

HOW TO

DEVELOP AN APP

IN ANDROID STUDIO

TABLE OF CONTENTS

Introduction	1
Audience	1
Getting Ready	1
Tools	1
Download and Install Java Development Kit (Version 7 or Higher)	2
Download and Install Android Studio	2
Install a Windows driver to Detect your Android Device	3
Check that your Android Device is Connected to Android Studio	4
Setup the Android Emulator	4
Tools Checklist	4

1. INTRODUCTION

Android is a mobile operating system developed by Google for smartphones and tablets. An Android application, or 'app', is a computer program that runs on these devices. People use apps for many reasons like communicating with friends, learning new things, tracking exercise, and playing games. Useful, stylish apps are in demand and app development is a valuable skill. This document outlines the tools you need to create an app, describes the creation of the app, and explains what to do with your app when it is finished.

2. AUDIENCE

This guide is for readers who want to build their own app and have a beginner's interest in computer technology. Readers should have access to a Windows 10 Operating System and be familiar with tasks such as downloading files, installing software, and opening, closing, and saving files.

3. GETTING READY

This section lists the tools you need to create your Android app, and explains where to find them, how to download them, and how to install them on your computer. By the end of this section, you will be ready to develop your app.

1. TOOLS

- Java Development Kit (Version 7 or later)
- Android Studio
- Android Device (Version 4.2 or later) **or** Android Emulator
- USB cable
- Internet access

2. CHECK YOUR COMPUTER FOR JAVA DEVELOPMENT KIT (VERSION 7 OR LATER)

Important! *DO NOT* download Android Studio until Java Development Kit (Version 7 or higher) is installed on your computer.

1. In the lower left corner of your computer screen, type Run in the search bar.
2. Under Best Match, double-click on Run (Desktop App) to open a dialog box.
3. In the dialog box, type cmd in the search bar and click OK to open the Terminal.
4. In the Terminal window, type java -version and press Enter. The Terminal window displays the version of Java on your computer or reports that you do not have Java on your computer.

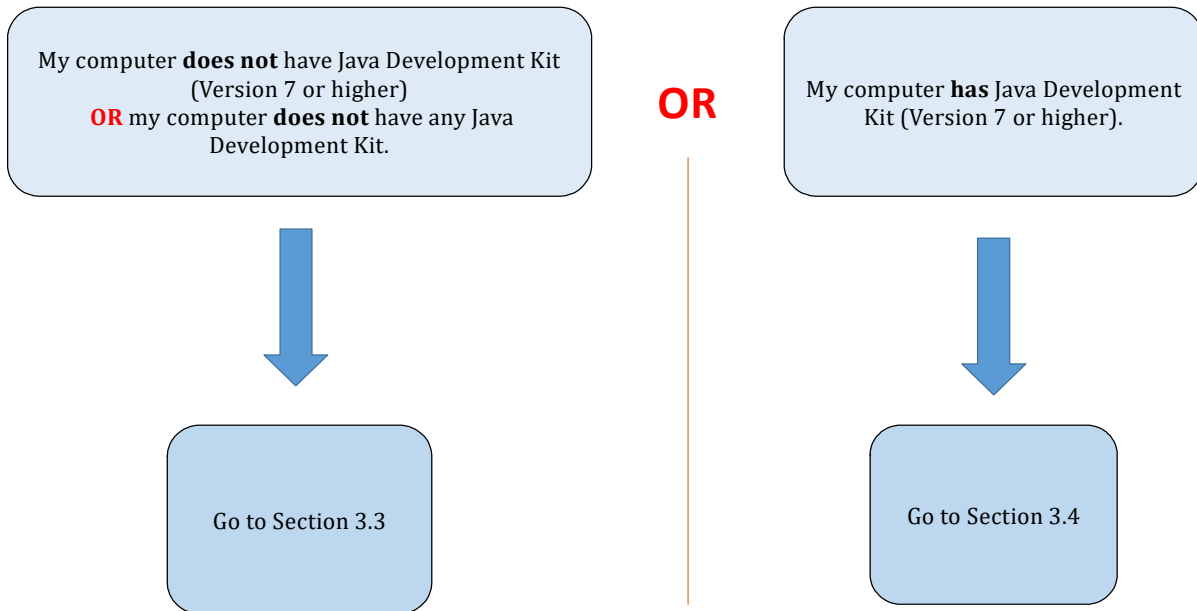


Figure 1: Next actions for Java Development Kit (Version 7 or later).

