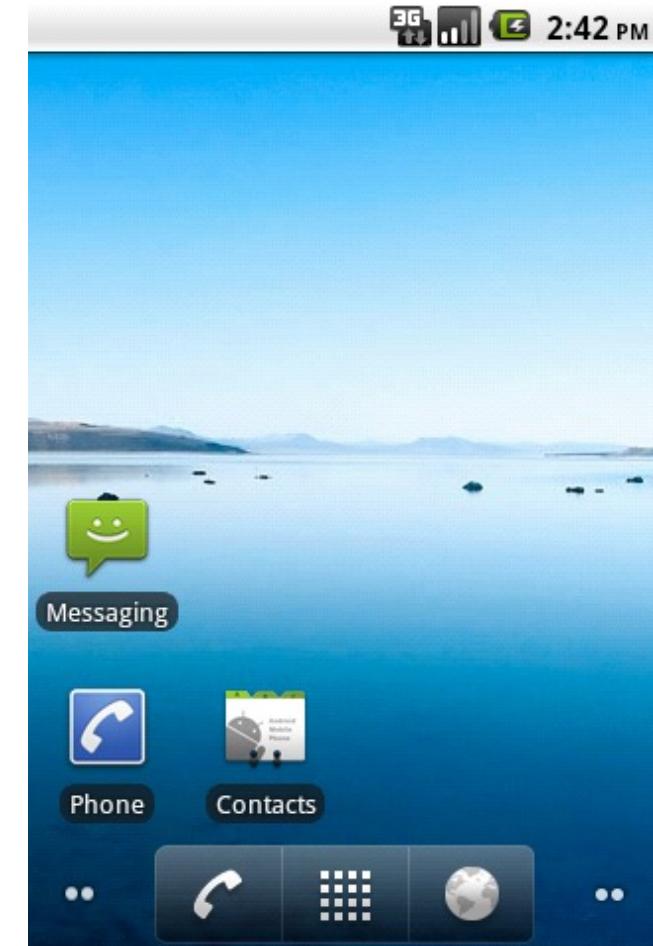
Versões do Android

- Android 2.0/2.1 – Eclair (2009/2010)



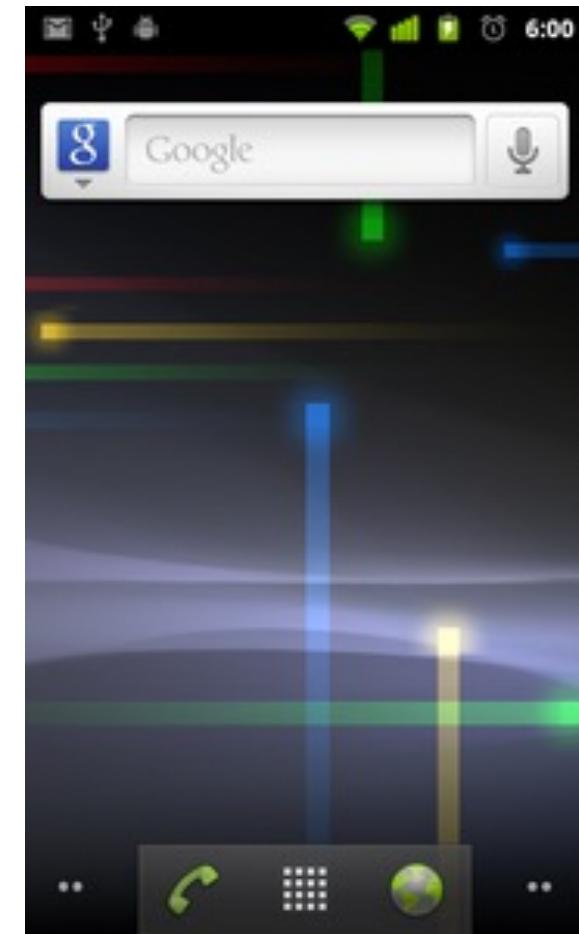
Versões do Android

- Android 2.2 – Froyo (2010)



Versões do Android

- Android 2.3 – Gingerbread (2010)



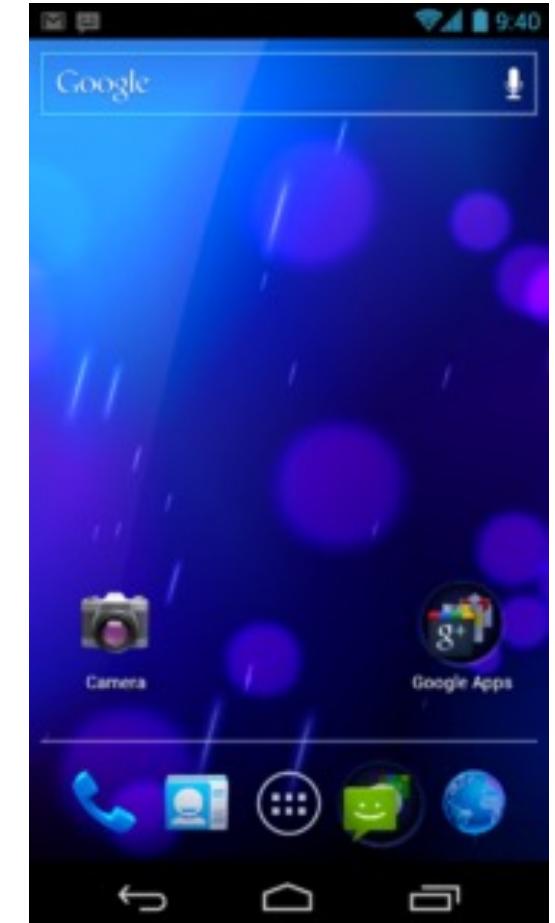
Versões do Android

- Android 3.0/3.1/3.2 – Honeycomb (2011/2012)



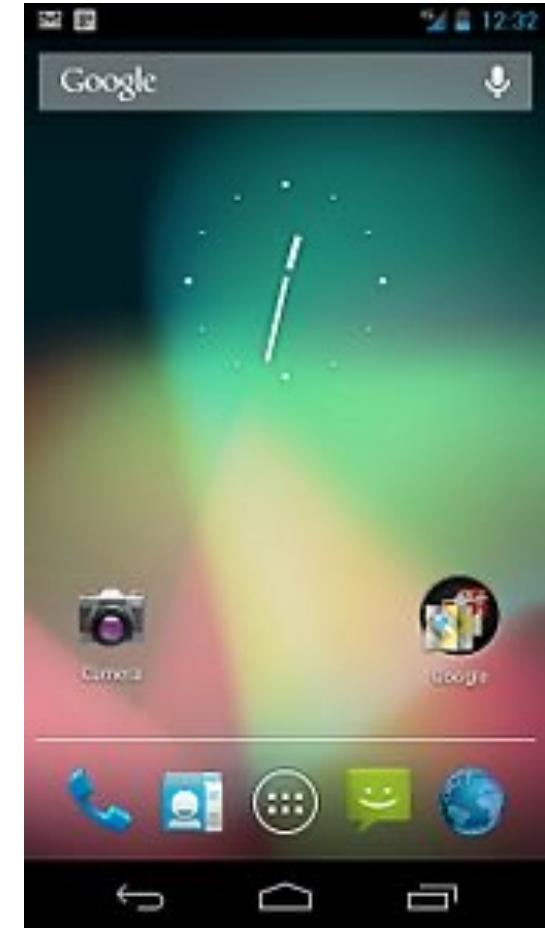
Versões do Android

- Android 4.0 - Ice Cream Sandwich (2011/2012)



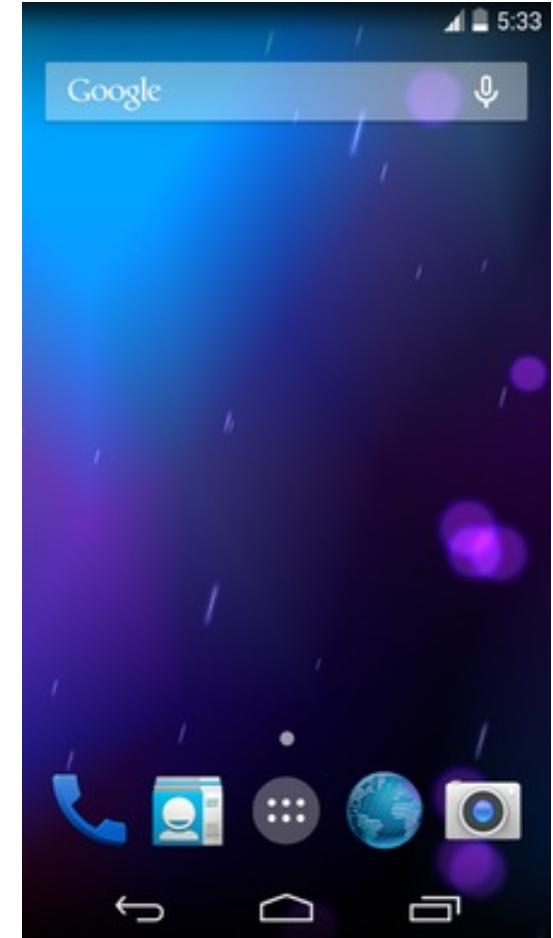
Versões do Android

- Android 4.1/4.2/4.3 – Jelly Bean (2012/2013)



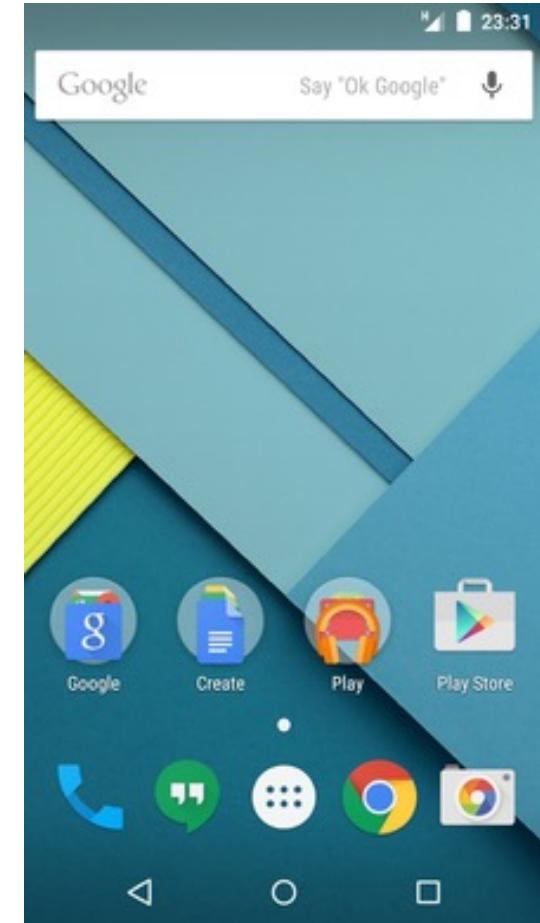
Versões do Android

- Android 4.4 – KitKat (2014)



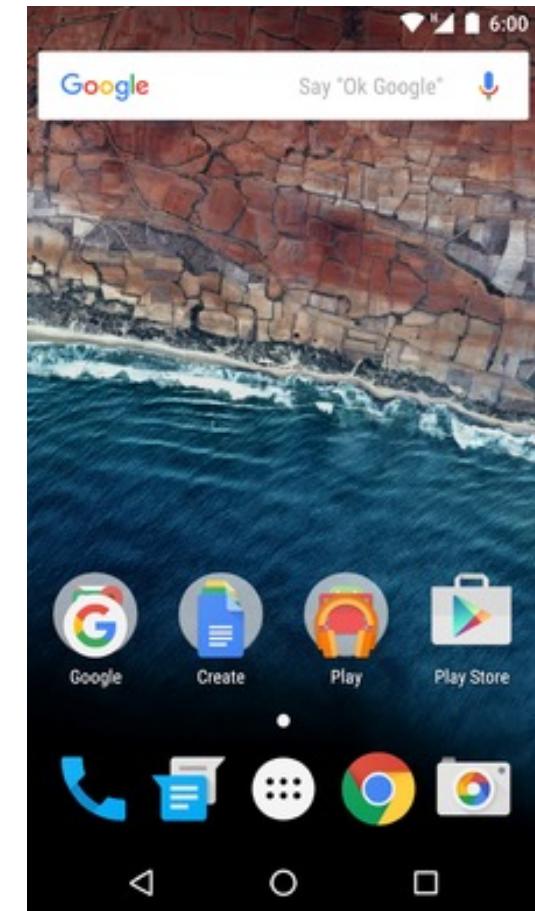
Versões do Android

- Android 5.0/5.1 – Lollipop (2014/2015)



