

Becoming a Pro

IN Mobile Applications Testing



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



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 LOCATS?

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

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.

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

What is ADB LOCATS?

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

Some most useful commands

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

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

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

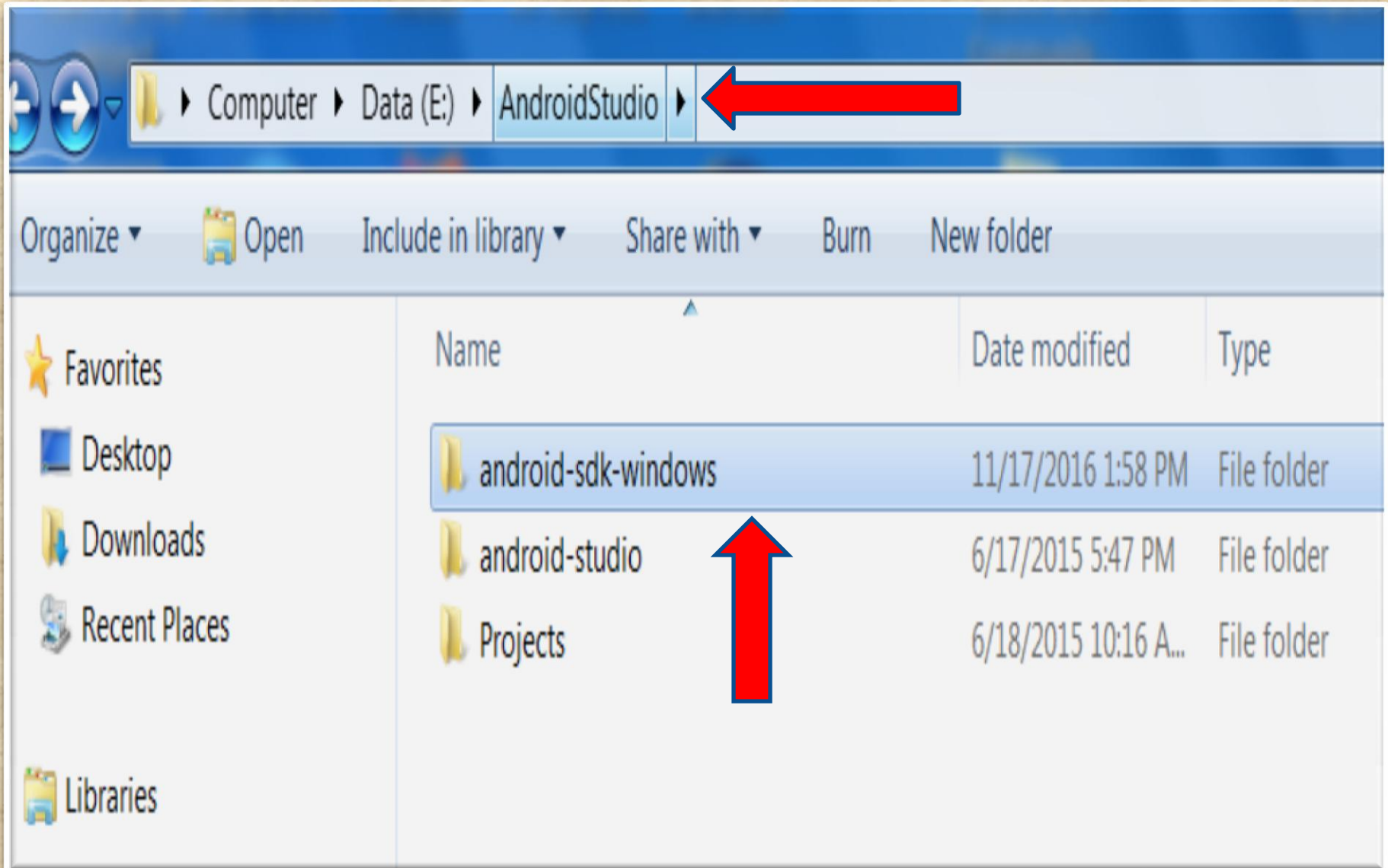
adb logcat *:W or adb logcat :*W *filter to only show Warning level*