3. DOWNLOAD AND INSTALL JAVA DEVELOPMENT KIT (VERSION 7 OR HIGHER)

1. Open a web browser and go to www.oracle.com//technetwork/java/javase/downloads
2. On the left of the screen, double-click on the Java icon.
3. Navigate to the Java SE Development Kit 8u65.
4. Depending on your operating system, select the link for either Windows x86 **or** Windows x64.
5. When the download is complete, a Java Installation Wizard opens. Follow the on-screen instructions.
6. Verify that Java Development Kit (Version 7 or higher) installed to your computer by repeating steps 1-4 of Section 3.2.

4. DOWNLOAD AND INSTALL ANDROID STUDIO

1. Go to developer.android.com.
2. Click Download Android Studio for Windows.
3. When your download finishes, launch the .exe file.
4. To install Android Studio, follow the instructions of the on-screen Set-Up Wizard.

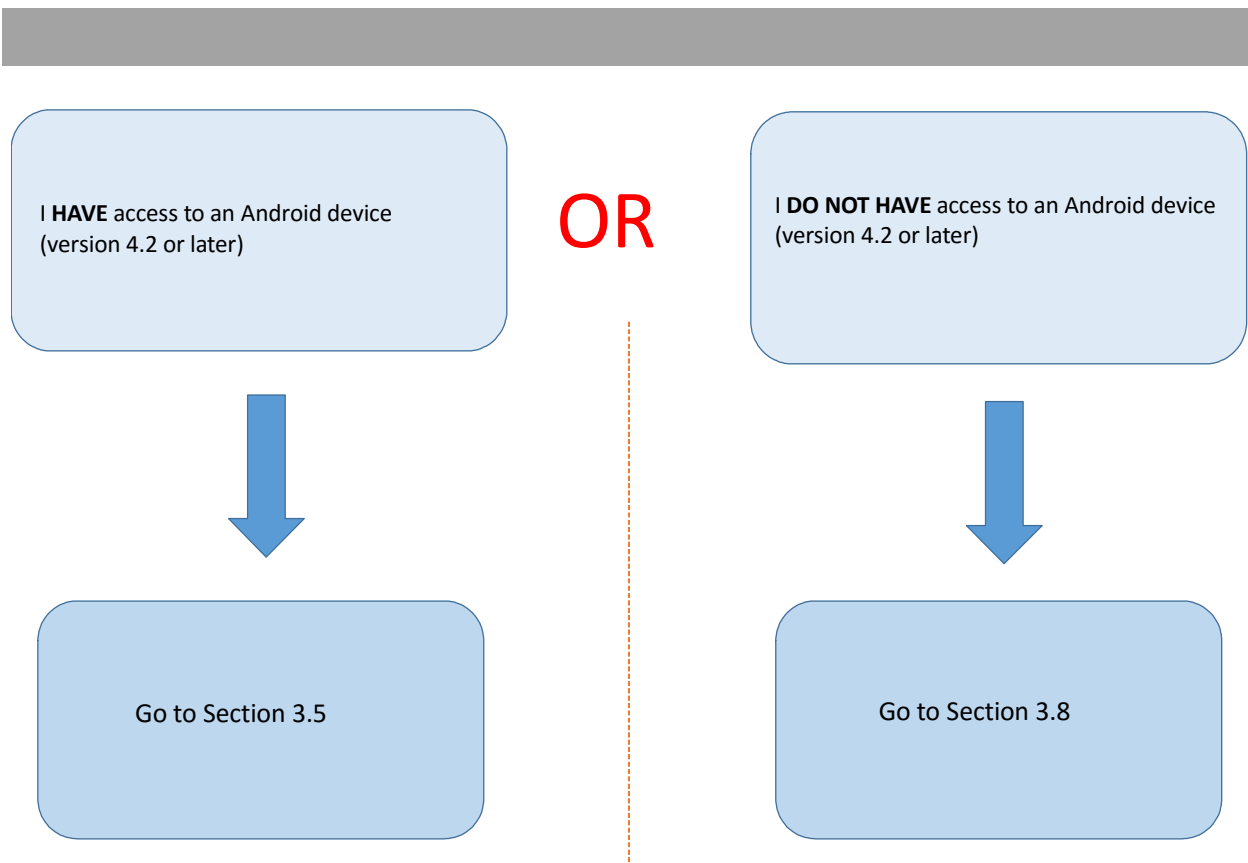


Figure 2: Next actions for Android device (version 4.2 or later).