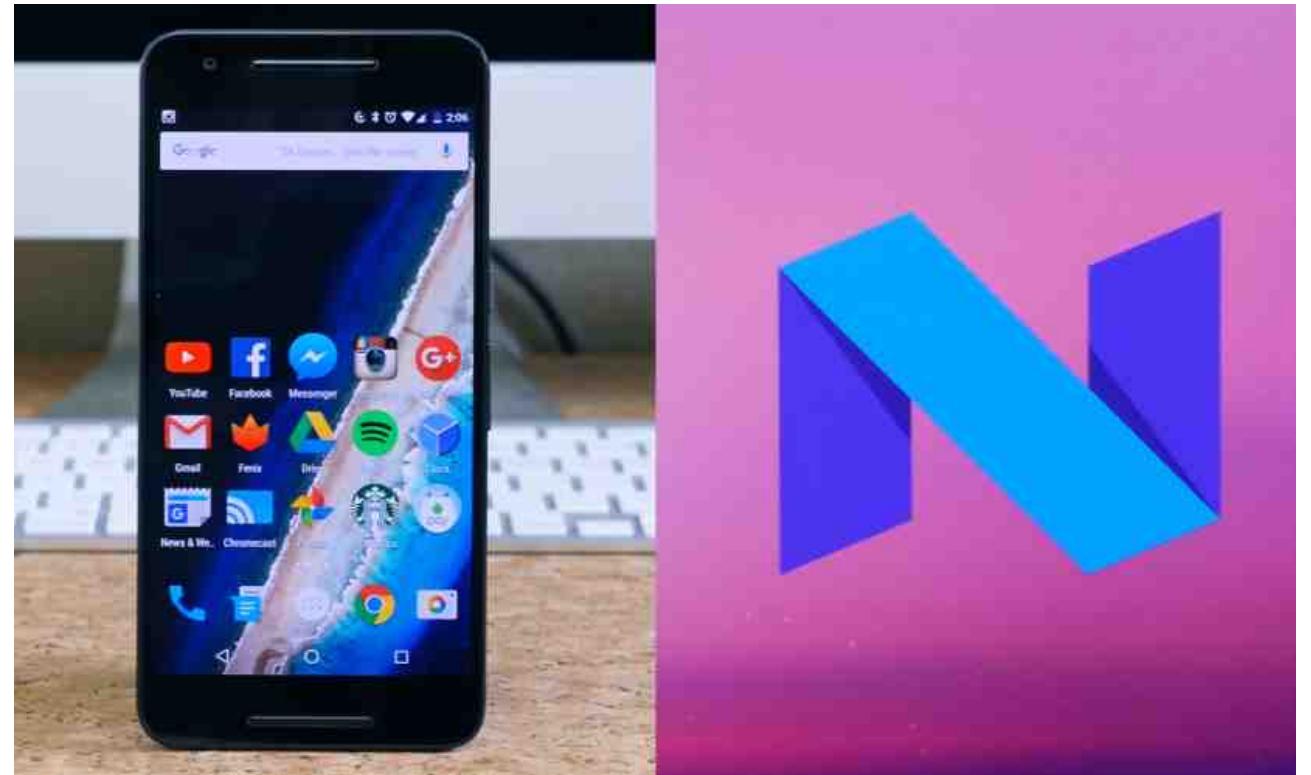
Versões do Android

- Android 6.0 – Marshmallow (2015/2016)



Versões do Android

- Android 7.0 – Nougat (2016)



Versões do Android

- Android 8.0 – Oreo (2017)



Versões do Android

- Android 9.0 – Pie (2018)

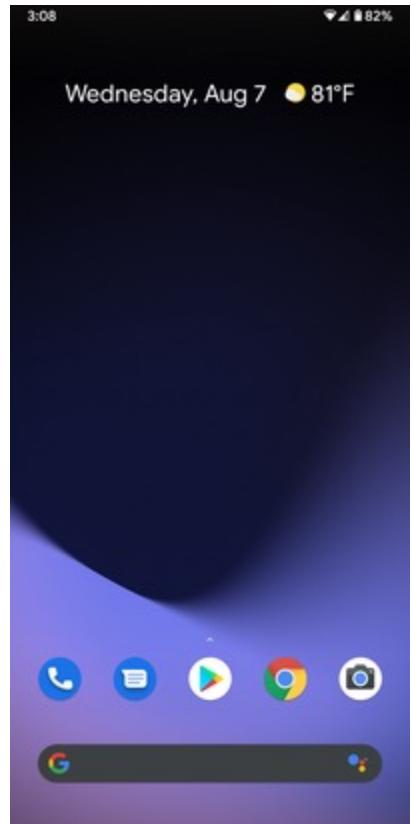


Versões do Android

- Android 10 (2019)

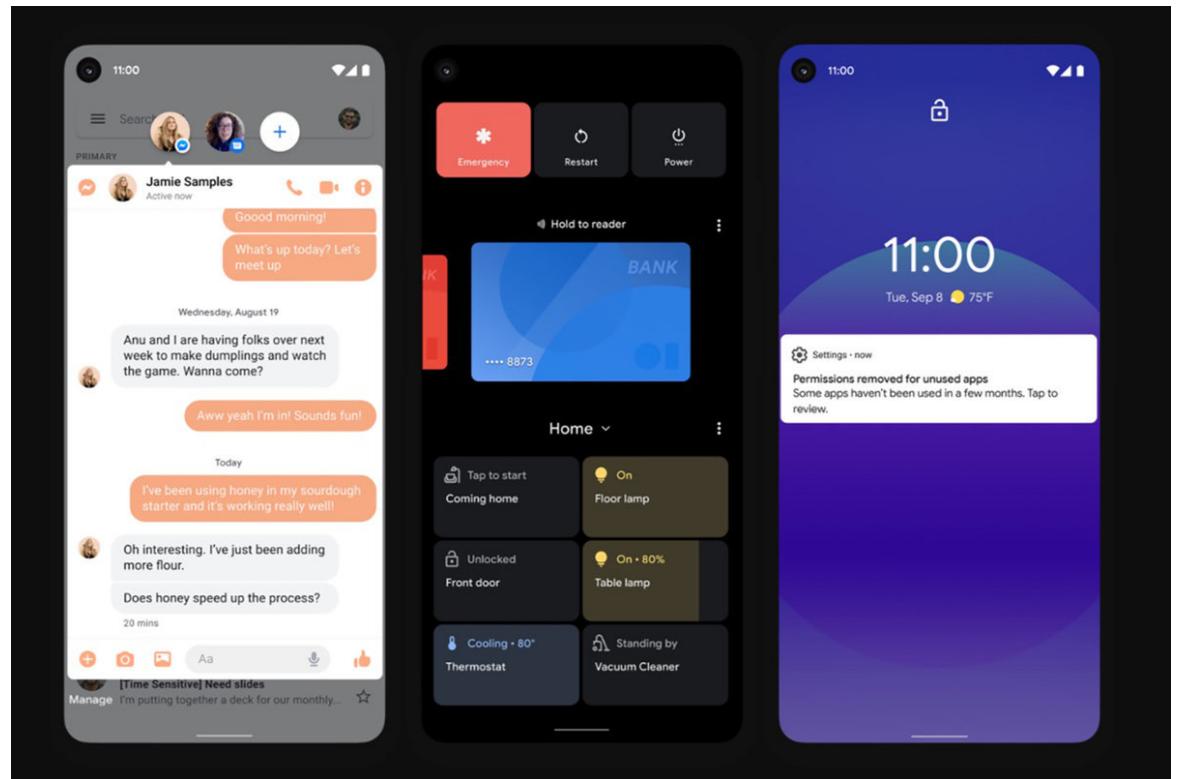


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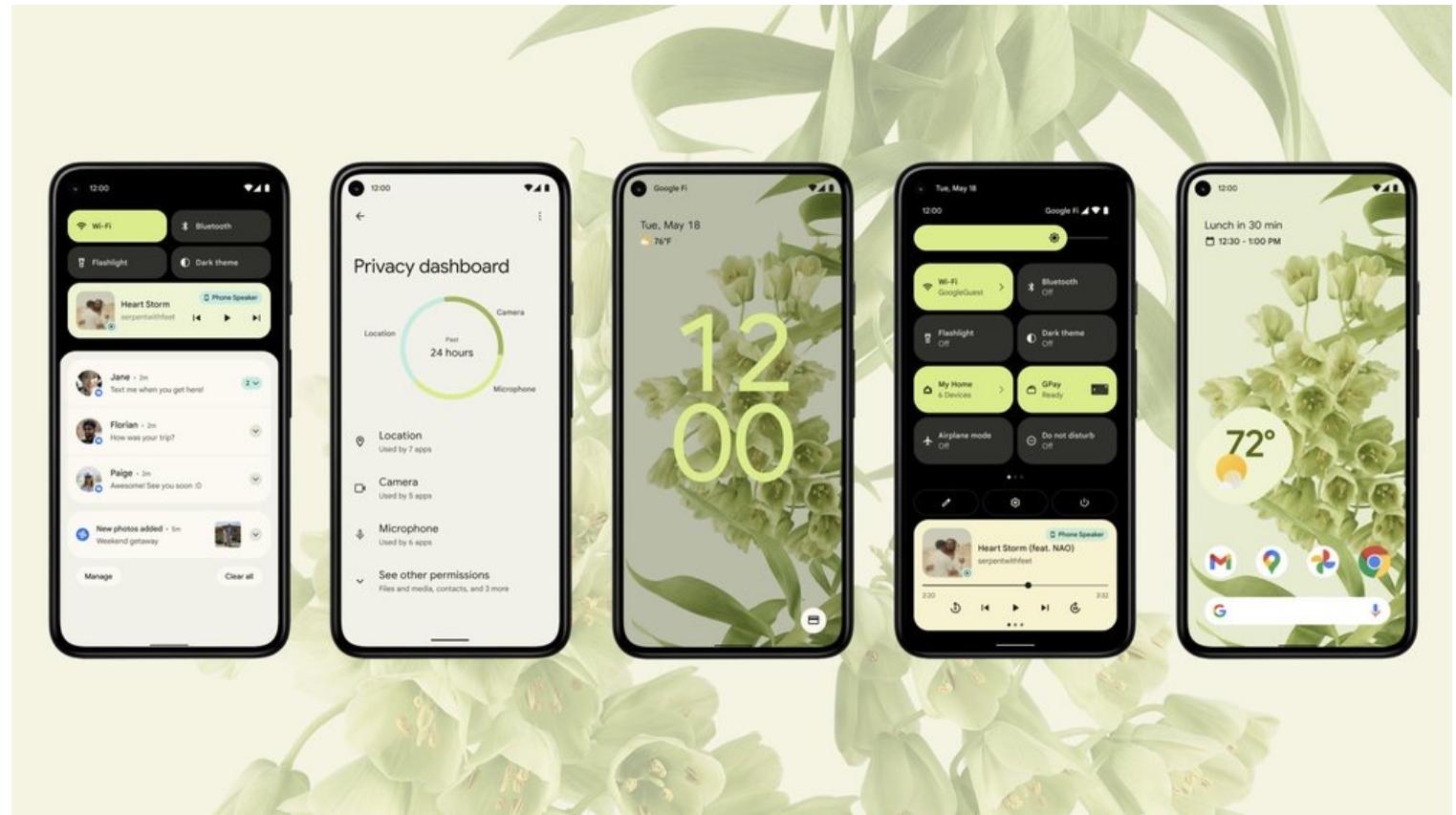
Versões do Android

- Android 11 (2020)



