



# Mobile APPS: **Distribution/Installation/Logs**

## How to enable Developers Options ?

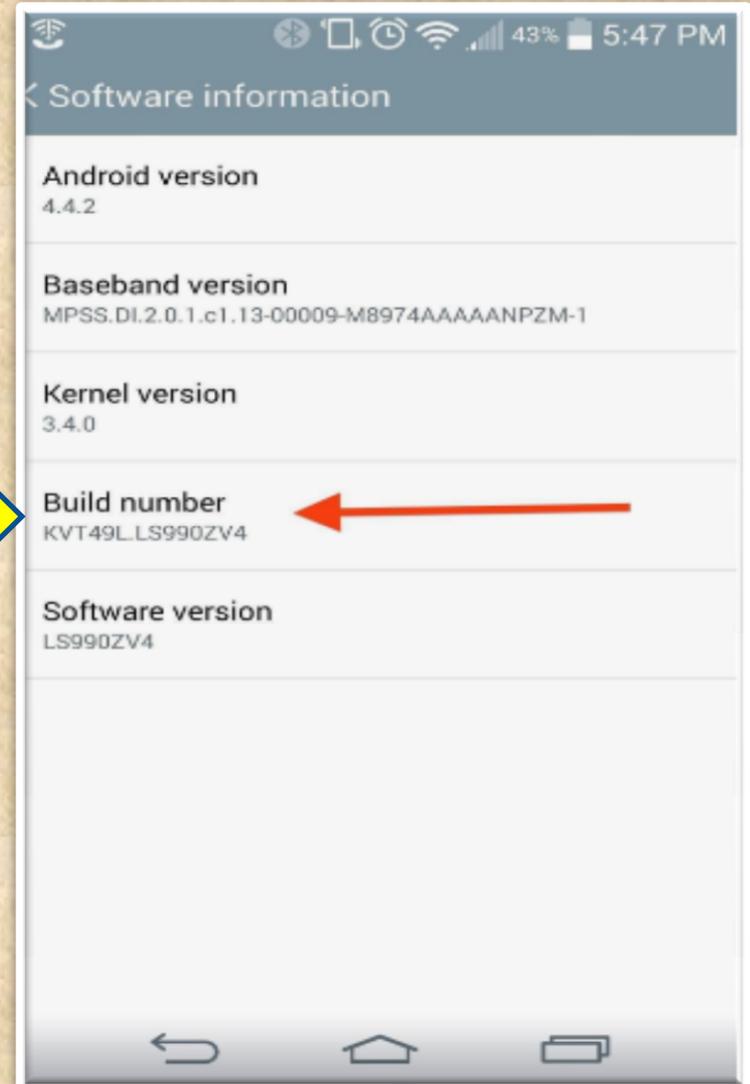
1. Enable USB debugging in the device system settings, under **Developer options**.



2. To make it visible, go to **Settings > About phone** and tap **Build number seven times**.



3. Return to the previous screen to find **Developer options** at the bottom.



# Mobile APPS: *Distribution/Installation/Logs*

## (contin.) How to enable Developers Options ?

Open Developers Options



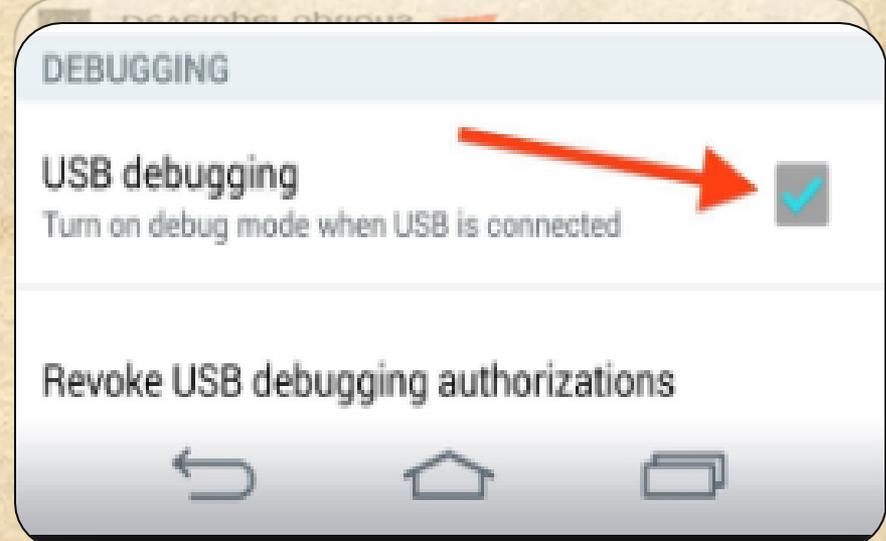
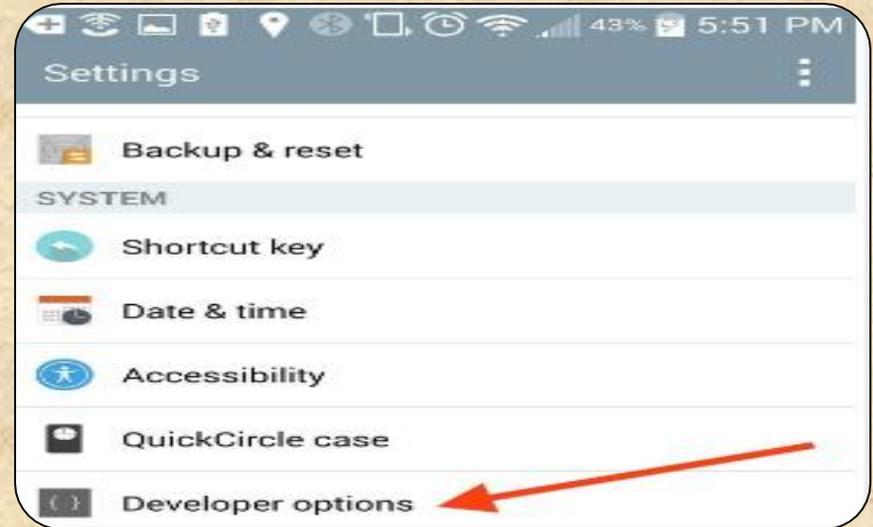
Check the box **USB debugging**.