5. CONNECT YOUR ANDROID DEVICE TO ANDROID STUDIO

1. On your Android device, go to Settings and scroll down to About Phone.
2. In About Phone, tap 'Build Number' 7 times to display a message that reads 'You are now a developer.'
3. Return to About Phone and select Developer Options.
4. Scroll down to USB Debugging and select Enable.
5. Using a USB cable, connect your Android device to your computer.

6. INSTALL A WINDOWS DRIVER TO DETECT YOUR ANDROID DEVICE

1. Go to developer.android.com/tools/extras/oem-usb.html.
2. Scroll down to find your Android device and click on the corresponding Windows driver to download a zip folder.
3. Unzip the folder, go to This PC and select Manage.
4. In the left pane, select Device Manager and find Other Devices.
5. Expand Other Devices to see your Android device or the Android Debug Interface (ADB).
6. Right-click on your Android device or the ADB and select Update Driver Software to launch a Set-Up wizard.
7. To update your driver software, follow the on-screen instructions.

7. CHECK THAT YOUR ANDROID DEVICE IS CONNECTED TO ANDROID STUDIO

1. Launch Android Studio.
2. On the ribbon at the top of the screen, click the green play button and wait 10 seconds. The Choose a Running Device dialog box opens. Find your device's name in the dialog box.
3. Select the button next to your device's name. Ensure that Launch Emulator is not selected.
4. Select Phone and click OK. After five seconds, the 'Hello World' message displays on your Android device.

8. SETUP THE ANDROID EMULATOR

1. Launch Android Studio.
2. To start the Android Emulator, click on the green run button on the ribbon at the top of the screen.
3. On the dialog box that opens, select Launch Emulator.
4. The drop-down menu next to Launch Emulator displays one device called Nexus 5 API21x86. Select this device and click OK. After 10 seconds, a black phone appears on the screen of your Android device.
5. Wait for the Android Loading screen to finish, then click and drag the home button upwards in a swiping motion to open the Android Emulator. The Android Studio app automatically appears on the Android Emulator.

9. TOOLS CHECKLIST

Table 1: Tools Checklist

TOOL	ACTION	CHECK
Java Development Kit (Version 7 or Later)	Installed	
Android Studio	Installed	
Android Device and Windows Driver	Connected and Detecting Android Device	
OR	OR	
Android Emulator	Displays Android Studio App	

1. INTRODUCTION

Android is a mobile operating system developed by Google for smartphones and tablets. An Android application, or 'app', is a computer program that runs on these devices. People use apps for many reasons like communicating with friends, learning new things, tracking exercise, and playing games. Useful, stylish apps are in demand and app development is a valuable skill. This document outlines the tools you need to create an app, describes the creation of the app, and explains what to do with your app when it is finished.

2. AUDIENCE

This guide is for readers who want to build their own app and have a beginner's interest in computer technology. Readers should have access to a Windows 10 Operating System and be familiar with tasks such as downloading files, installing software, and opening, closing, and saving files.

3. GETTING READY

This section lists the tools you need to create your Android app, and explains where to find them, how to download them, and how to install them on your computer. By the end of this section, you will be ready to develop your app.

1. TOOLS

- Java Development Kit (Version 7 or later)
- Android Studio
- Android Device (Version 4.2 or later) **or** Android Emulator
- USB cable
- Internet access

2. CHECK YOUR COMPUTER FOR JAVA DEVELOPMENT KIT (VERSION 7 OR LATER)

Important! *DO NOT* download Android Studio until Java Development Kit (Version 7 or higher) is installed on your computer.