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

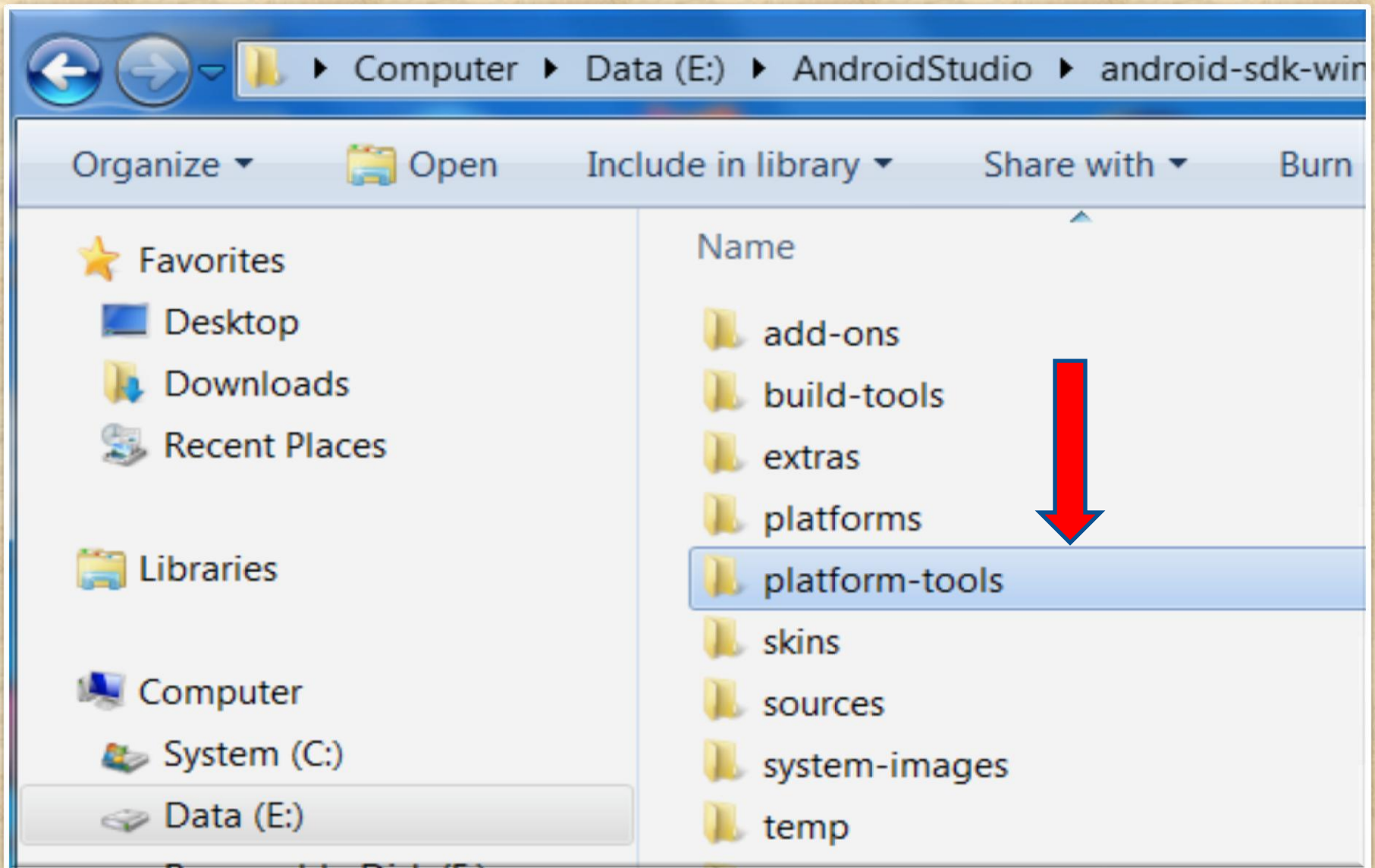
adb logcat *:F or adb logcat :*F *filter to only show Fatal level*

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

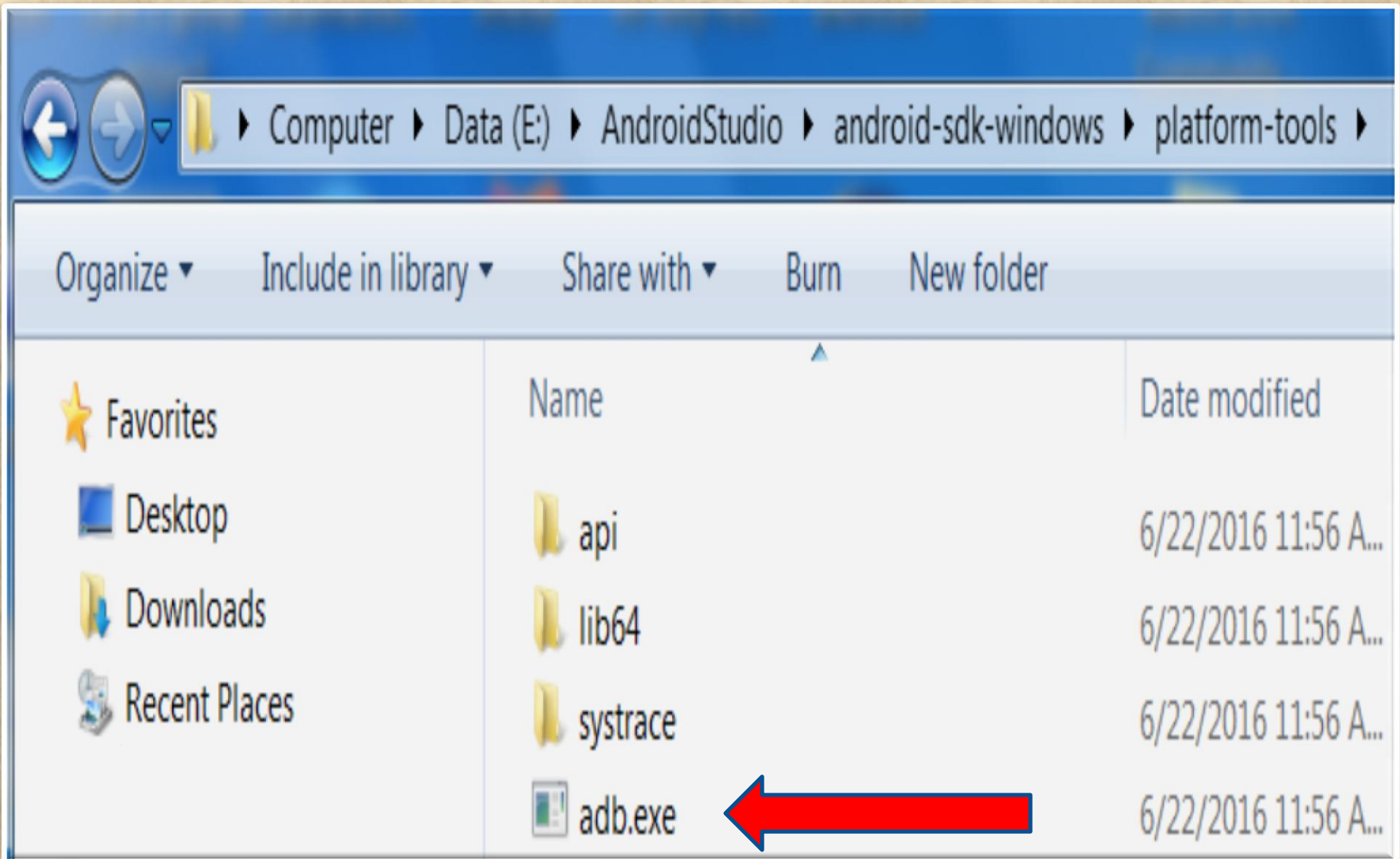
Mobile APPS: **Distribution/Installation/Logs**