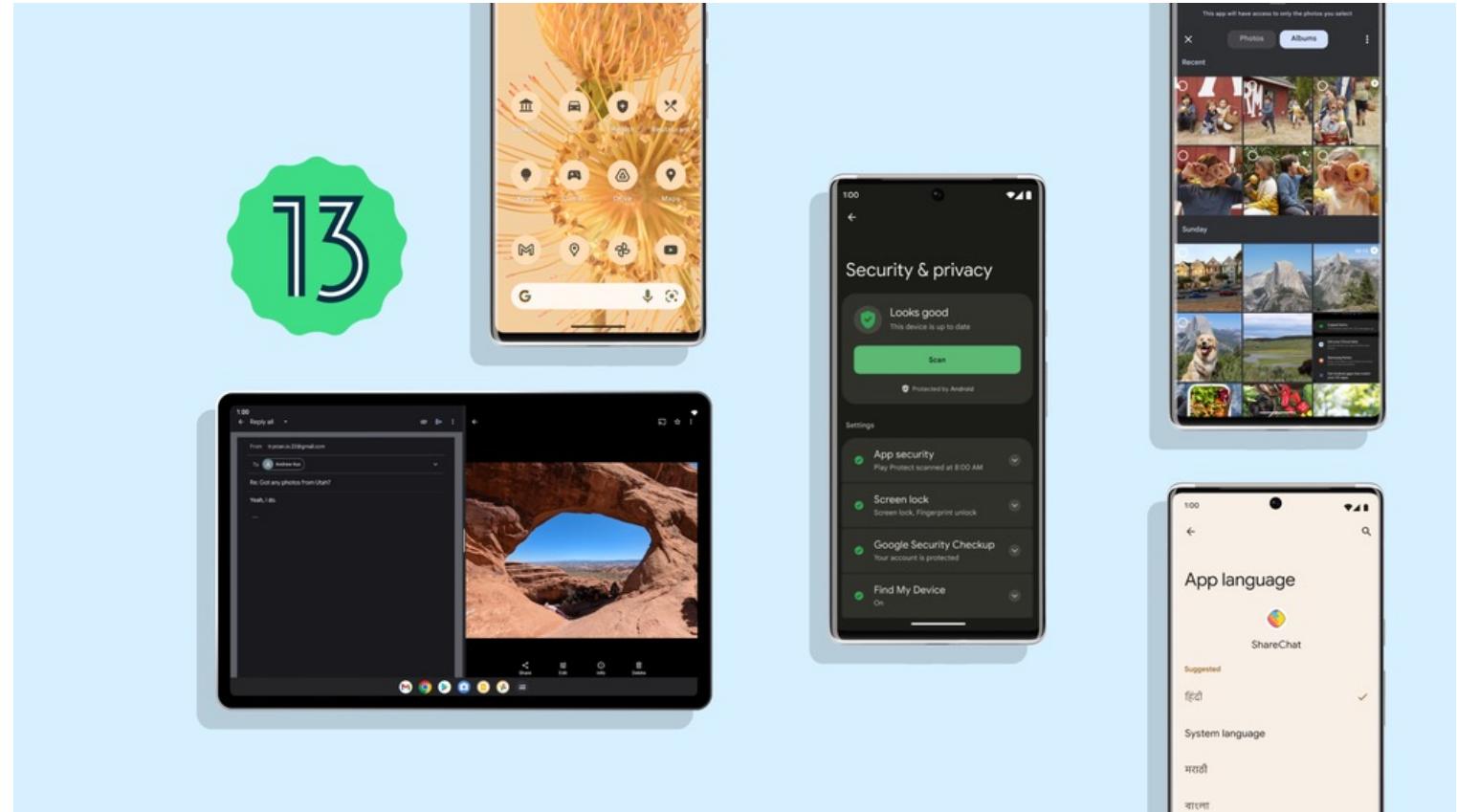
Versões do Android

- Android 12 (2021)



Versões do Android

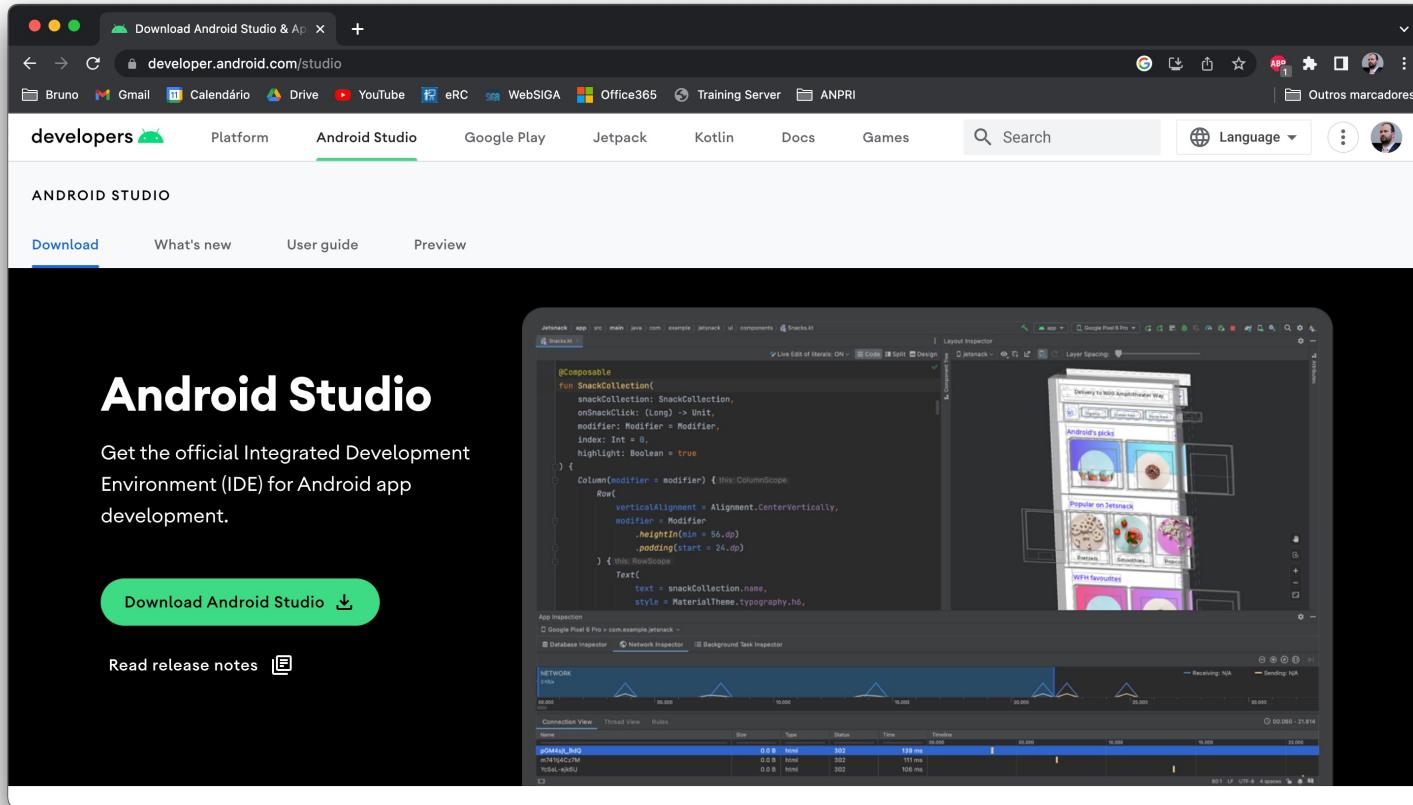
- Android 13 (2022)



Android Studio



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Android Studio



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Get Android Studio

Download the most stable version of
Android Studio Dolphin | 2021.3.1 Patch
1 for Mac (~1000 MiB)

[Download Android Studio](#)

SYSTEM REQUIREMENTS

MacOS®

- MacOS® 10.14 (Mojave) or higher
- ARM-based chips, or 2nd generation Intel Core or newer with support for [Hypervisor.Framework](#)
- 8 GB RAM or more
- 8 GB of available disk space minimum (IDE + Android SDK + Android Emulator)
- 1280 x 800 minimum screen resolution

SYSTEM REQUIREMENTS

Linux

- Any 64-bit Linux distribution that supports Gnome, KDE, or Unity DE; GNU C Library (glibc) 2.31 or later.
- x86_64 CPU architecture; 2nd generation Intel Core or newer, or AMD processor with support for AMD Virtualization (AMD-V) and SSSE3
- 8 GB RAM or more
- 8 GB of available disk space minimum (IDE + Android SDK + Android Emulator)
- 1280 x 800 minimum screen resolution

SYSTEM REQUIREMENTS

Microsoft® Windows®

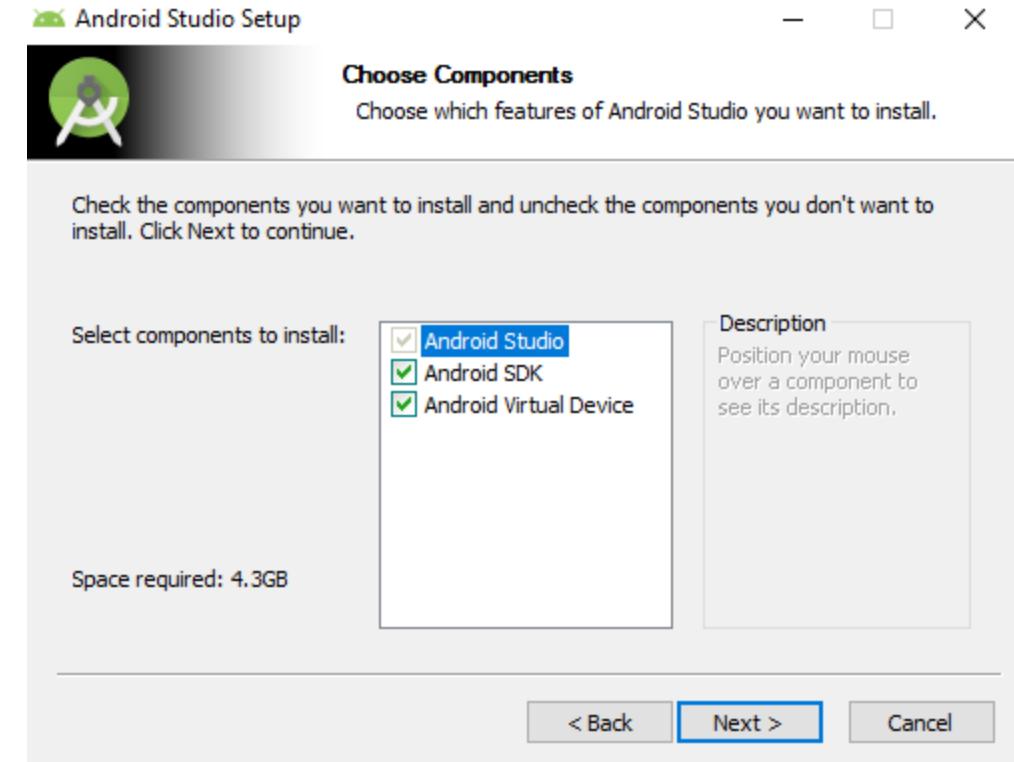
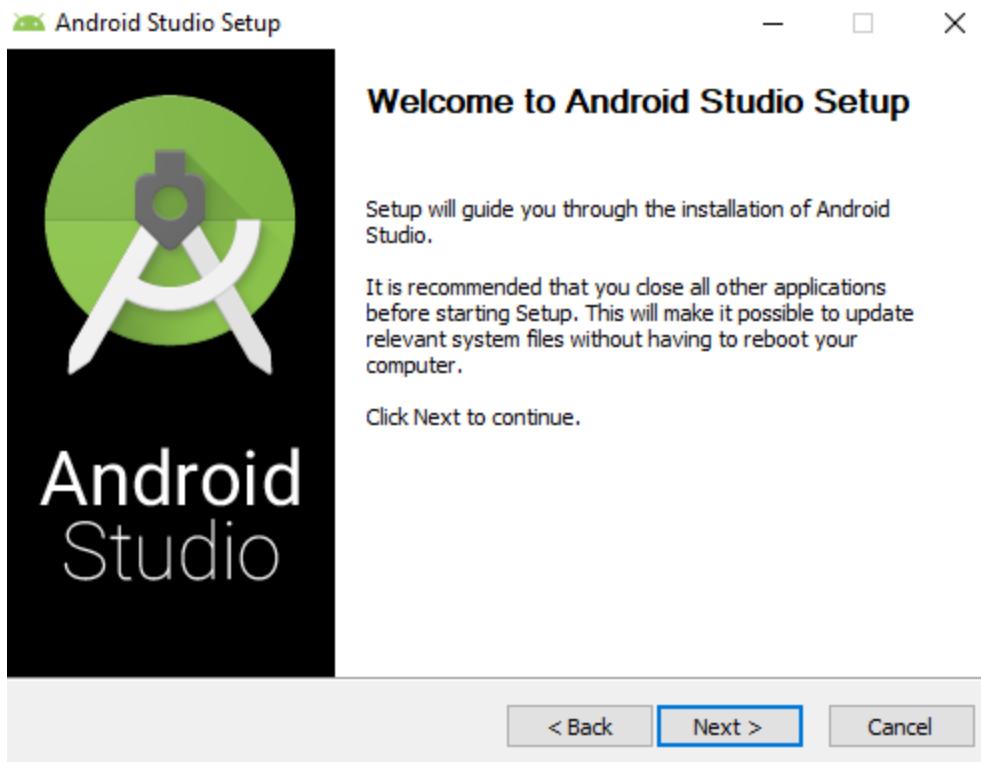
- 64-bit Microsoft® Windows® 8/10
- x86_64 CPU architecture; 2nd generation Intel Core or newer, or AMD CPU with support for a Windows [Hypervisor.Framework](#)
- 8 GB RAM or more
- 8 GB of available disk space minimum (IDE + Android SDK + Android Emulator)
- 1280 x 800 minimum screen resolution