1. In the lower left corner of your computer screen, type Run in the search bar.
2. Under Best Match, double-click on Run (Desktop App) to open a dialog box.
3. In the dialog box, type cmd in the search bar and click OK to open the Terminal.
4. In the Terminal window, type java -version and press Enter. The Terminal window displays the version of Java on your computer or reports that you do not have Java on your computer.

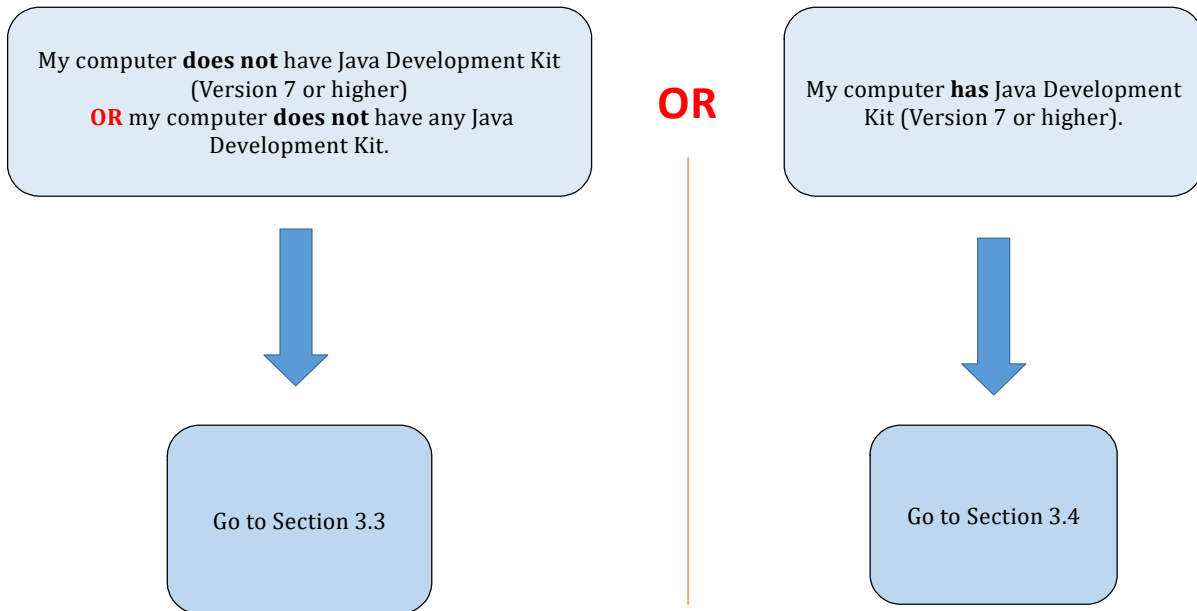


Figure 1: Next actions for Java Development Kit (Version 7 or later).

3. DOWNLOAD AND INSTALL JAVA DEVELOPMENT KIT (VERSION 7 OR HIGHER)

1. Open a web browser and go to www.oracle.com//technetwork/java/javase/downloads
2. On the left of the screen, double-click on the Java icon.
3. Navigate to the Java SE Development Kit 8u65.
4. Depending on your operating system, select the link for either Windows x86 **or** Windows x64.
5. When the download is complete, a Java Installation Wizard opens. Follow the on-screen instructions.
6. Verify that Java Development Kit (Version 7 or higher) installed to your computer by repeating steps 1-4 of Section 3.2.

4. DOWNLOAD AND INSTALL ANDROID STUDIO

1. Go to developer.android.com.
2. Click Download Android Studio for Windows.
3. When your download finishes, launch the .exe file.
4. To install Android Studio, follow the instructions of the on-screen Set-Up Wizard.