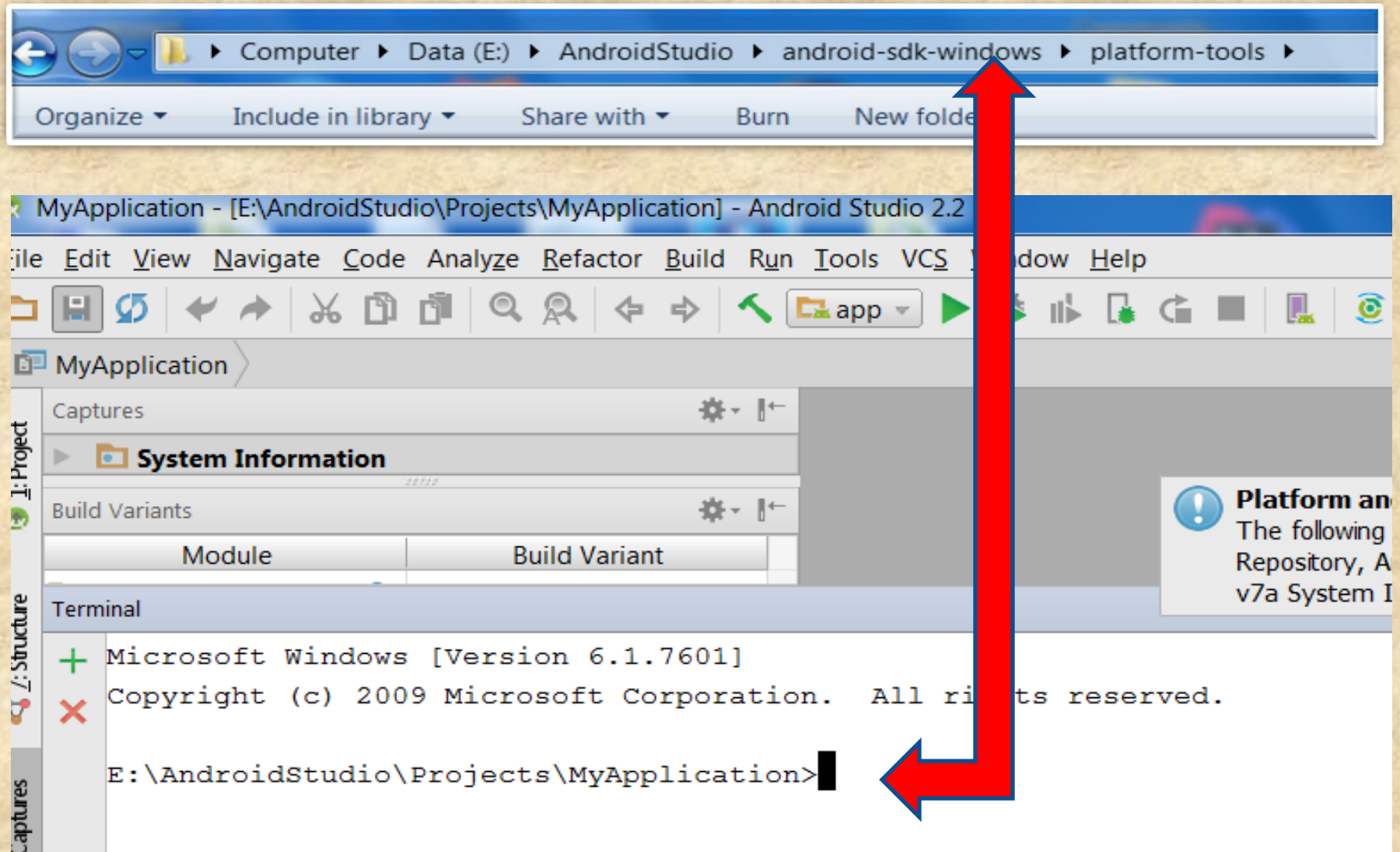
Mobile APPS: **Distribution/Installation/Logs**