This setting will allow you to connect your device to your computer, then issue **fastboot** commands via **ADB**.



This is useful for rooting, unlocking bootloaders, **installing recoveries**, and a ton more.



Mobile APPS: **Distribution/Installation/Logs**



Android  
Studio

Powered by IntelliJ Platform

# Mobile APPS: **Distribution/Installation/Logs**



What is  
Android Studio?

**Android Studio** is the official integrated development environment (IDE) for **Android** platform development.

The official language for Android development is **Java**. Large parts of Android are written in **Java** and its APIs are designed to be called primarily from **Java**.

It is possible to develop C and C++ apps using the Android Native Development Kit (NDK), however it isn't something that Google promotes.



## What is ADB in Android Studio

Android Debug Bridge (adb) is a versatile command line tool that lets you communicate with an emulator instance or connected Android-powered device.

It is a client-server program that includes three components:

A **client**, which sends commands. The client runs on your development machine. You can invoke a client from a shell by issuing an adb command. Other Android tools such as DDMS also create adb clients.

A **daemon**, which runs commands on a device. The daemon runs as a background process on each emulator or device instance.

A **server**, which manages communication between the client and the daemon. The server runs as a background process on your development machine.

# Mobile APPS: *Distribution/Installation/Logs*

## What is ADB LOCATS?

**Logcat** is a command-line tool that dumps a log of system messages, including stack traces when the device throws an error and messages that you have written from your app with the Log class

ANDROID MONITOR includes a logcat Monitor that displays debug messages.

The logcat Monitor displays system messages, such as when a garbage collection occurs, as well as messages that you can add to your app using the LOG class.

It displays messages in real time and also keeps a history so you can view older messages.

# Mobile APPS: *Distribution/Installation/Logs*

## What is ADB LOCATS?

**Verbose - Show all log messages (the default).**

**Debug - Show debug log messages that are useful during development only, as well as the message levels lower in this list.**