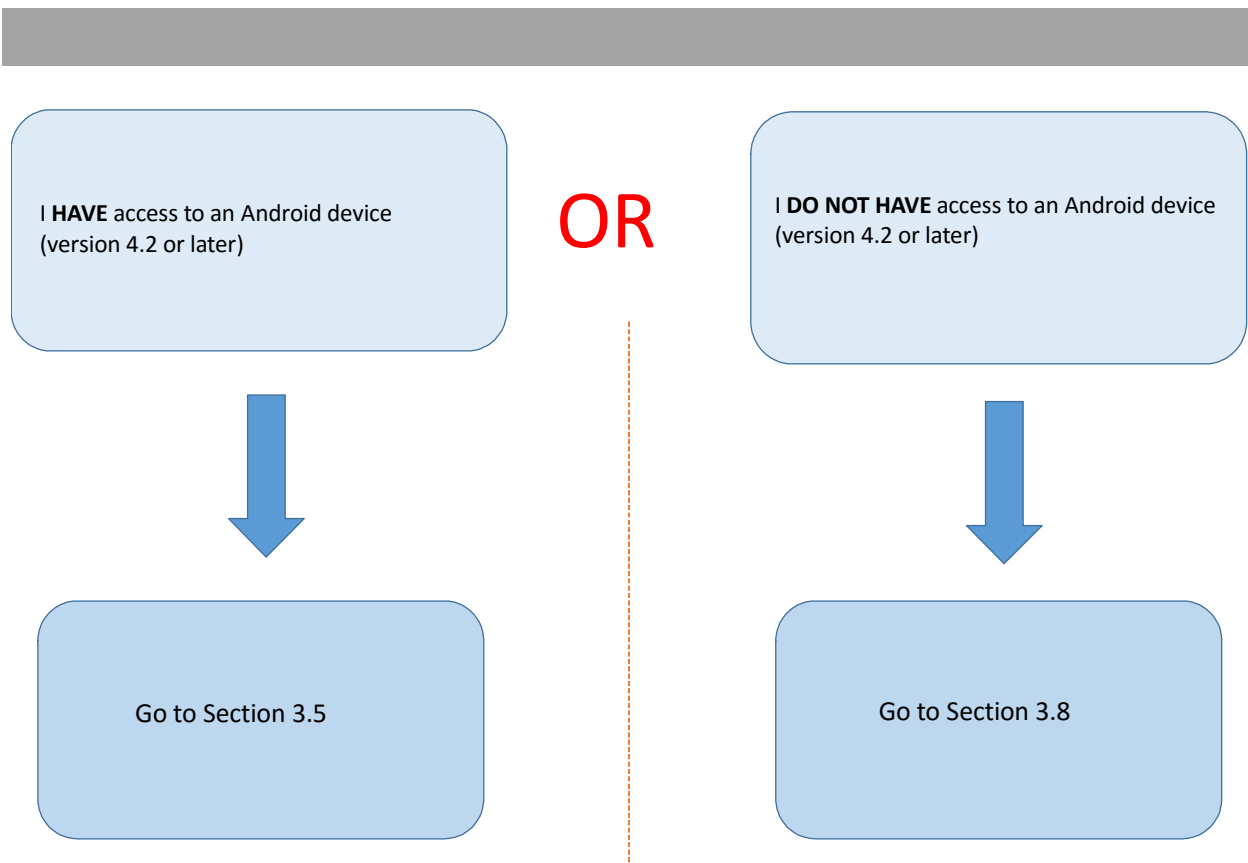


Figure 2: Next actions for Android device (version 4.2 or later).

5. CONNECT YOUR ANDROID DEVICE TO ANDROID STUDIO

1. On your Android device, go to Settings and scroll down to About Phone.
2. In About Phone, tap 'Build Number' 7 times to display a message that reads 'You are now a developer.'
3. Return to About Phone and select Developer Options.
4. Scroll down to USB Debugging and select Enable.
5. Using a USB cable, connect your Android device to your computer.

6. INSTALL A WINDOWS DRIVER TO DETECT YOUR ANDROID DEVICE

1. Go to developer.android.com/tools/extras/oem-usb.html.
2. Scroll down to find your Android device and click on the corresponding Windows driver to download a zip folder.
3. Unzip the folder, go to This PC and select Manage.
4. In the left pane, select Device Manager and find Other Devices.
5. Expand Other Devices to see your Android device or the Android Debug Interface (ADB).
6. Right-click on your Android device or the ADB and select Update Driver Software to launch a Set-Up wizard.
7. To update your driver software, follow the on-screen instructions.