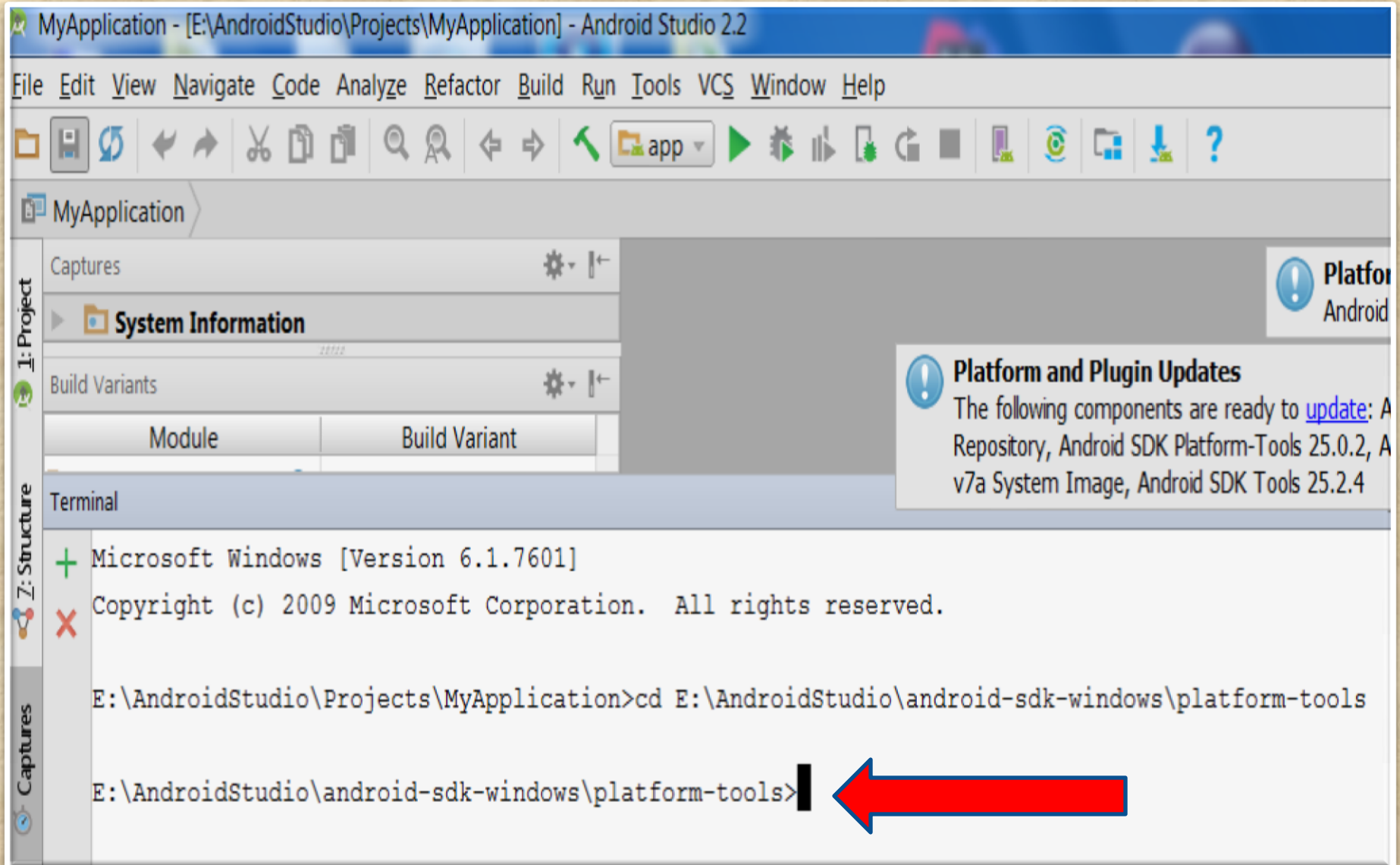
Mobile APPS: **Distribution/Installation/Logs**