**Info - Show expected log messages for regular usage, as well as the message levels lower in this list.**

**Warn - Show possible issues that are not yet errors, as well as the message levels lower in this list.**

**Error - Show issues that have caused errors, as well as the message level lower in this list.**

**Assert - Show issues that the developer expects should never happen.**

**To set a LOG LEVEL : in the log level MENU  
Select the Following Options**

# Mobile APPS: *Distribution/Installation/Logs*

## What is ADB LOGCATS?

**HOMEWORK :** <http://adbshell.com/commands/adb-logcat>

### Some most useful commands



**adb logcat \*:V** *lowest priority, filter to only show Verbose level*

**adb logcat \*:D** *filter to only show Debug level*

**adb logcat \*:I** *filter to only show Info level*

**adb logcat \*:W** *filter to only show Warning level*

**adb logcat \*:E** *filter to only show Error level*

**adb logcat \*:F** *filter to only show Fatal level*

**adb logcat \*:T** *filter to show steps leading up to errors and warnings*

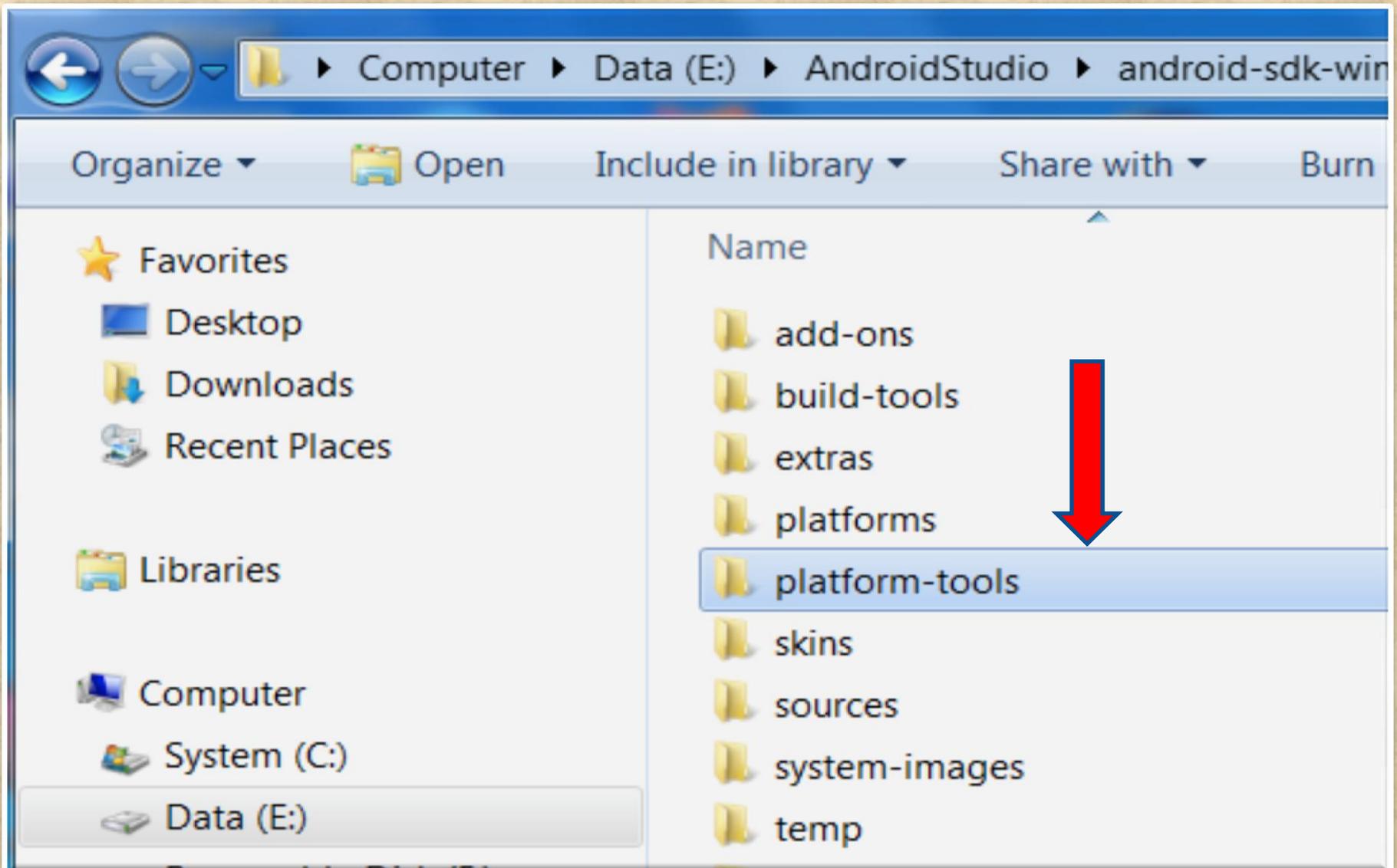
# Mobile APPS: *Distribution/Installation/Logs*

Computer > Data (E:) > AndroidStudio

Organize ▾ Open Include in library ▾ Share with ▾ Burn New folder

Name	Date modified	Type
android-sdk-windows	11/17/2016 1:58 PM	File folder
android-studio	6/17/2015 5:47 PM	File folder
Projects	6/18/2015 10:16 A...	File folder

# Mobile APPS: *Distribution/Installation/Logs*



# Mobile APPS: **Distribution/Installation/Logs**

Computer > Data (E:) > AndroidStudio > android-sdk-windows > platform-tools

Organize ▾ Include in library ▾ Share with ▾ Burn New folder

	Name	Date modified
★ Favorites		
Desktop		
Downloads		
Recent Places		
	api	6/22/2016 11:56 A...
	lib64	6/22/2016 11:56 A...
	systrace	6/22/2016 11:56 A...
	adb.exe	6/22/2016 11:56 A...