SYSTEM REQUIREMENTS

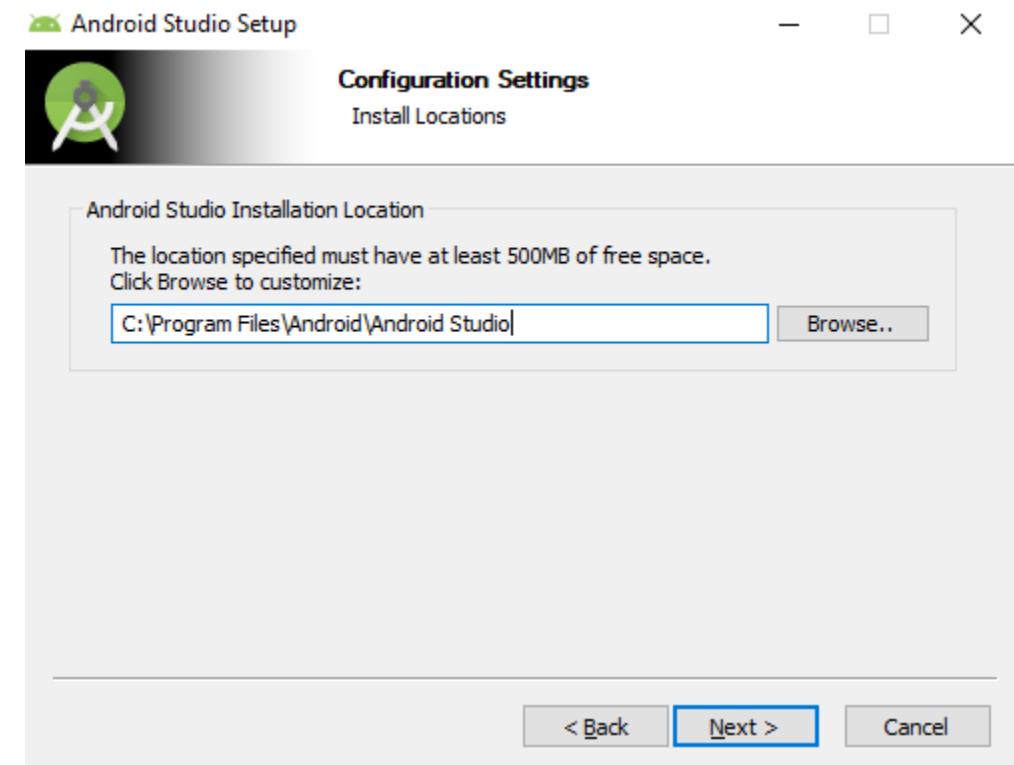
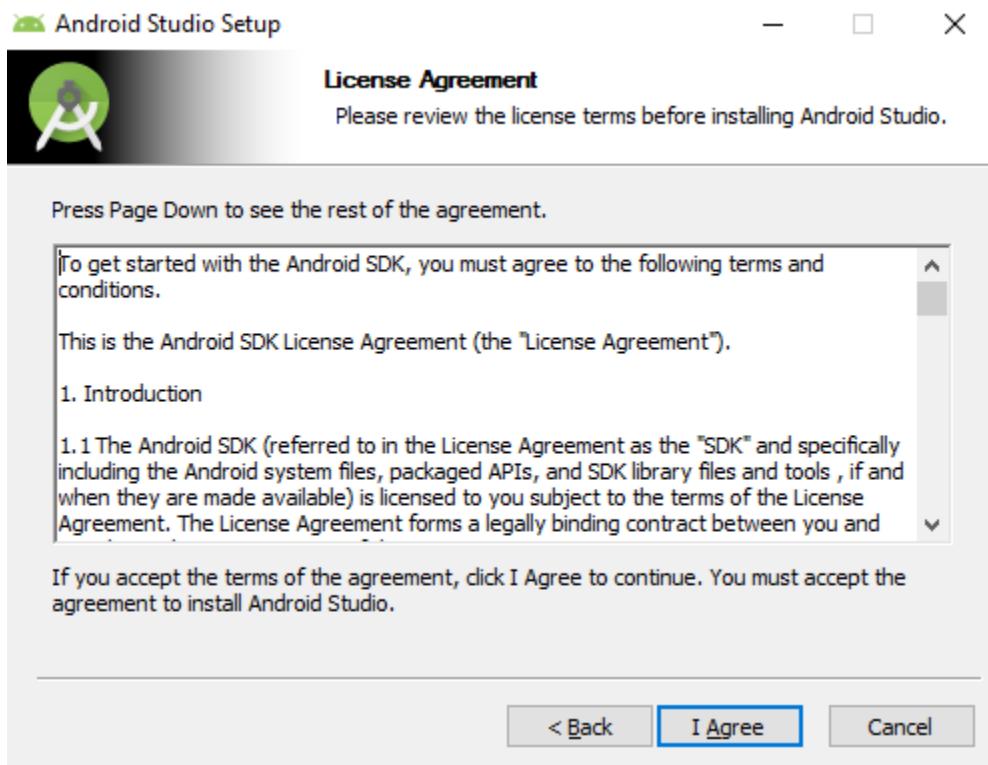
Chrome OS

- For information on recommended devices and specifications, as well as Android Emulator support, visit [chromeos.dev](#).

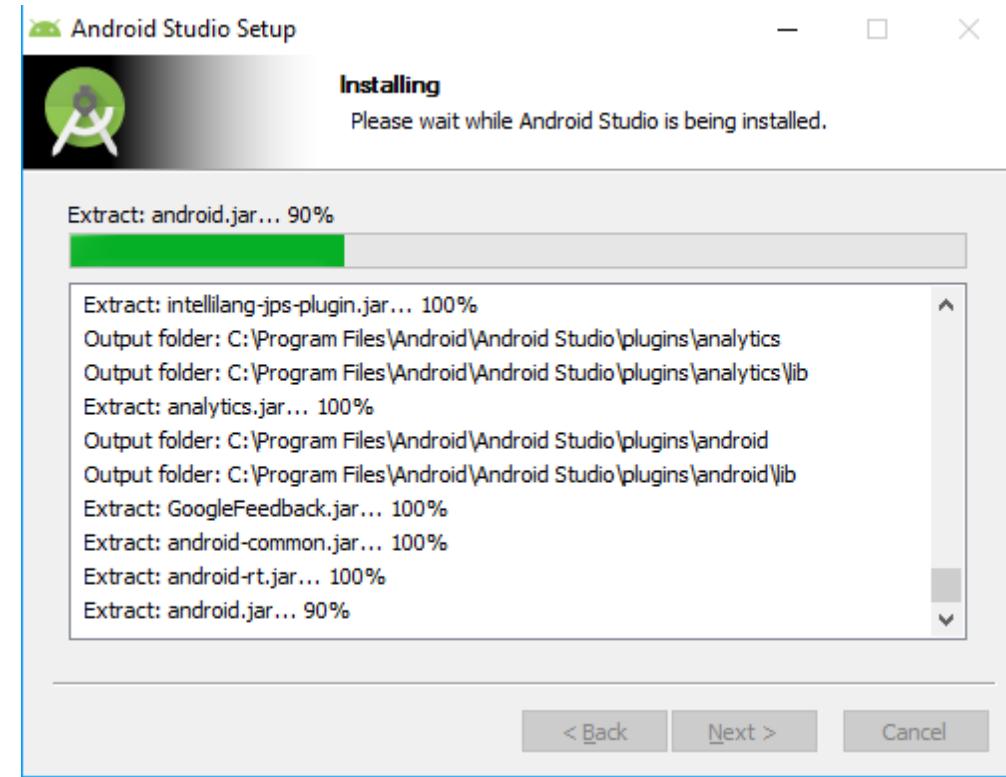
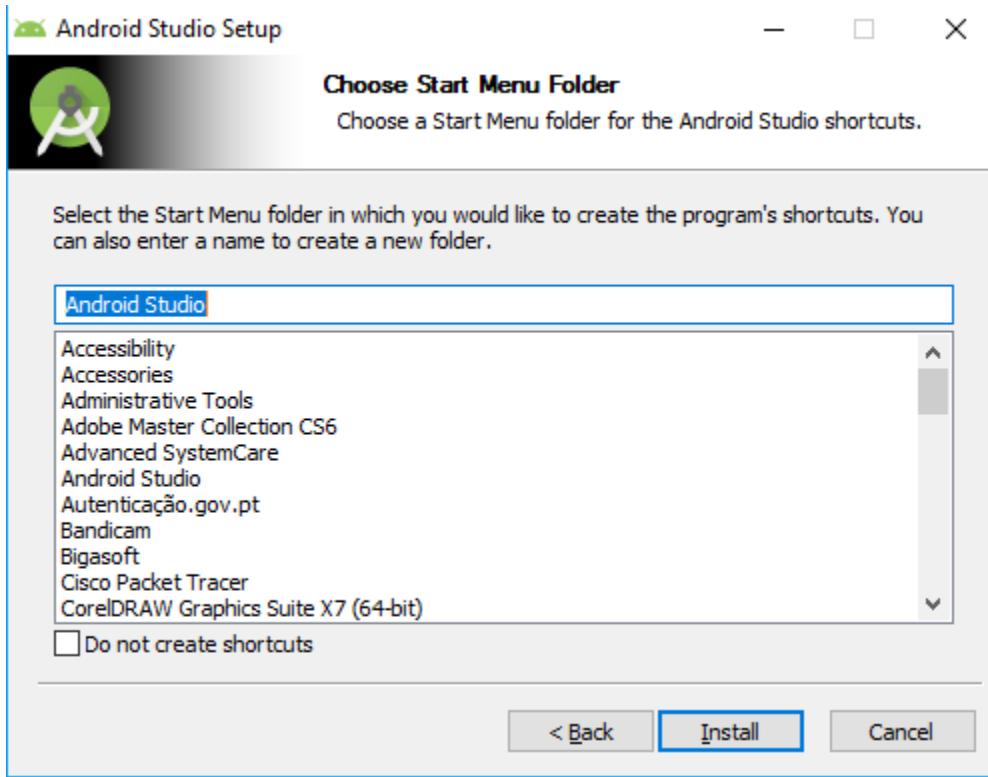
Instalação



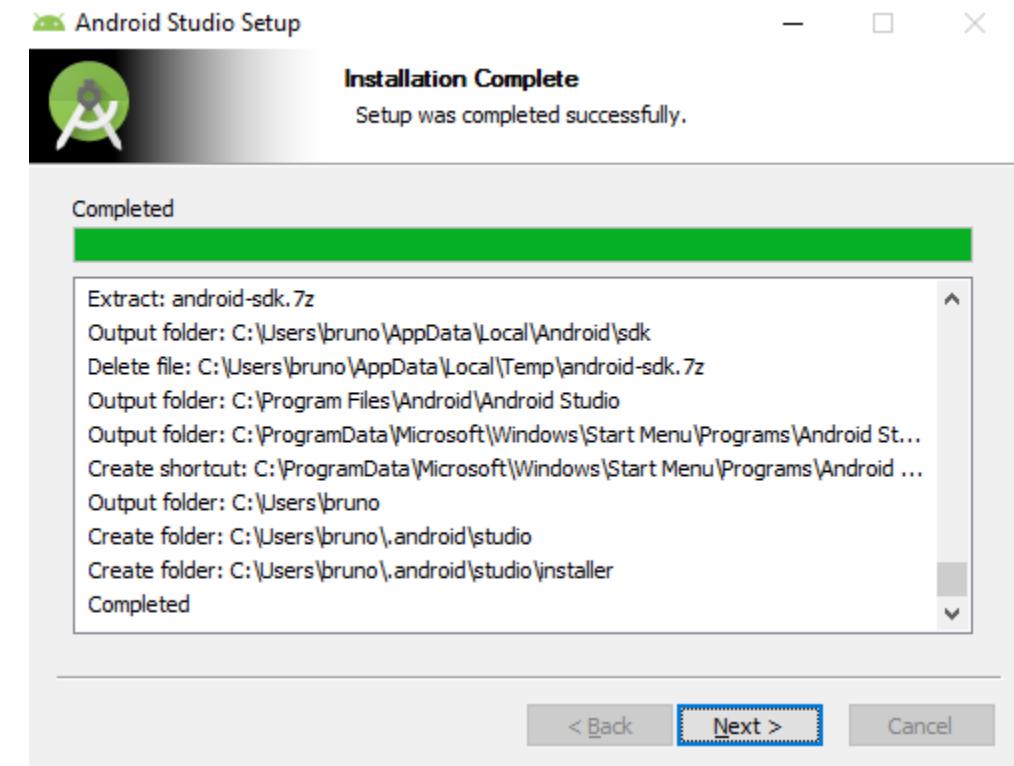
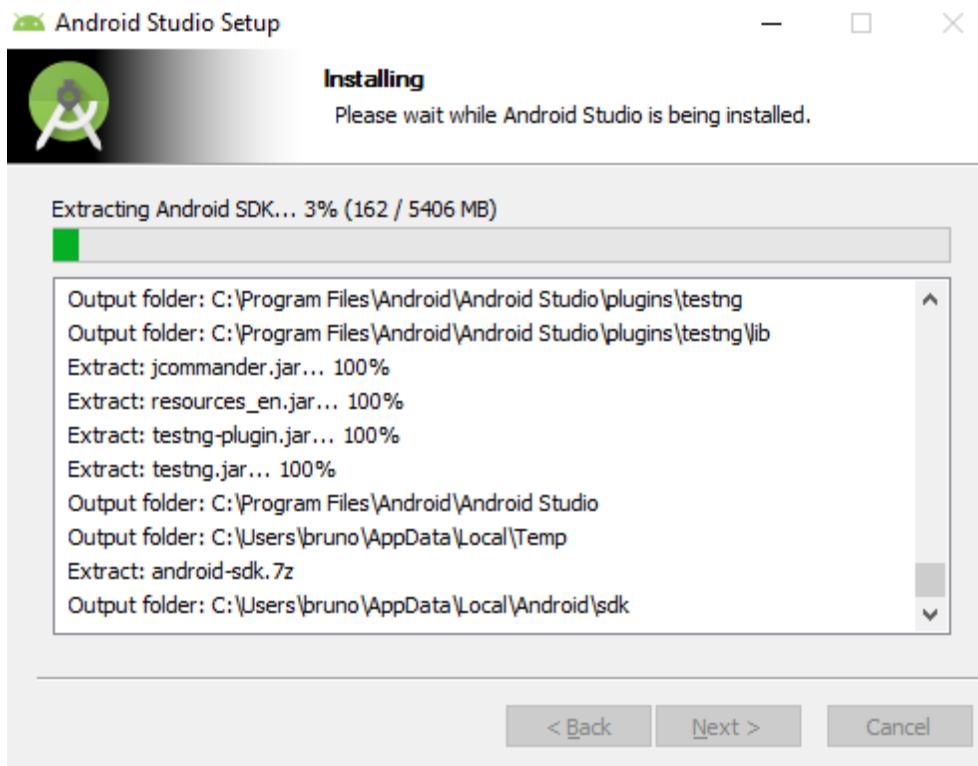
Instalação