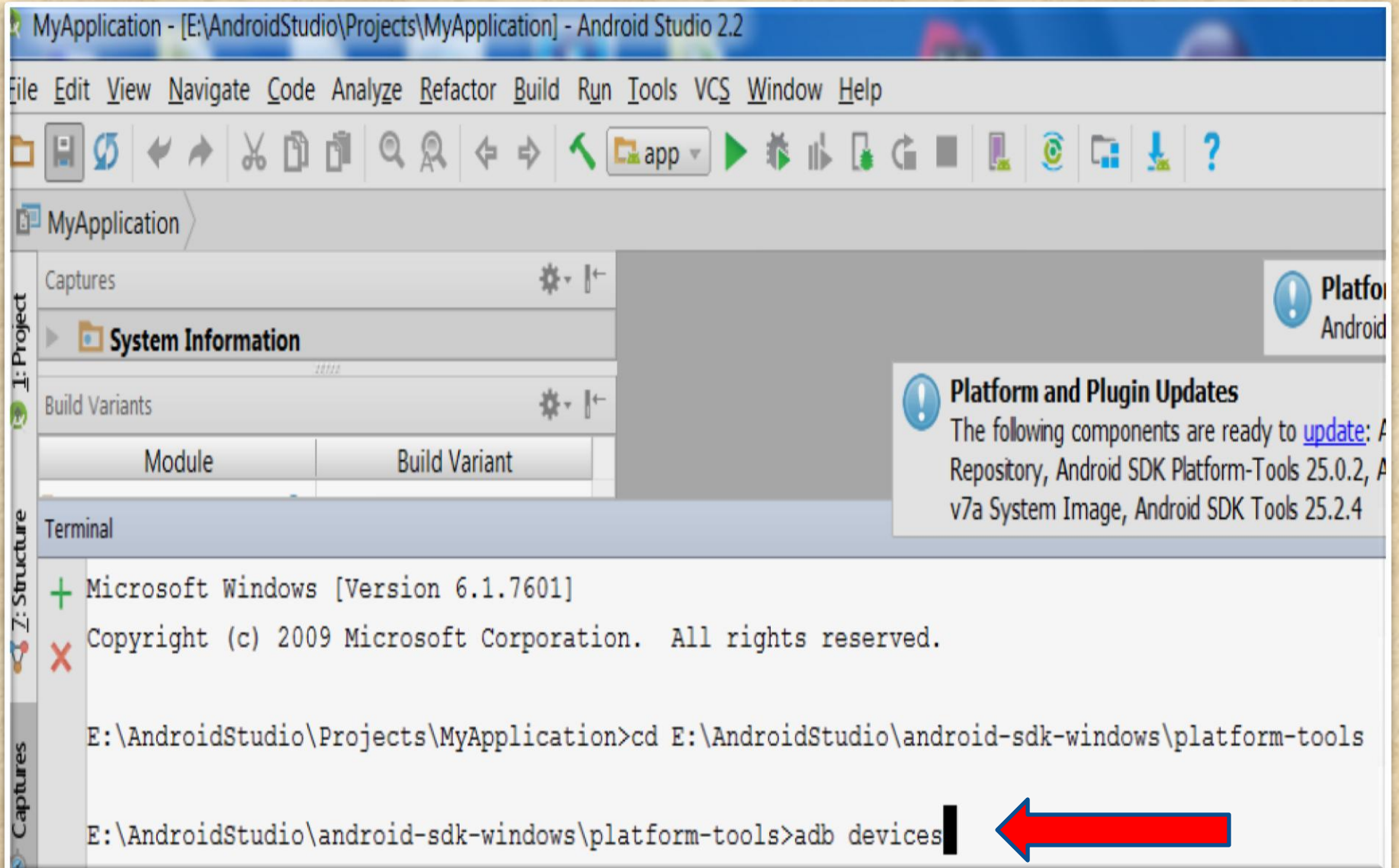
Mobile APPS: *Distribution/Installation/Logs*