7. CHECK THAT YOUR ANDROID DEVICE IS CONNECTED TO ANDROID STUDIO

1. Launch Android Studio.
2. On the ribbon at the top of the screen, click the green play button and wait 10 seconds. The Choose a Running Device dialog box opens. Find your device's name in the dialog box.
3. Select the button next to your device's name. Ensure that Launch Emulator is not selected.
4. Select Phone and click OK. After five seconds, the 'Hello World' message displays on your Android device.

8. SETUP THE ANDROID EMULATOR

1. Launch Android Studio.
2. To start the Android Emulator, click on the green run button on the ribbon at the top of the screen.
3. On the dialog box that opens, select Launch Emulator.
4. The drop-down menu next to Launch Emulator displays one device called Nexus 5 API21x 86. Select this device and click OK. After 10 seconds, a black phone appears on the screen of your Android device.
5. Wait for the Android Loading screen to finish, then click and drag the home button upwards in a swiping motion to open the Android Emulator. The Android Studio app automatically appears on the Android Emulator.

9. TOOLS CHECKLIST

Table 1: Tools Checklist

TOOL	ACTION	CHECK
Java Development Kit (Version 7 or Later)	Installed	
Android Studio	Installed	
Android Device and Windows Driver	Connected and Detecting Android Device	
OR	OR	
Android Emulator	Displays Android Studio App	

1. INTRODUCTION

Android is a mobile operating system developed by Google for smartphones and tablets. An Android application, or 'app', is a computer program that runs on these devices. People use apps for many reasons like communicating with friends, learning new things, tracking exercise, and playing games. Useful, stylish apps are in demand and app development is a valuable skill. This document outlines the tools you need to create an app, describes the creation of the app, and explains what to do with your app when it is finished.

2. AUDIENCE

This guide is for readers who want to build their own app and have a beginner's interest in computer technology. Readers should have access to a Windows 10 Operating System and be familiar with tasks such as downloading files, installing software, and opening, closing, and saving files.

3. GETTING READY

This section lists the tools you need to create your Android app, and explains where to find them, how to download them, and how to install them on your computer. By the end of this section, you will be ready to develop your app.

1. TOOLS

- Java Development Kit (Version 7 or later)
- Android Studio
- Android Device (Version 4.2 or later) **or** Android Emulator
- USB cable
- Internet access

2. CHECK YOUR COMPUTER FOR JAVA DEVELOPMENT KIT (VERSION 7 OR LATER)

Important! *DO NOT* download Android Studio until Java Development Kit (Version 7 or higher) is installed on your computer.

1. In the lower left corner of your computer screen, type Run in the search bar.
2. Under Best Match, double-click on Run (Desktop App) to open a dialog box.
3. In the dialog box, type cmd in the search bar and click OK to open the Terminal.
4. In the Terminal window, type java -version and press Enter. The Terminal window displays the version of Java on your computer or reports that you do not have Java on your computer.