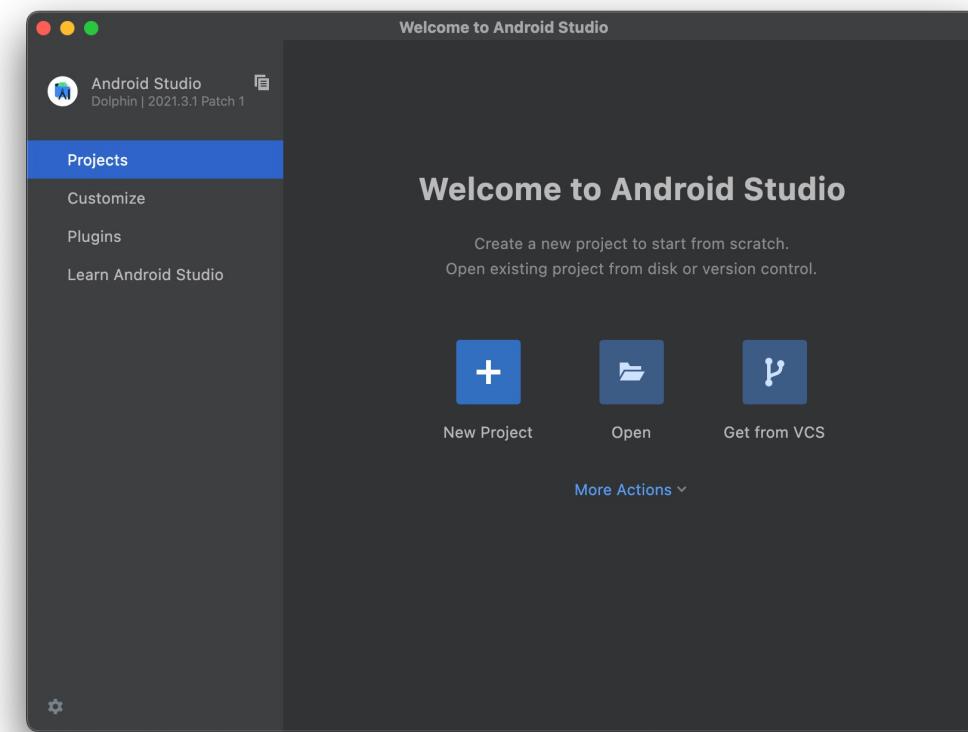
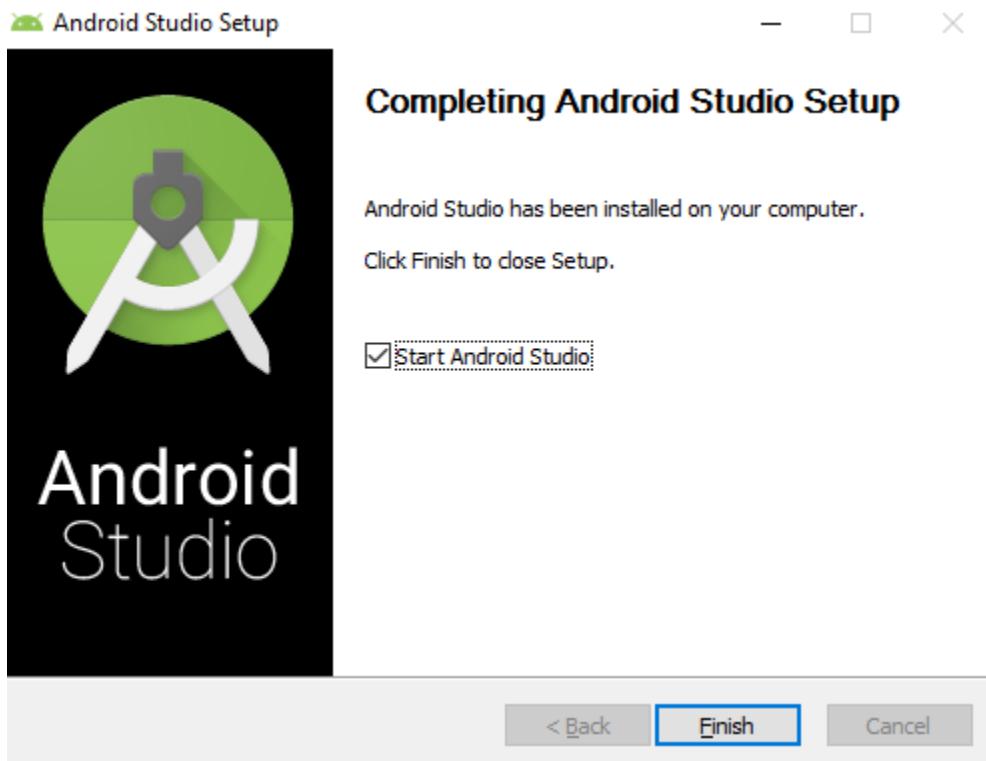
Instalação



Instalação

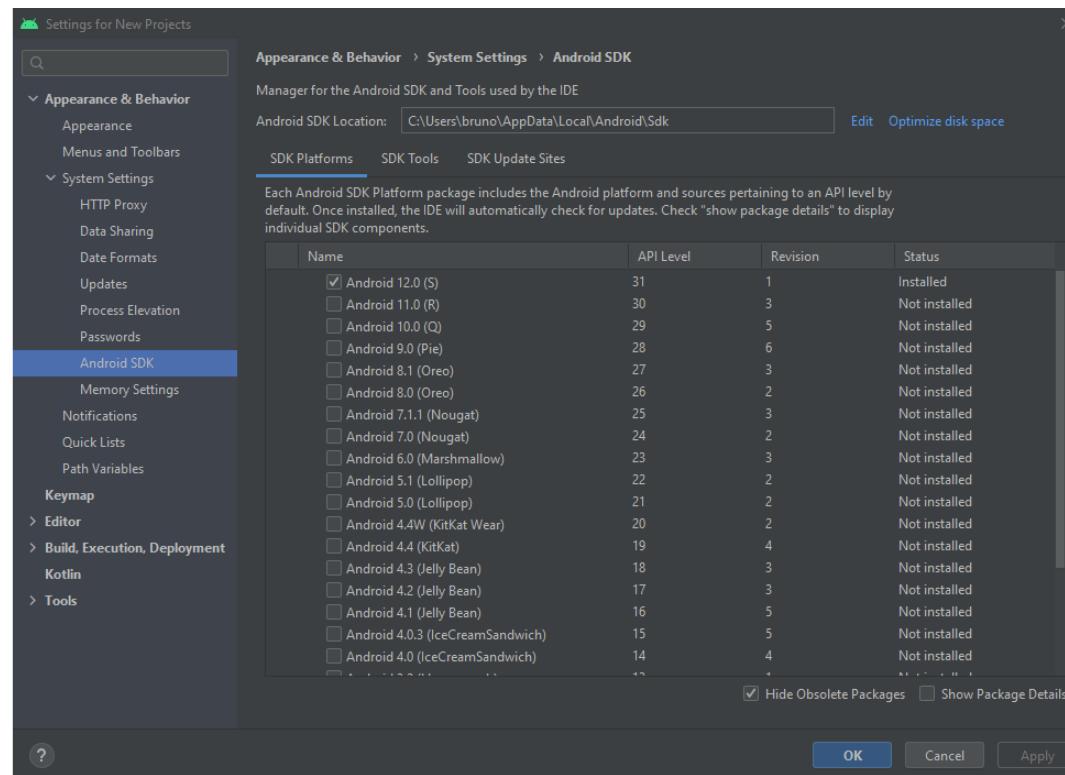


Instalação



Android SDK Manager

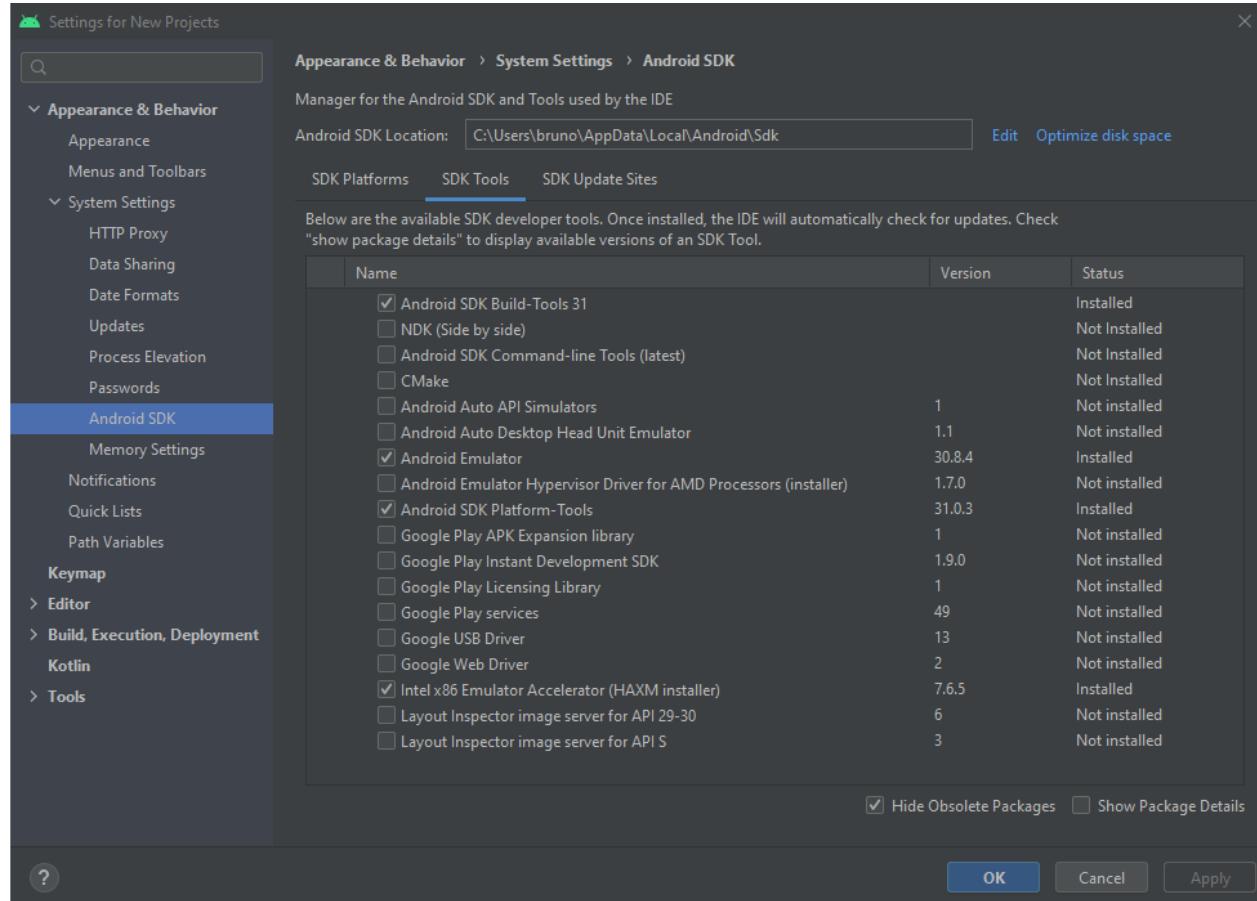
- Permite a configuração do Android Studio