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



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



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

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>

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**

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

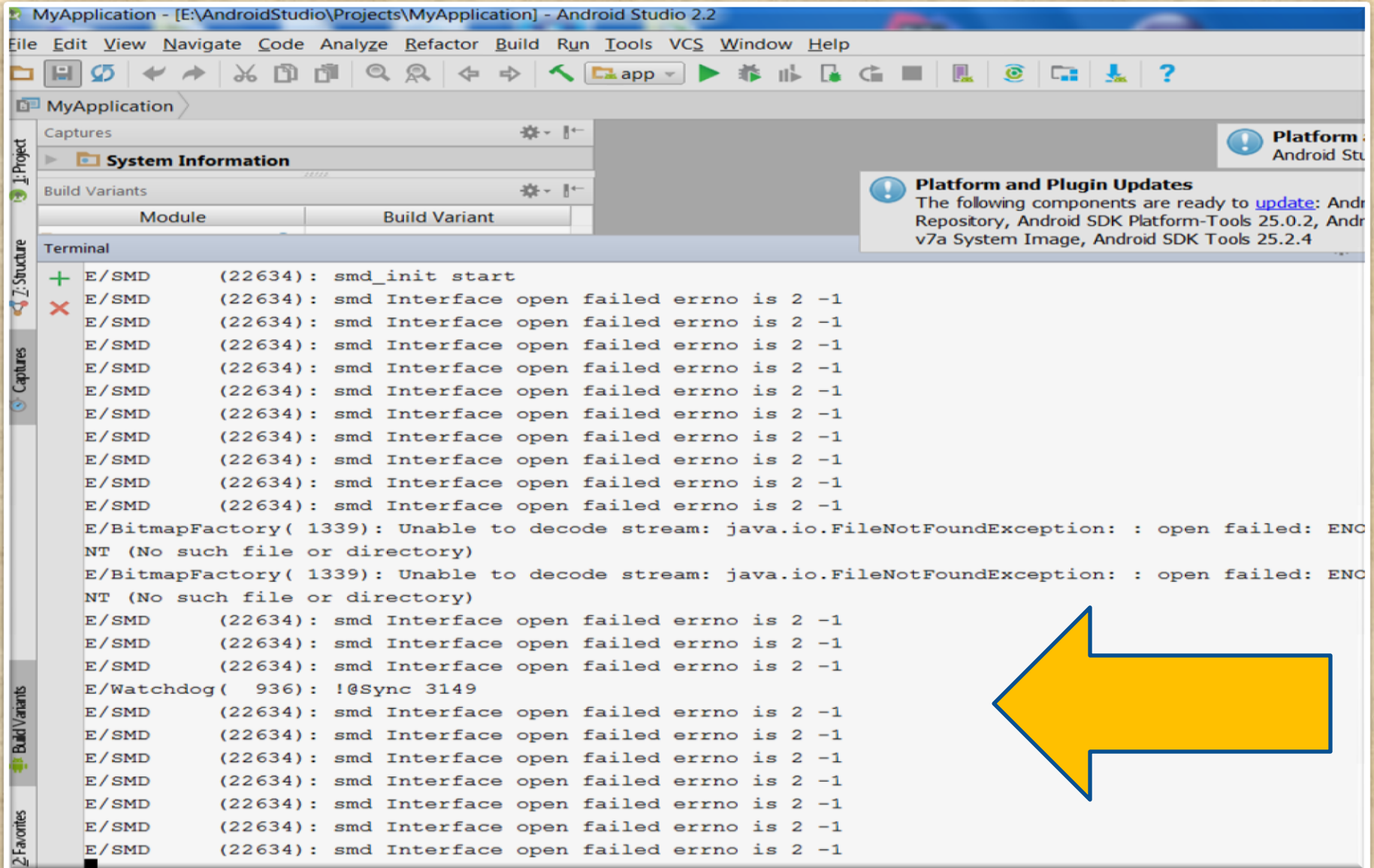
Microsoft Windows [Version 6.1.7601]
Copyright (c) 2009 Microsoft Corporation. All rights reserved.

```
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
```

Platform an
The following
Repository, A
v7a System



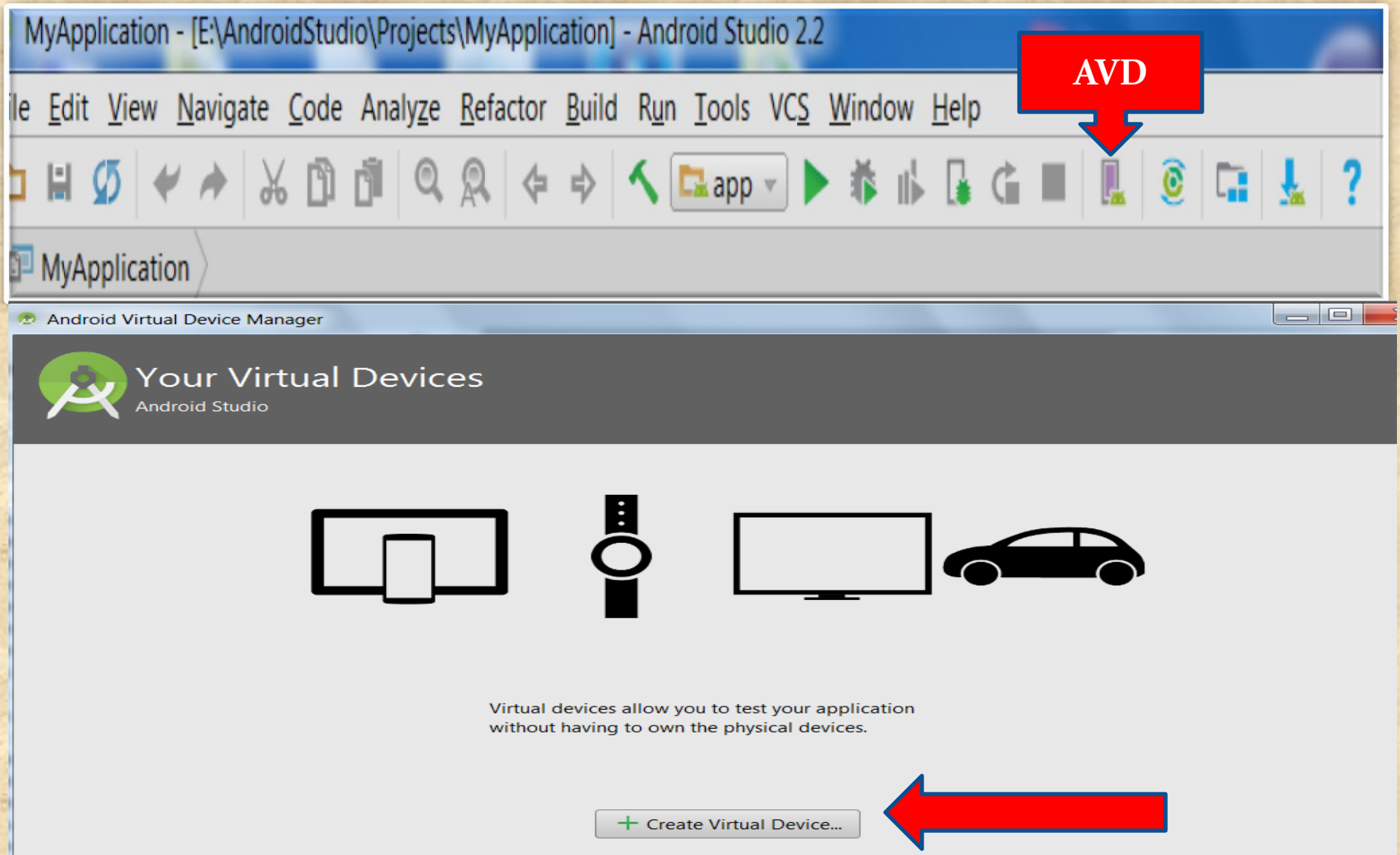
Mobile APPS: Distribution/Installation/Logs