# Mobile APPS: *Distribution/Installation/Logs*

The screenshot shows the Android Studio interface. At the top, a file explorer window is open, displaying the path: Computer > Data (E:) > AndroidStudio > android-sdk-windows > platform-tools. Below this, the main Android Studio window is visible, showing the menu bar (File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, Help) and the toolbar. The main workspace is divided into several panels: Captures, System Information, Build Variants, and Terminal. The Terminal panel is active, showing the following text:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

E:\AndroidStudio\Projects\MyApplication>
```

A red arrow points from the file explorer window to the Terminal panel, indicating the location of the file being accessed.

# Mobile APPS: *Distribution/Installation/Logs*

The screenshot shows the Android Studio 2.2 interface. The title bar reads "MyApplication - [E:\AndroidStudio\Projects\MyApplication] - Android Studio 2.2". The menu bar includes File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, and Help. The toolbar contains various icons for file operations, navigation, and development. The left sidebar shows the Project view with "MyApplication" selected, and the Structure view showing "Captures". The main editor area displays the "System Information" tab. A notification bubble in the bottom right corner states "Platform and Plugin Updates" with the text: "The following components are ready to update: A Repository, Android SDK Platform-Tools 25.0.2, A v7a System Image, Android SDK Tools 25.2.4". The Terminal window at the bottom shows the following text:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

E:\AndroidStudio\Projects\MyApplication>cd E:\AndroidStudio\android-sdk-windows\platform-tools

E:\AndroidStudio\android-sdk-windows\platform-tools>
```

A red arrow points to the command prompt in the terminal window.

# Mobile APPS: *Distribution/Installation/Logs*

The screenshot shows the Android Studio 2.2 interface. The title bar reads "MyApplication - [E:\AndroidStudio\Projects\MyApplication] - Android Studio 2.2". The menu bar includes File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, and Help. The toolbar contains various icons for file operations, navigation, and development. The Project view on the left shows "MyApplication" expanded to "System Information". The Build Variants view is also visible. The Terminal window at the bottom shows the following text:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

E:\AndroidStudio\Projects\MyApplication>cd E:\AndroidStudio\android-sdk-windows\platform-tools

E:\AndroidStudio\android-sdk-windows\platform-tools>adb devices
```

A red arrow points to the "adb devices" command in the terminal. A notification box on the right side of the interface reads "Platform and Plugin Updates" and lists components ready for update: "The following components are ready to update: A Repository, Android SDK Platform-Tools 25.0.2, A v7a System Image, Android SDK Tools 25.2.4".

# Mobile APPS: Distribution/Installation/Logs

MyApplication - [E:\AndroidStudio\Projects\MyApplication] - Android Studio 2.2

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

MyApplication

Captures

System Information

Build Variants

Module	Build Variant
--------	---------------

Terminal

Platform and Plugin Updates  
The following components are ready to [update](#): Android Repository, Android SDK Platform-Tools 25.0.2, Android v7a System Image, Android SDK Tools 25.2.4

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

E:\AndroidStudio\Projects\MyApplication>cd E:\AndroidStudio\android-sdk-windows\platform-tools

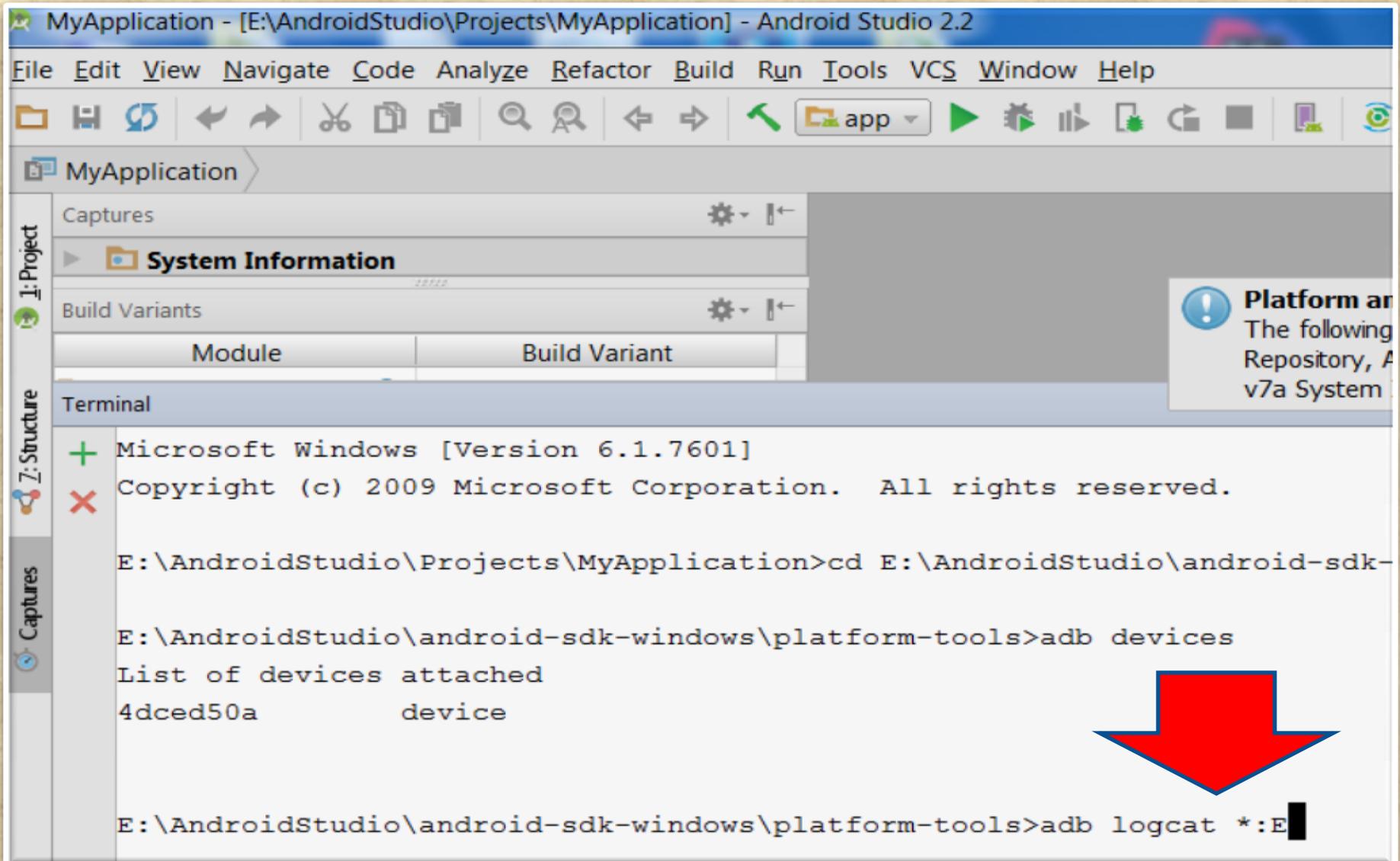
E:\AndroidStudio\android-sdk-windows\platform-tools>adb devices

List of devices attached
4dced50a      device
```



```
E:\AndroidStudio\android-sdk-windows\platform-tools>
```