Android SDK Manager



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Android SDK Manager



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- Android SDK (software development kit) – conjunto de ferramentas de desenvolvimento de aplicações para Android;
- GPU Debugging Tools – permite inspecionar o código de desenvolvimento gráfico;
- LLDB – ferramenta de debug;
- NDK – utilização de código nativo em C/C++
- CMake – permite compilar código em C/C++
- HAXM (Hardware Accelerated Execution Manager) – ferramenta de aceleração por hardware

Java vs Kotlin

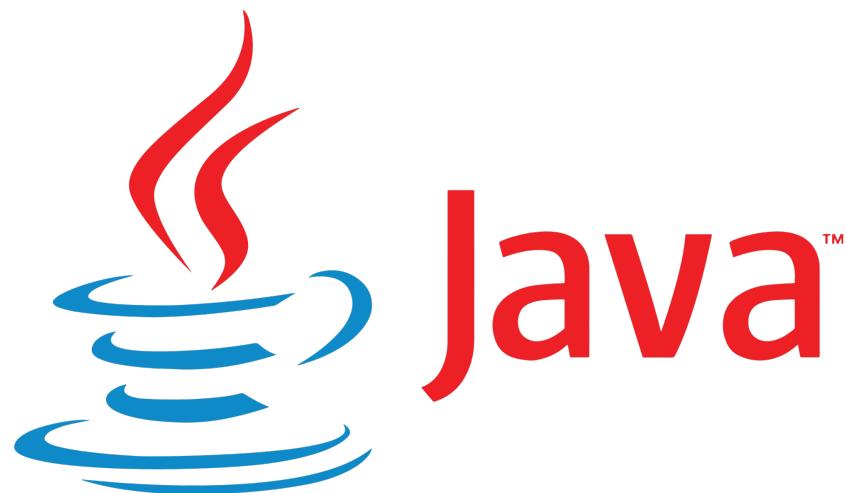
PASSADO

PRESENTE

FUTURO

PRESENTE

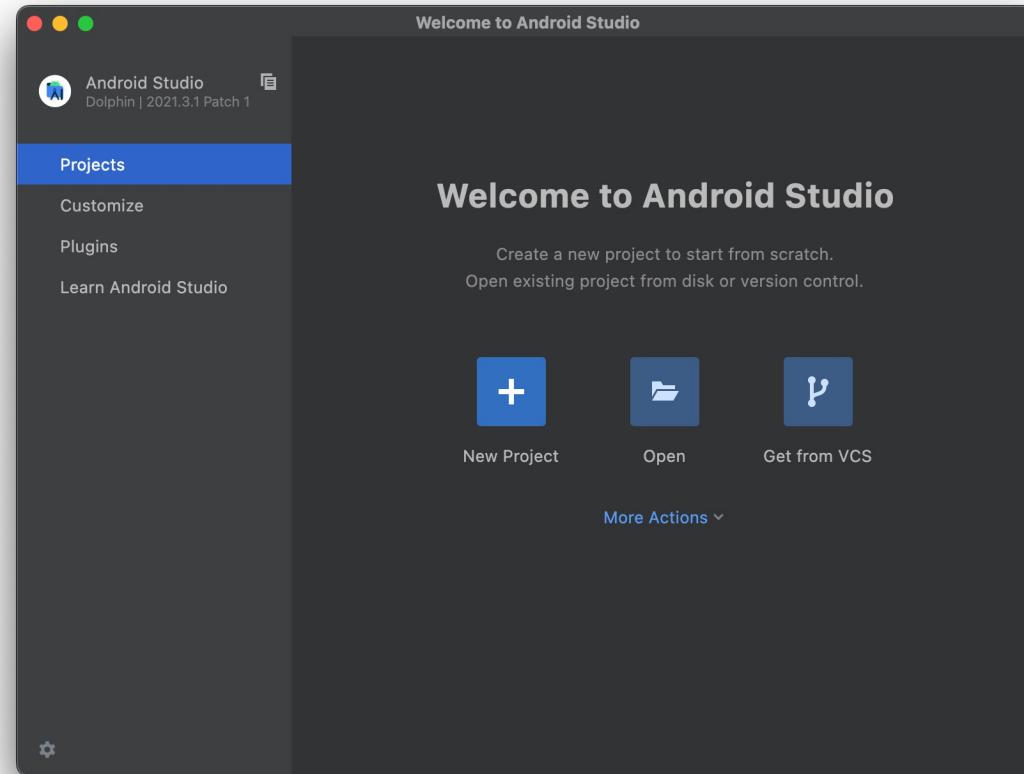
FUTURO



Android Studio



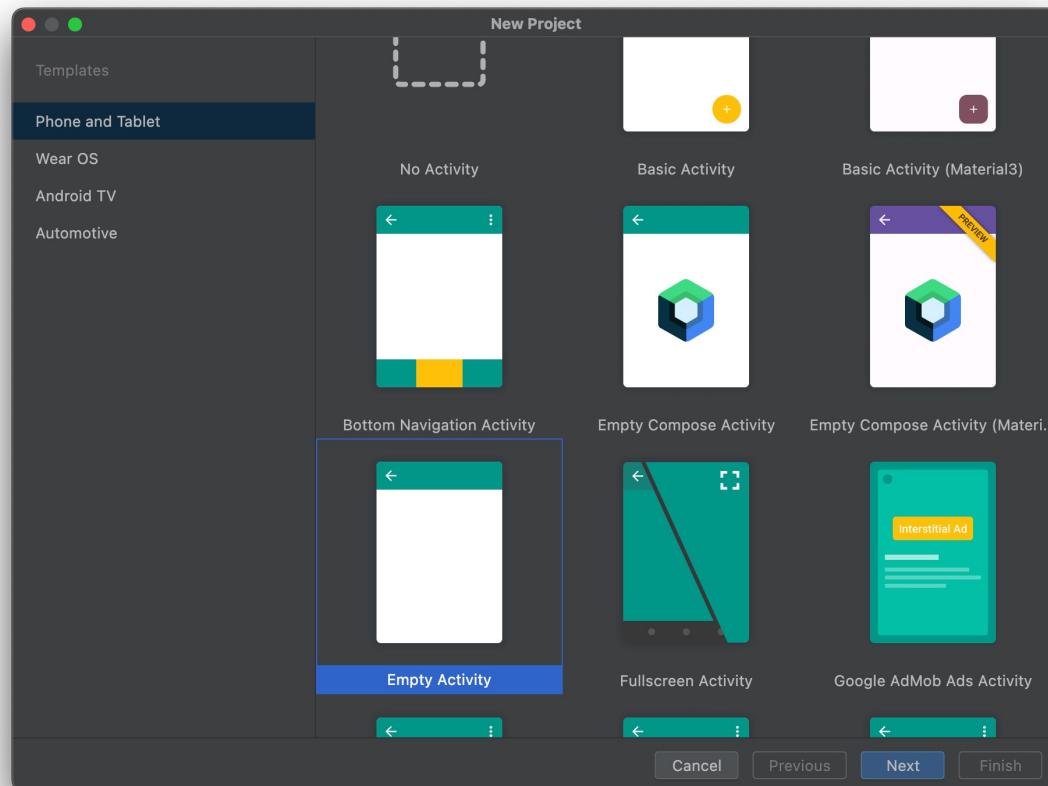
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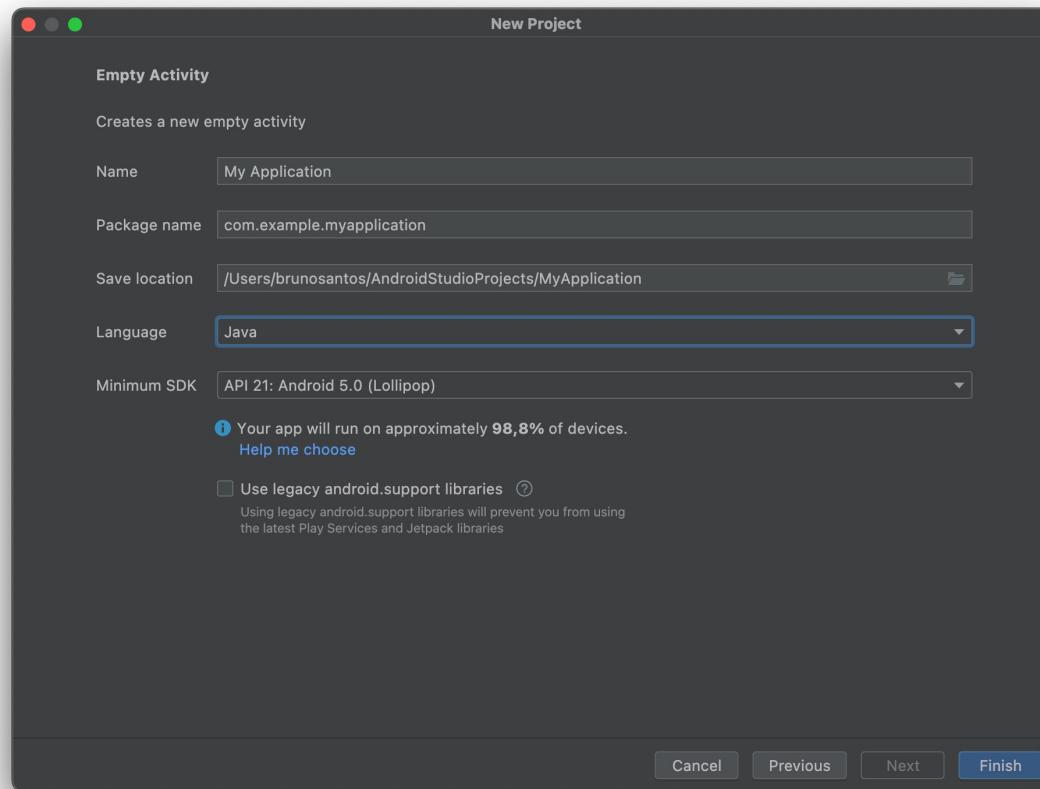
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Android Studio