The screenshot shows the Android Studio 2.2 interface. The top 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, Structure, and Captures panels. The main window displays the 'System Information' tab, which shows a table with columns for Module and Build Variant. Below this, the 'Terminal' panel shows a log of system information and errors. The log includes messages from E/SMD (22634) and E/BitmapFactory (1339). A large yellow arrow points to the terminal output.

```
MyApplication - [E:\AndroidStudio\Projects\MyApplication] - Android Studio 2.2
File Edit View Navigate Code Analyze Refactor Build Run Tools VCS Window Help
Captures
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
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
```


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



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
	Nexus 6	5.96"	1440x2560	560dpi
	Nexus 5X	5.2"	1080x1920	420dpi
	Nexus 5	4.95"	1080x1920	xxhdpi
	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

Nexus 5

1080px

4.95"

1920px


Size: normal
Ratio: long
Density: 420dpi

Clone Device...

Previous Next Cancel Finish Help

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

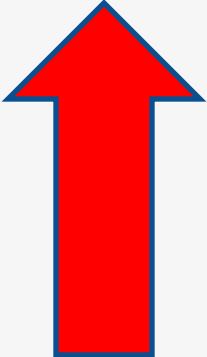
Virtual Device Configuration

 **System Image**
Android Studio


Select a system image

Recommended x86 Images Other Images

Release Name	API Level ▾	ABI	Target
<i>null</i> Download	25	x86_64	Android API 25 (with Google APIs)
<i>null</i> Download	25	x86	Android API 25 (with Google APIs)
Lollipop	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


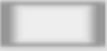

Verify Configuration

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



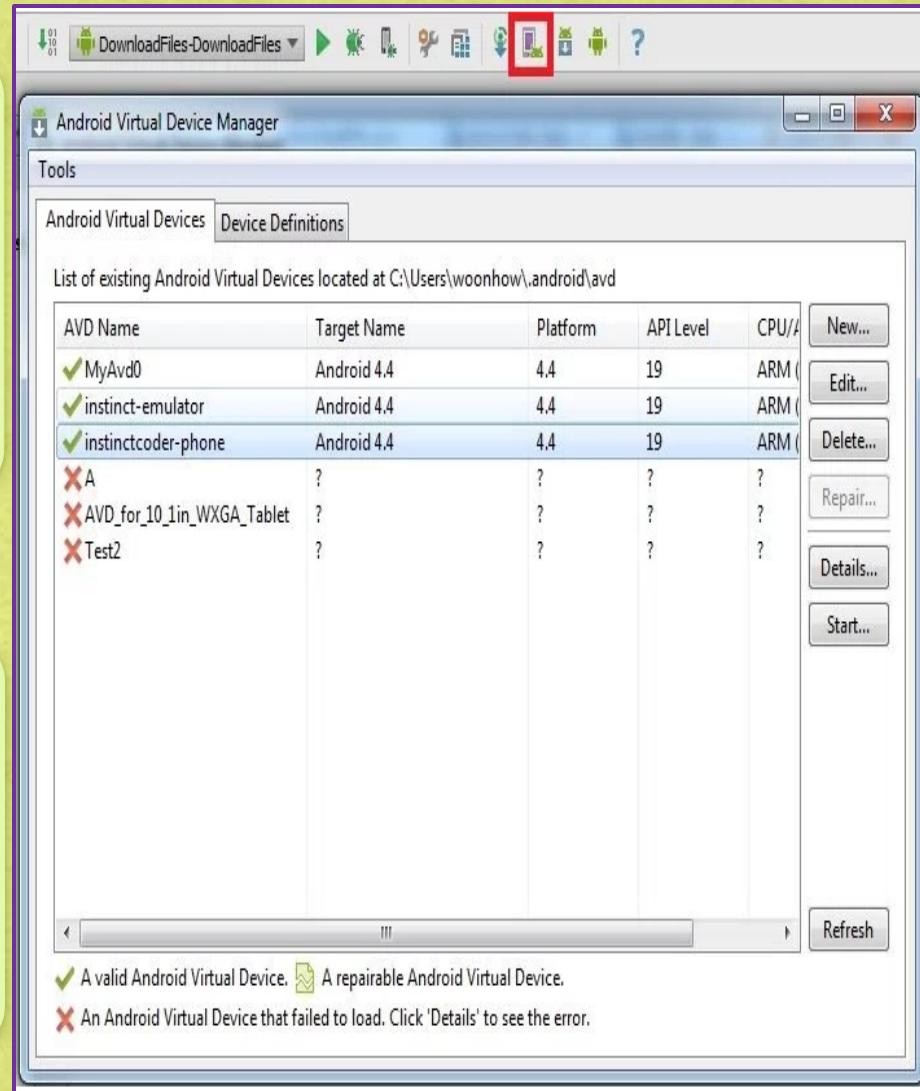
2. Copy APK file into
X:\Program Files (x86)\Android\android-studio\sdk\platform-tools