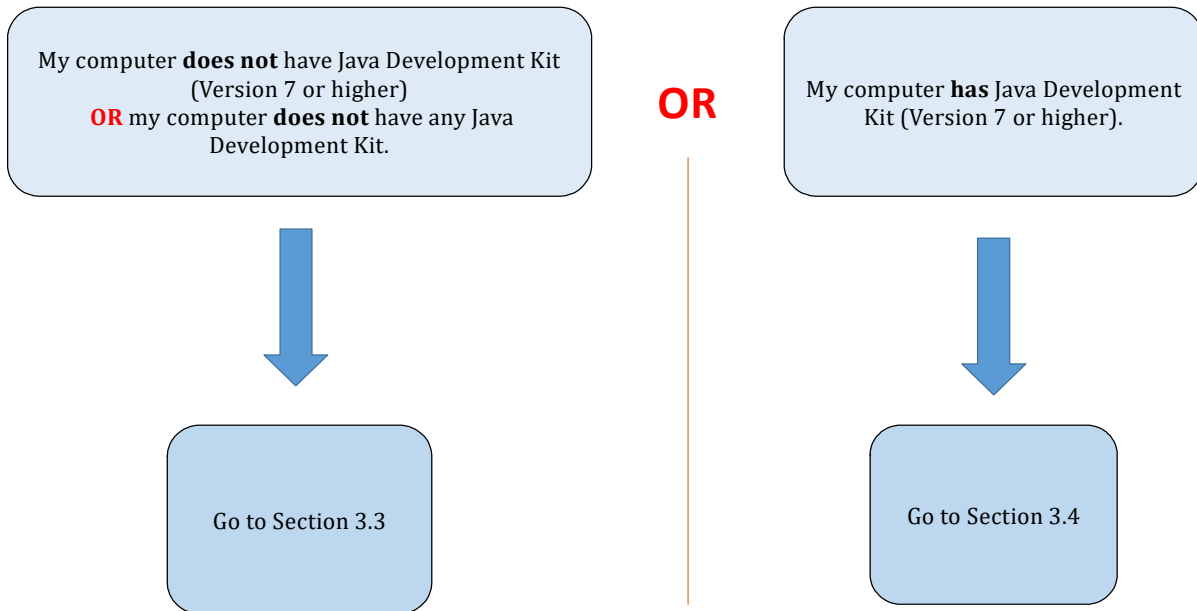


Figure 1: Next actions for Java Development Kit (Version 7 or later).

3. DOWNLOAD AND INSTALL JAVA DEVELOPMENT KIT (VERSION 7 OR HIGHER)

1. Open a web browser and go to www.oracle.com//technetwork/java/javase/downloads
2. On the left of the screen, double-click on the Java icon.
3. Navigate to the Java SE Development Kit 8u65.
4. Depending on your operating system, select the link for either Windows x86 **or** Windows x64.
5. When the download is complete, a Java Installation Wizard opens. Follow the on-screen instructions.
6. Verify that Java Development Kit (Version 7 or higher) installed to your computer by repeating steps 1-4 of Section 3.2.

4. DOWNLOAD AND INSTALL ANDROID STUDIO

1. Go to developer.android.com.
2. Click Download Android Studio for Windows.
3. When your download finishes, launch the .exe file.
4. To install Android Studio, follow the instructions of the on-screen Set-Up Wizard.