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Android Studio



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A screenshot of the Android Studio interface. The top bar shows the title "My Application - MainActivity.java [My_Application.app]" and various tool icons. The left sidebar has tabs for "Project", "Resource Manager", "Build Variants", "Favorites", and "Structure". The "Project" tab is selected, showing a tree view of the project structure under "app": "manifests", "java" (which is expanded to show "com.example.myapplication" and "MainActivity"), "res", and "Gradle Scripts". The "Structure" tab is also visible. The main editor window displays the Java code for "MainActivity.java". The code is as follows:

```
package com.example.myapplication;

import ...

public class MainActivity extends AppCompatActivity {

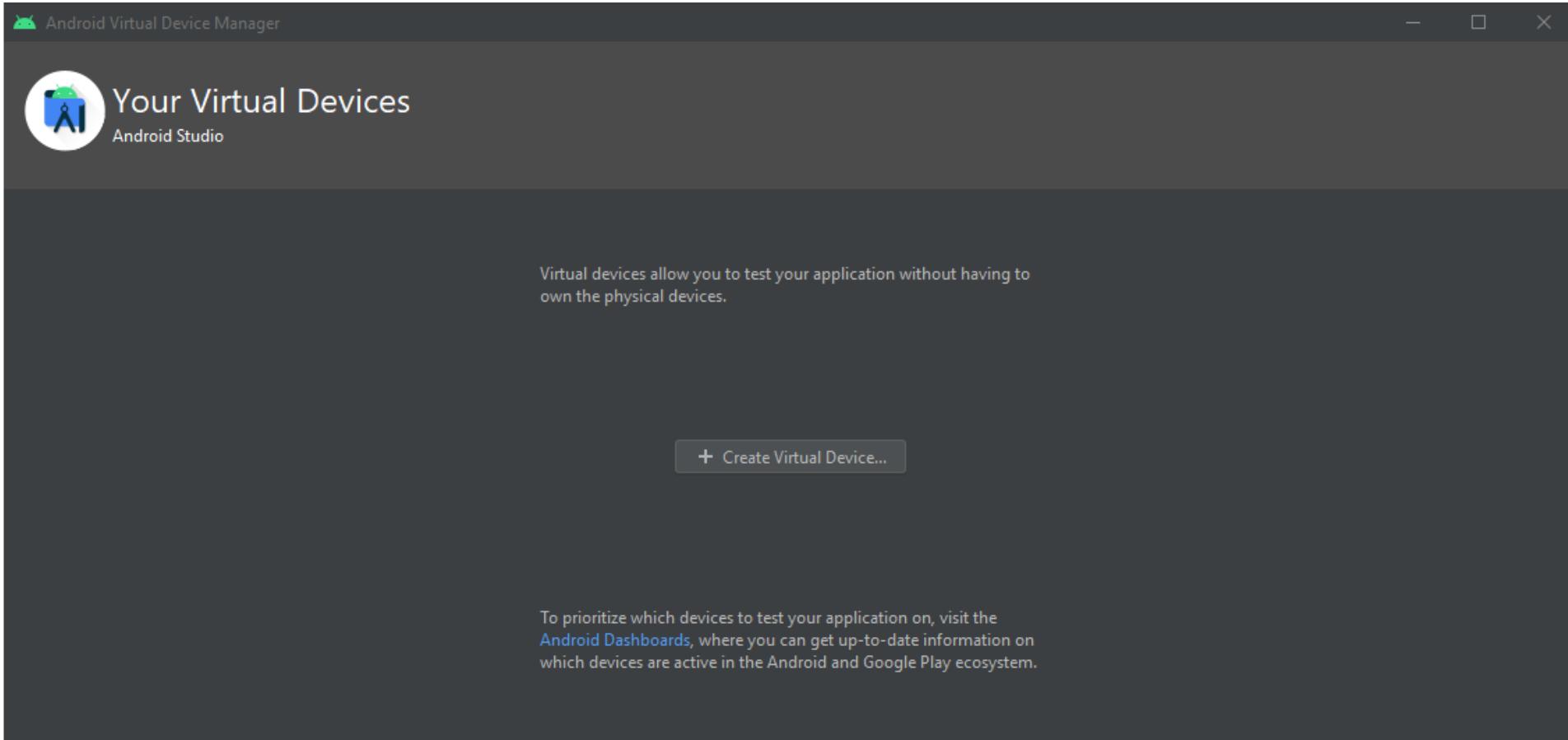
    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }
}
```

The code editor has syntax highlighting for Java keywords and comments. The bottom of the screen shows the standard Android Studio navigation bar with icons for "TODO", "Problems", "Terminal", "Build", "Logcat", "Profiler", "App Inspection", "Event Log", "Layout Inspector", and other developer tools. A status bar at the bottom indicates "daemon started successfully (moments ago)" and "Indexing library 'Gradle: androidx.core:core:1.5.0@aar'".

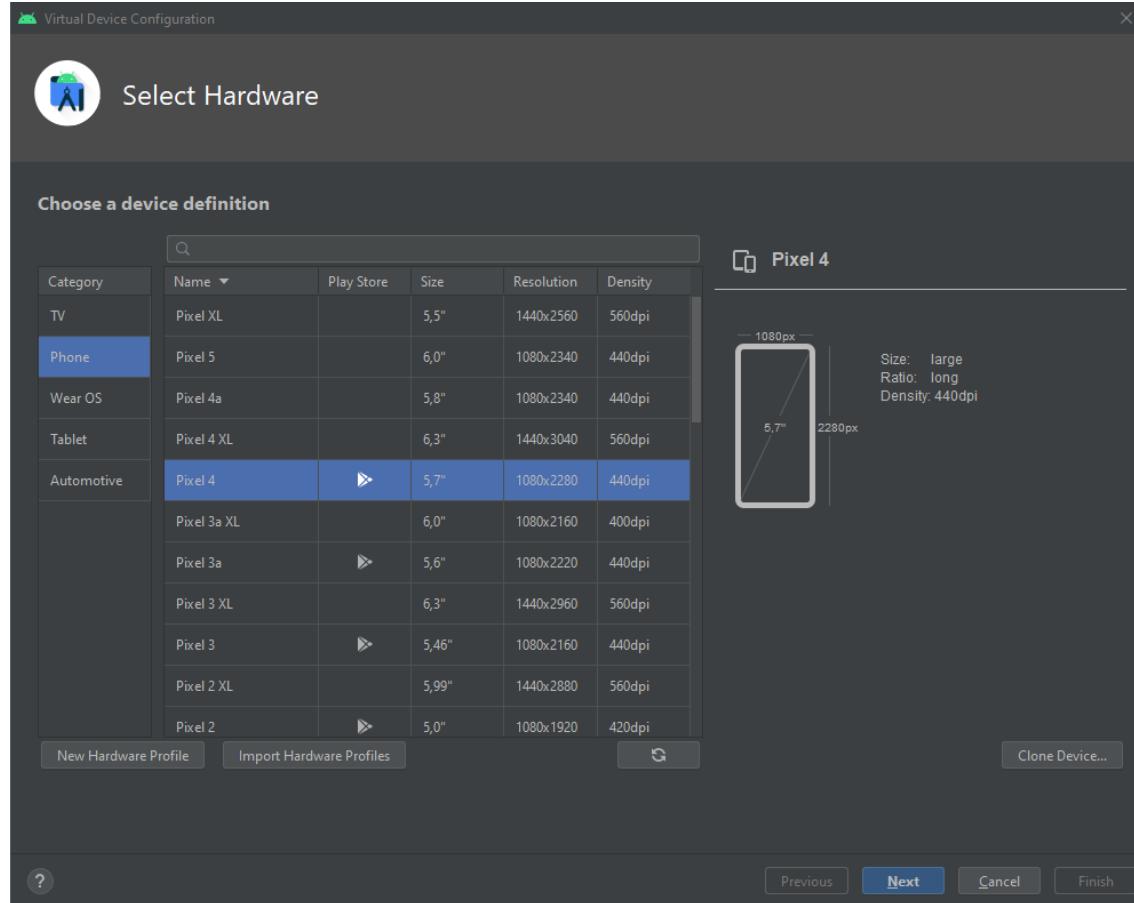
AVD Manager (Android Virtual Device Manager)



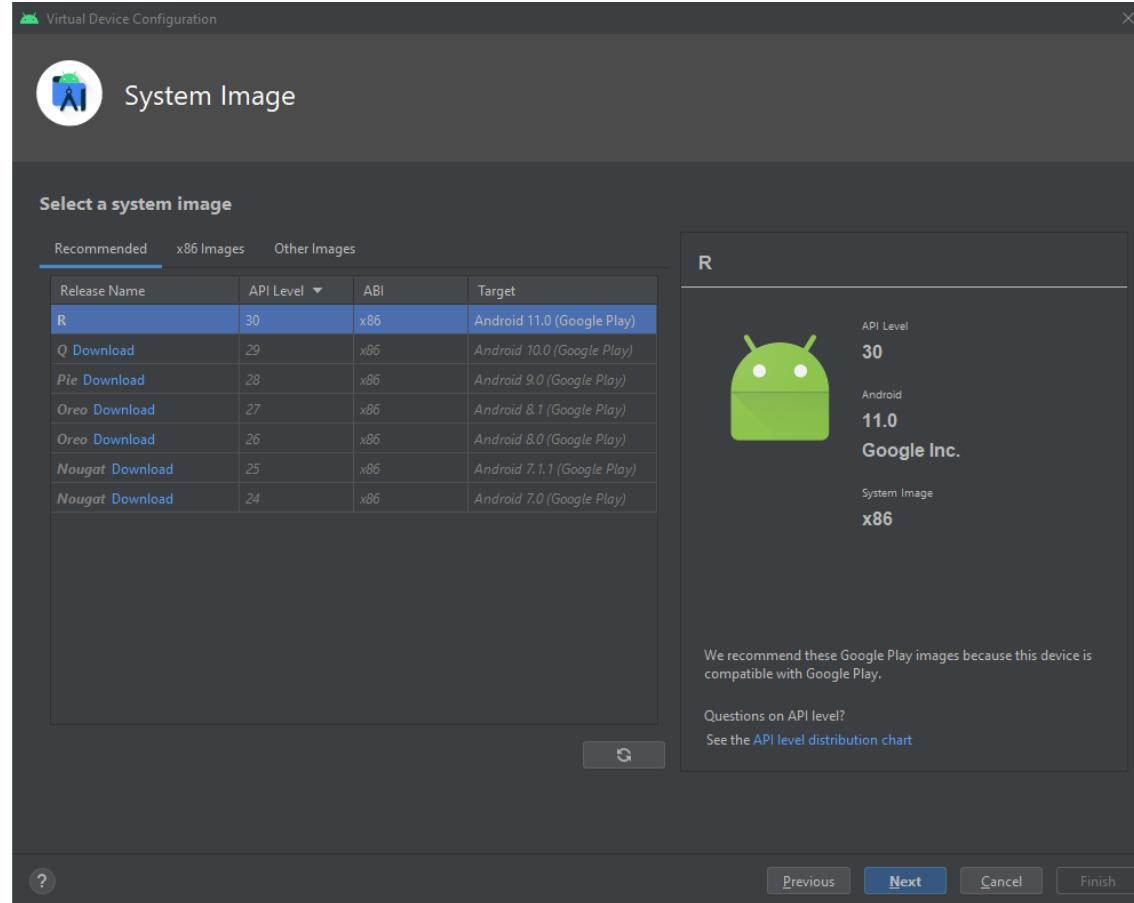
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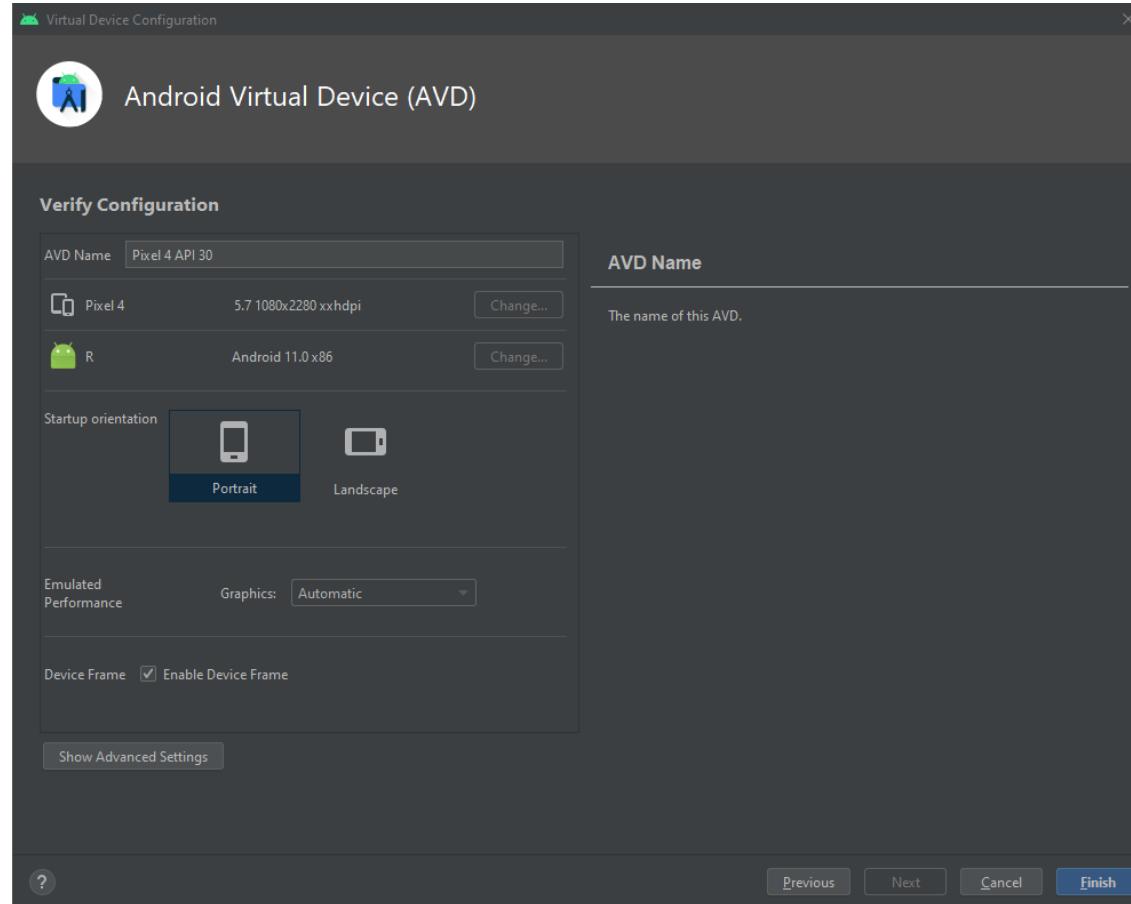
AVD Manager (Android Virtual Device Manager)