# Mobile APPS: *Distribution/Installation/Logs*



The screenshot shows the Android Studio 2.2 interface. The title bar reads "MyApplication - [E:\AndroidStudio\Projects\MyApplication] - Android Studio 2.2". The menu bar includes File, Edit, View, Navigate, Code, Analyze, Refactor, Build, Run, Tools, VCS, Window, and Help. The toolbar contains various icons for file operations and development actions. The main workspace is titled "MyApplication" and contains several panels: "Captures", "System Information", "Build Variants", and "Terminal". The "Terminal" panel shows the following commands and output:

```
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

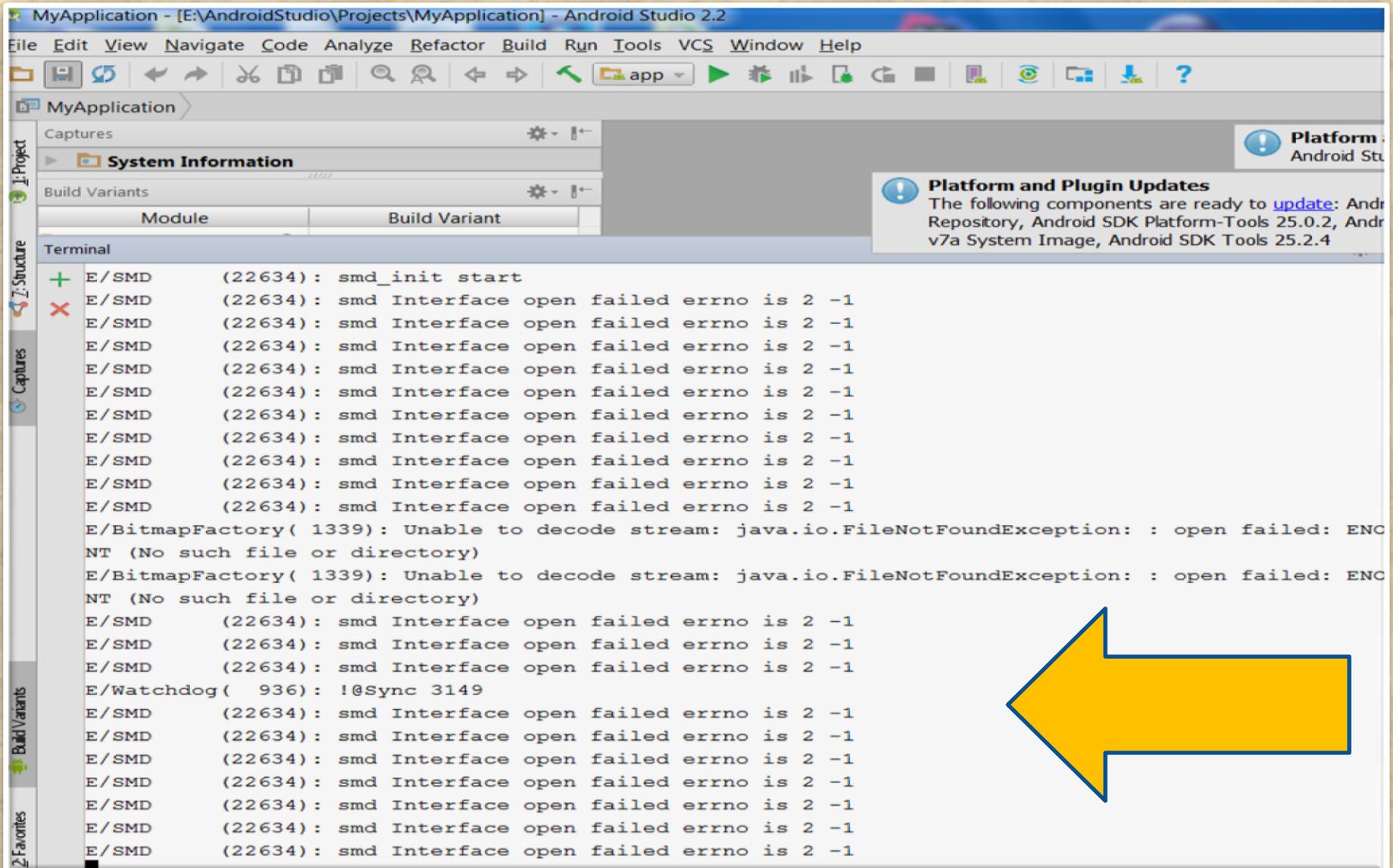
E:\AndroidStudio\Projects\MyApplication>cd E:\AndroidStudio\android-sdk-

E:\AndroidStudio\android-sdk-windows\platform-tools>adb devices
List of devices attached
4dced50a      device

E:\AndroidStudio\android-sdk-windows\platform-tools>adb logcat *:E
```