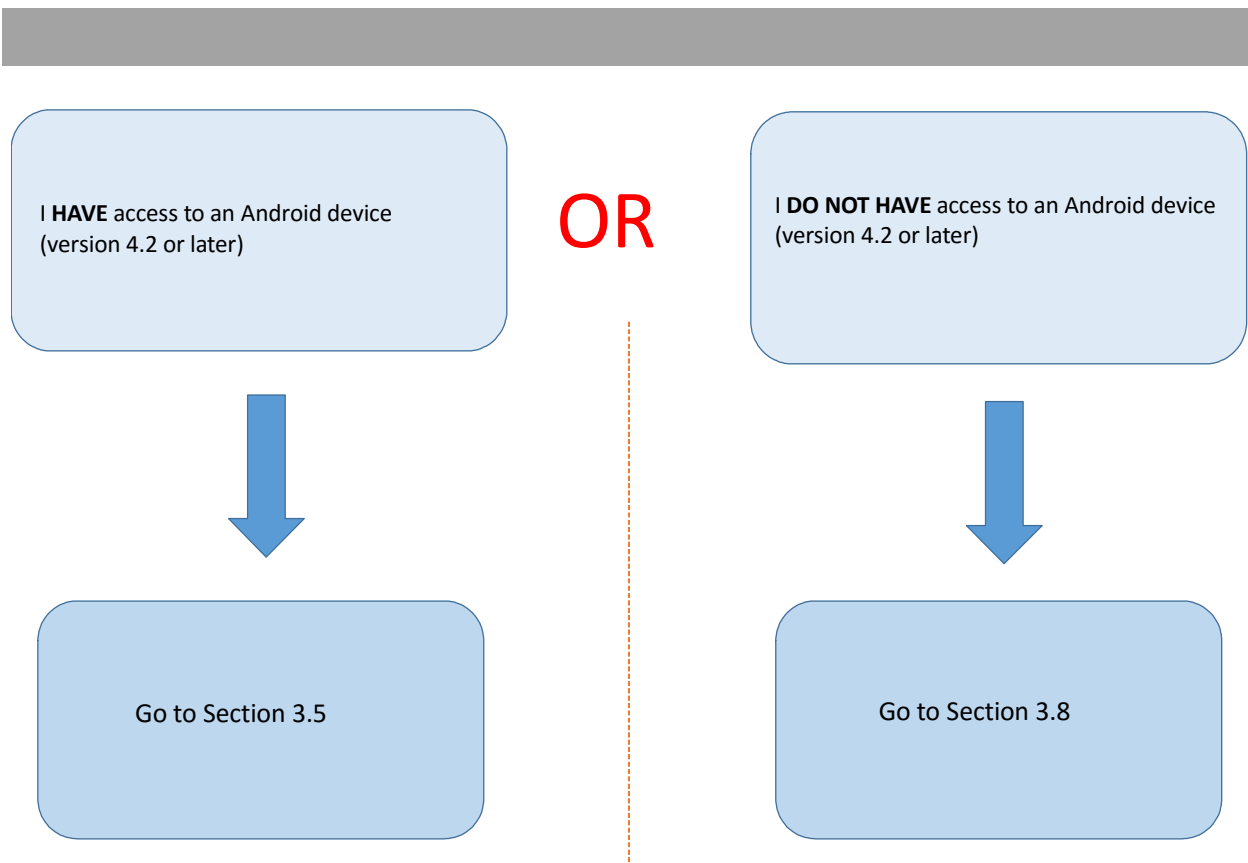


Figure 2: Next actions for Android device (version 4.2 or later).

5. CONNECT YOUR ANDROID DEVICE TO ANDROID STUDIO

1. On your Android device, go to Settings and scroll down to About Phone.
2. In About Phone, tap 'Build Number' 7 times to display a message that reads 'You are now a developer.'
3. Return to About Phone and select Developer Options.
4. Scroll down to USB Debugging and select Enable.
5. Using a USB cable, connect your Android device to your computer.

6. INSTALL A WINDOWS DRIVER TO DETECT YOUR ANDROID DEVICE

1. Go to developer.android.com/tools/extras/oem-usb.html.
2. Scroll down to find your Android device and click on the corresponding Windows driver to download a zip folder.
3. Unzip the folder, go to This PC and select Manage.
4. In the left pane, select Device Manager and find Other Devices.
5. Expand Other Devices to see your Android device or the Android Debug Interface (ADB).
6. Right-click on your Android device or the ADB and select Update Driver Software to launch a Set-Up wizard.
7. To update your driver software, follow the on-screen instructions.

7. CHECK THAT YOUR ANDROID DEVICE IS CONNECTED TO ANDROID STUDIO

1. Launch Android Studio.
2. On the ribbon at the top of the screen, click the green play button and wait 10 seconds. The Choose a Running Device dialog box opens. Find your device's name in the dialog box.
3. Select the button next to your device's name. Ensure that Launch Emulator is not selected.
4. Select Phone and click OK. After five seconds, the 'Hello World' message displays on your Android device.

8. SETUP THE ANDROID EMULATOR

1. Launch Android Studio.
2. To start the Android Emulator, click on the green run button on the ribbon at the top of the screen.
3. On the dialog box that opens, select Launch Emulator.
4. The drop-down menu next to Launch Emulator displays one device called Nexus 5 API21x 86. Select this device and click OK. After 10 seconds, a black phone appears on the screen of your Android device.
5. Wait for the Android Loading screen to finish, then click and drag the home button upwards in a swiping motion to open the Android Emulator. The Android Studio app automatically appears on the Android Emulator.

9. TOOLS CHECKLIST

Table 1: Tools Checklist

TOOL	ACTION	CHECK
Java Development Kit (Version 7 or Later)	Installed	
Android Studio	Installed	
Android Device and Windows Driver	Connected and Detecting Android Device	
OR	OR	
Android Emulator	Displays Android Studio App	



A

Android Device 1
Android Emulator 1
Android Studio 1
app 1

C

cmd 1

I

Internet access 1

J

Java Development Kit (Version 7 or later) 1
java -version 1

T

Terminal 1
tools checklist 4

U

USB cable 1

W

Windows driver 3