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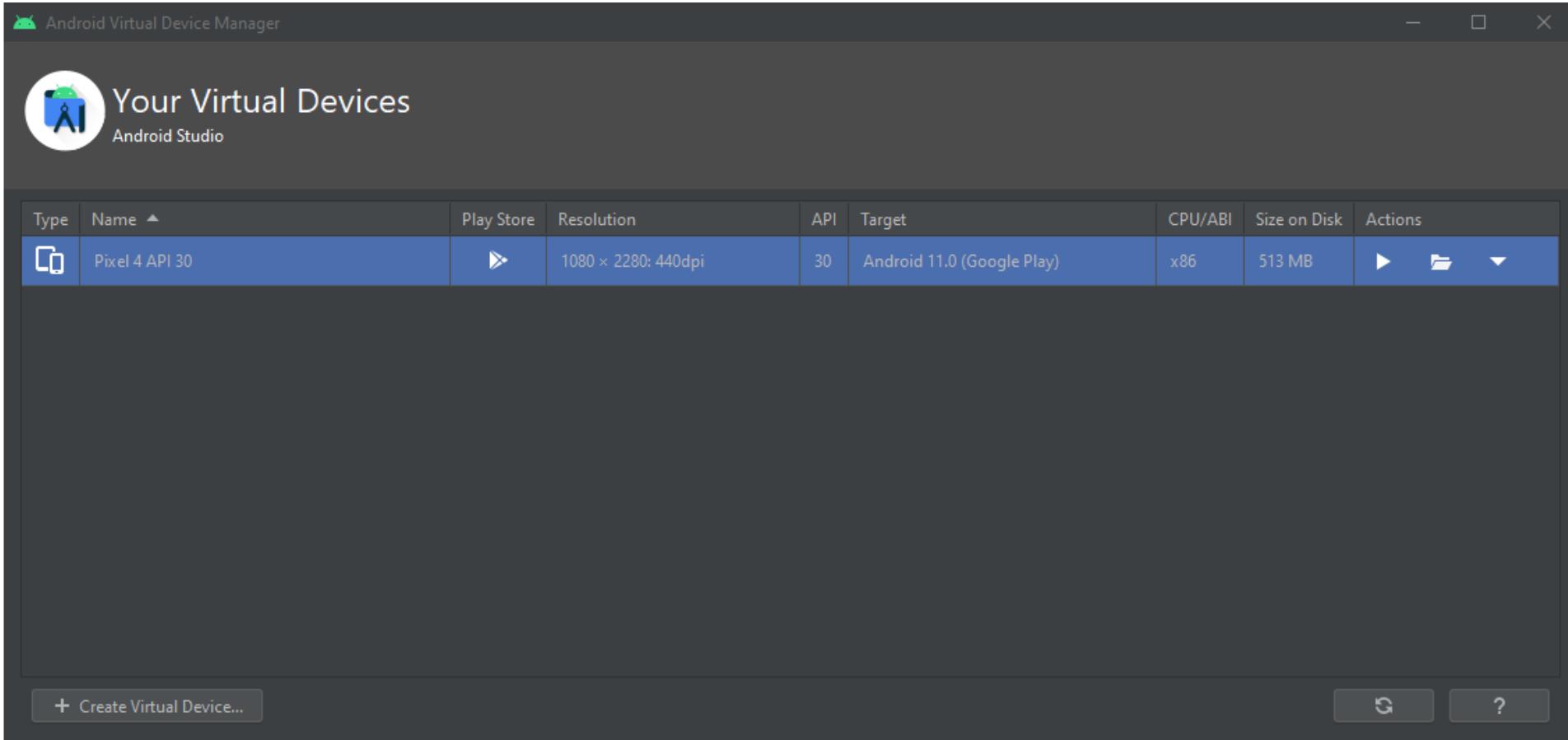
AVD Manager (Android Virtual Device Manager)



AVD Manager (Android Virtual Device Manager)



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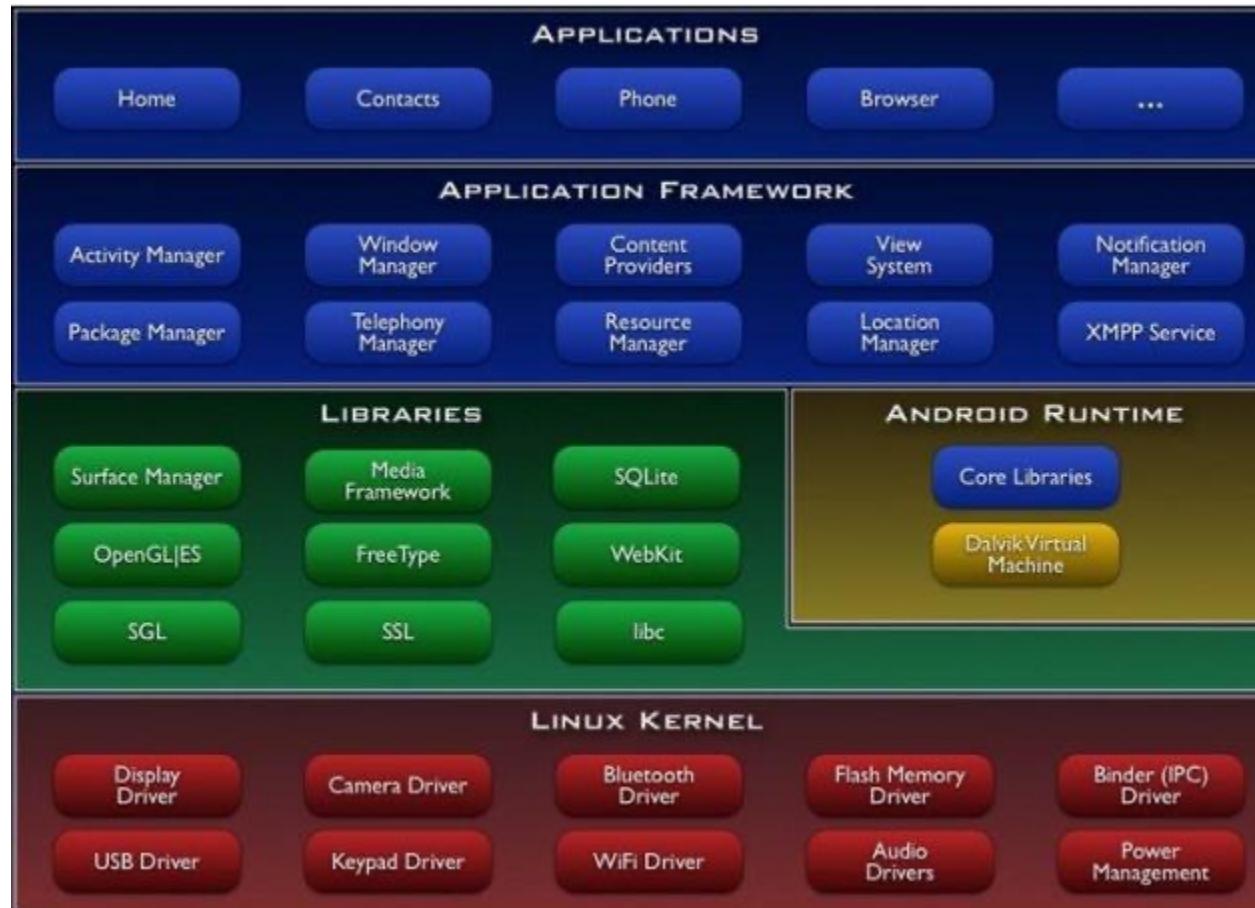
AVD Manager (Android Virtual Device Manager)



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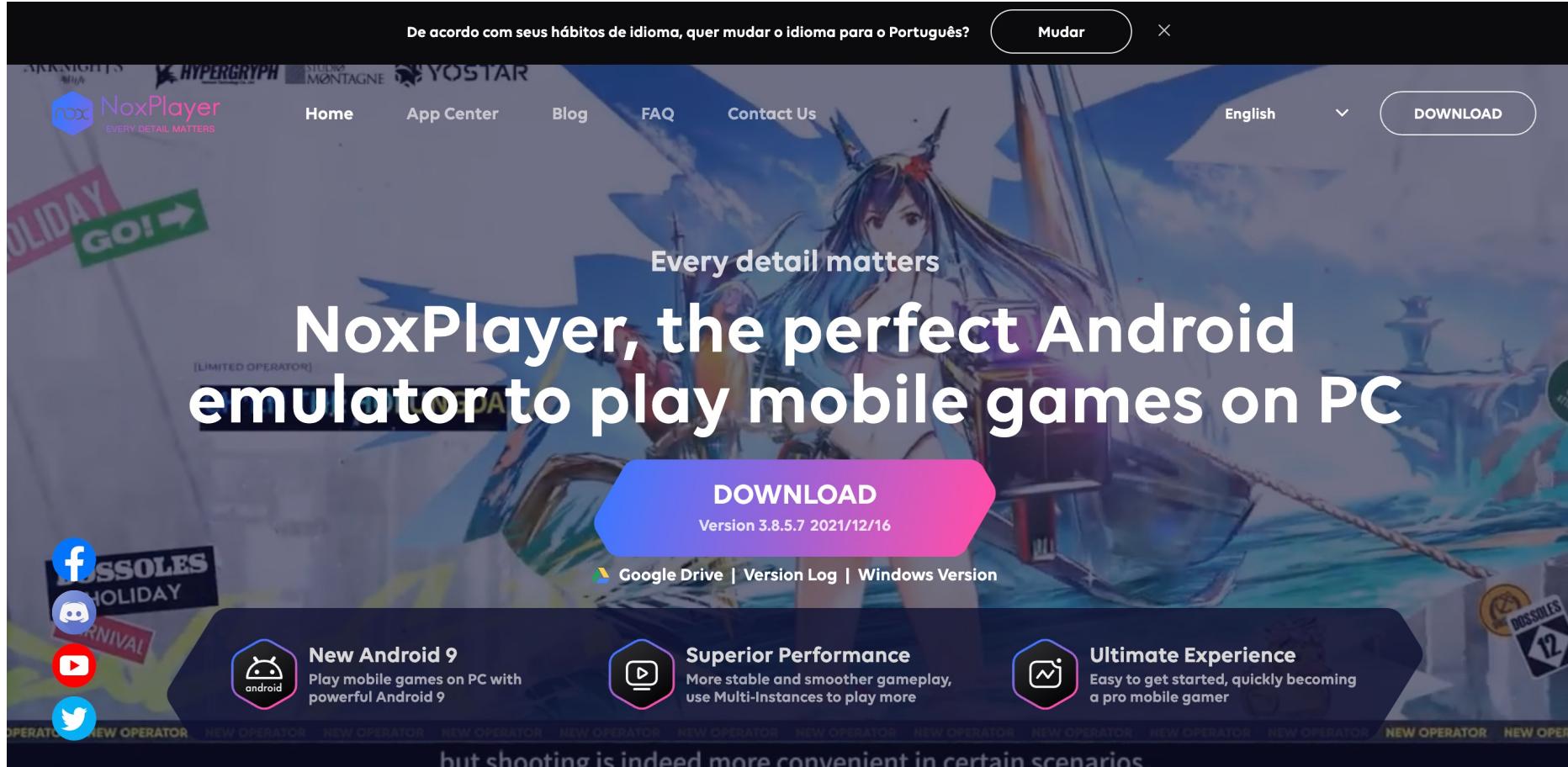
Arquitetura Android



Nox App Player



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The image shows the homepage of the NoxPlayer website. At the top, there is a banner with the text "De acordo com seus hábitos de idioma, quer mudar o idioma para o Português?" with a "Mudar" button and a close "X". Below the banner, the NoxPlayer logo is visible along with links for Home, App Center, Blog, FAQ, Contact Us, and a language selector set to English. A prominent "DOWNLOAD" button is located on the right side of the header. The main background features a vibrant illustration of a sailboat on the water with a city skyline in the background. The tagline "Every detail matters" is displayed in the center of the image. Below the tagline, the headline reads "NoxPlayer, the perfect Android emulator to play mobile games on PC". A large blue "DOWNLOAD" button with the text "Version 3.8.5.7 2021/12/16" is centered. Below this button are links to Google Drive, Version Log, and Windows Version. At the bottom of the page, there are three sections: "New Android 9" (Play mobile games on PC with powerful Android 9), "Superior Performance" (More stable and smoother gameplay, use Multi-Instances to play more), and "Ultimate Experience" (Easy to get started, quickly becoming a pro mobile gamer). The footer contains social media icons for Facebook, Twitter, YouTube, and LinkedIn, along with a "but shooting is indeed more convenient in certain scenarios." note.