A red arrow points to the terminal output, specifically to the "device" entry in the list of attached devices.

# Mobile APPS: Distribution/Installation/Logs



MyApplication - [E:\AndroidStudio\Projects\MyApplication] - Android Studio 2.2

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

MyApplication

System Information

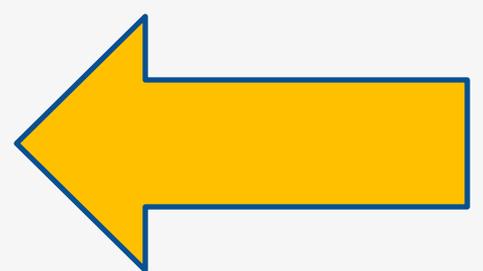
Build Variants

Module	Build Variant
--------	---------------

Terminal

```
+ E/SMD (22634): smd_init start
X E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/BitmapFactory( 1339): Unable to decode stream: java.io.FileNotFoundException: : open failed: ENO
NT (No such file or directory)
E/BitmapFactory( 1339): Unable to decode stream: java.io.FileNotFoundException: : open failed: ENO
NT (No such file or directory)
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/Watchdog( 936): !@Sync 3149
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
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E/SMD (22634): smd Interface open failed errno is 2 -1
E/SMD (22634): smd Interface open failed errno is 2 -1
```

Platform and Plugin Updates  
The following components are ready to [update](#): Android Repository, Android SDK Platform-Tools 25.0.2, Android v7a System Image, Android SDK Tools 25.2.4



# Mobile APPS: *Distribution/Installation/Logs*

The screenshot displays the Android Studio 2.2 interface. The title bar reads "MyApplication - [E:\AndroidStudio\Projects\MyApplication] - Android Studio 2.2". The menu bar includes "File", "Edit", "View", "Navigate", "Code", "Analyze", "Refactor", "Build", "Run", "Tools", "VCS", "Window", and "Help". The toolbar contains various icons, including a red arrow pointing to the "AVD" icon. Below the toolbar, the "MyApplication" tab is visible. The "Android Virtual Device Manager" window is open, showing the "Your Virtual Devices" section with the Android Studio logo. Below the logo, there are icons for a smartphone, a smartwatch, a tablet, and a car. A text box states: "Virtual devices allow you to test your application without having to own the physical devices." At the bottom, there is a button labeled "+ Create Virtual Device..." with a red arrow pointing to it.

# Mobile APPS: Distribution/Installation/Logs

Virtual Device Configuration

Select Hardware  
Android Studio

Choose a device definition

Category	Name	Size	Resolution	Density
TV	Nexus S	4.0"	480x800	hdpi
Wear	Nexus One	3.7"	480x800	hdpi
Phone	Nexus 6P	5.7"	1440x2560	560dpi
Tablet	Nexus 6	5.96"	1440x2560	560dpi
	Nexus 5X	5.2"	1080x1920	420dpi
	<b>Nexus 5</b>	<b>4.95"</b>	<b>1080x1920</b>	<b>xxhdpi</b>
	Nexus 4	4.7"	768x1280	xhdpi
	Galaxy Nexus	4.65"	720x1280	xhdpi
	5.4" FWVGA	5.4"	480x854	mdpi
	5.1" WVGA	5.1"	480x800	mdpi
	4.7" WXGA	4.7"	720x1280	xhdpi

New Hardware Profile   Import Hardware Profiles   Refresh   Clone Device...

### Nexus 5

Size: normal  
Ratio: long  
Density: 420dpi

Previous   **Next**   Cancel   Finish   Help

# Mobile APPS: Distribution/Installation/Logs

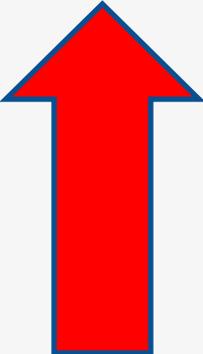
Virtual Device Configuration

 System Image  
Android Studio

Select a system image

Recommended x86 Images Other Images

Release Name	API Level ▾	ABI	Target
<a href="#">null Download</a>	25	x86_64	Android API 25 (with Google APIs)
<a href="#">null Download</a>	25	x86	Android API 25 (with Google APIs)
<b>Lollipop</b>	22	x86	Android 5.1 (with Google APIs)



## Lollipop



API Level  
**22**

Android  
**5.1**

Google Inc.

System Image  
**x86**

# Mobile APPS: Distribution/Installation/Logs

Virtual Device Configuration

Android Virtual Device (AVD)  
Android Studio

### Verify Configuration

AVD Name:

 Nexus 5      4.95 1080x1920 420dpi     

 Lollipop      Android 5.1 x86     

Startup orientation

 Portrait        Landscape

Emulated Performance      Graphics:

Device Frame  Enable Device Frame

### AVD Name

The name of this AVD.

**Recommendation**  
Virtual machine acceleration driver is out-of-date.  
[Reinstall Haxm](#)

# Mobile APPS: *Distribution/Installation/Logs*

Android Virtual Device Manager



## Your Virtual Devices

Android Studio

Virtual machine acceleration driver is out-of-date.

[Reinstall Haxm](#)

Type	Name	Resolution	API	Target	CPU/ABI	Size on Disk	Actions
	Nexus 5 API 22	1080 × 1920: xxhdpi	22	Android 5.1 (Goog...	x86	650 MB	  



# Mobile APPS: *Distribution/Installation: Android .APK*



Through an App Marketplace (*Google Play*)



by Email (*Android system recognizes the APK and displays an Install Now button in the email message*)



Through a Website (*host the release-ready APK file on your website and provide a download link*)



Google Drive



Android Studio



Test Fairy TOOL



*enable allow "Unknown Sources" on the device*  
(*Settings > Applications > Unknown Sources*)

# Mobile APPS: Distribution/Installation: Android .APK

## Manually Install APK in Android Studio Emulator

1. Verify the presence of  
**X:\Program Files (x86)\Android \android-studio\sdk\platform-tools**



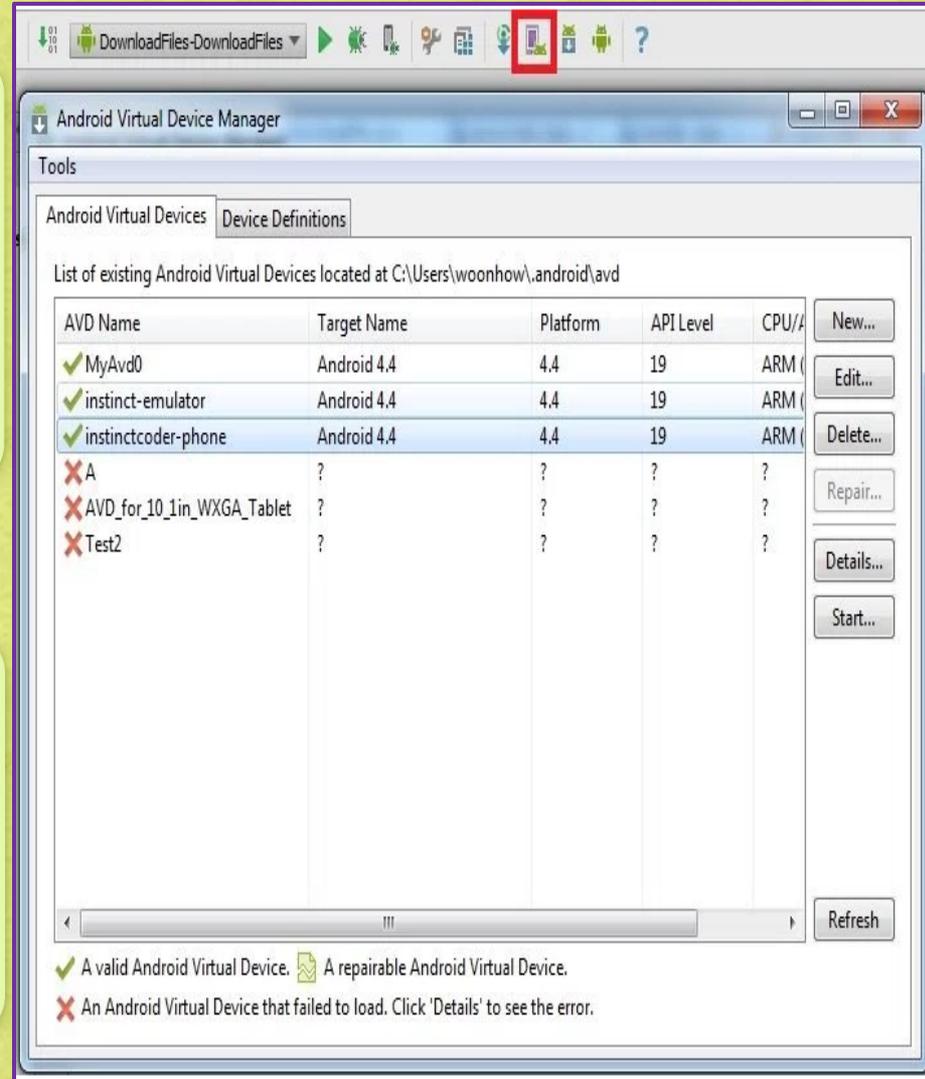
2. Copy APK file into  
**X:\Program Files (x86)\Android \android-studio\sdk\platform-tools**



3. go to Android Studio > Run Android Virtual Device Manager (AVD) > Start emulator



*In this session we will use APK file get from "Candy Crush"*



AVD Name	Target Name	Platform	API Level	CPU/Arch	
✓ MyAvd0	Android 4.4	4.4	19	ARM	New...
✓ instinct-emulator	Android 4.4	4.4	19	ARM	Edit...
✓ instinctcoder-phone	Android 4.4	4.4	19	ARM	Delete...
✗ A	?	?	?	?	Repair...
✗ AVD_for_10_in_WXGA_Tablet	?	?	?	?	Details...
✗ Test2	?	?	?	?	Start...

Legend:  
✓ A valid Android Virtual Device. A repairable Android Virtual Device.  
✗ An Android Virtual Device that failed to load. Click 'Details' to see the error.

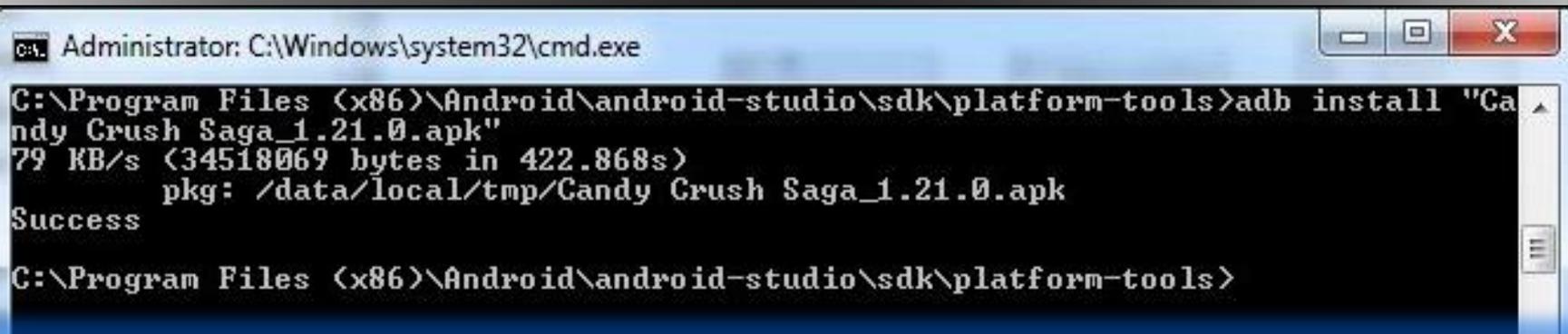
# Mobile APPS: *Distribution/Installation: Android .APK*

Cont. : Manually Install APK in Android Studio Emulator

4. Go to Start > Run > Cmd

```
1 Type cd "C:\Program Files (x86)\Android\android-studio\sdk\platform-tools"  
2 Type adb install "Candy Crush Saga_1.21.0.apk"
```

5. After successfully installed, you will see result in command prompt like below



```
Administrator: C:\Windows\system32\cmd.exe  
C:\Program Files (x86)\Android\android-studio\sdk\platform-tools>adb install "Candy Crush Saga_1.21.0.apk"  
79 KB/s (34518069 bytes in 422.868s)  
  pkg: /data/local/tmp/Candy Crush Saga_1.21.0.apk  
Success  
C:\Program Files (x86)\Android\android-studio\sdk\platform-tools>
```

It will take about 5-6 minutes to install successfully

# Mobile APPS: **Distribution/Installation: Android .APK**

## Manually Install APK in Android Studio Emulator

6. Go to the emulator and you will see Candy Crush install in the emulator like below