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"



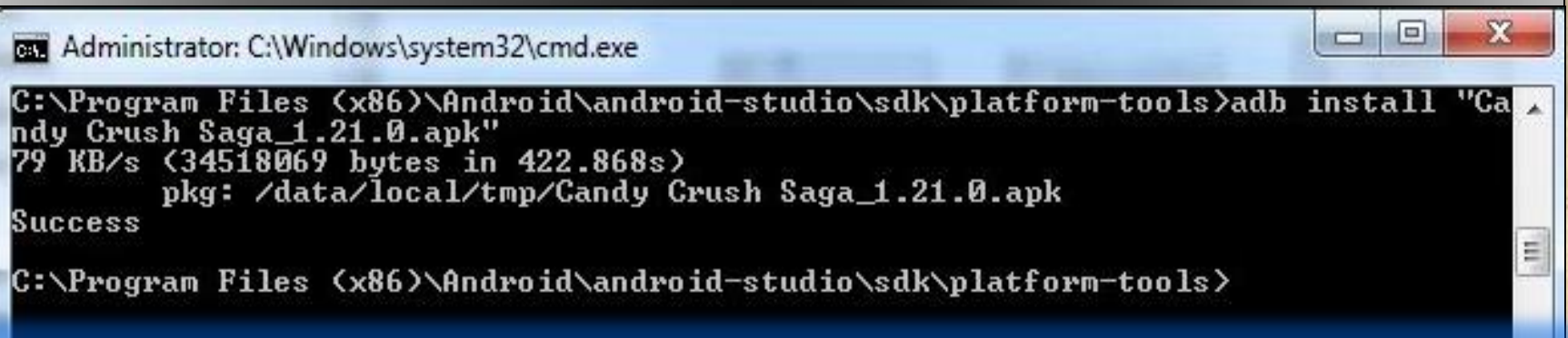
Mobile APPS: *Distribution/Installation: Android .APK*

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



```
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



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

*What is
TEST
FAIRY ?*

TestFairy offers some great features for app developers. One of the stand out features is client side Video recording and not just screen shots.

TestFairy provides a video recording of the exact test from the client side, including CPU, Memory, GPS, Network monitoring, logs, crash reports and more.

With Android apps you don't need to integrate any SDK or APIs into your app builds. You upload your APK (Android application file) to the TestFairy platform.

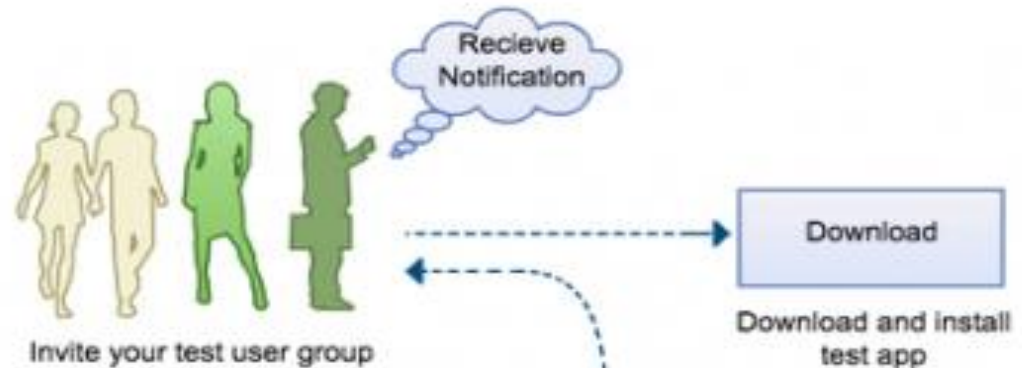
TEST FAIRY is for ANDROID ONLY



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

TEST FAIRY

*You will receive
an invitation by
email*



Build and generate .apk
You may manually build or use build automation tools

Upload your app
You may upload using scripts, for CI builds.

Processing Build

Build ready
Now build is ready to download

TEST FAIRY is for ANDROID ONLY



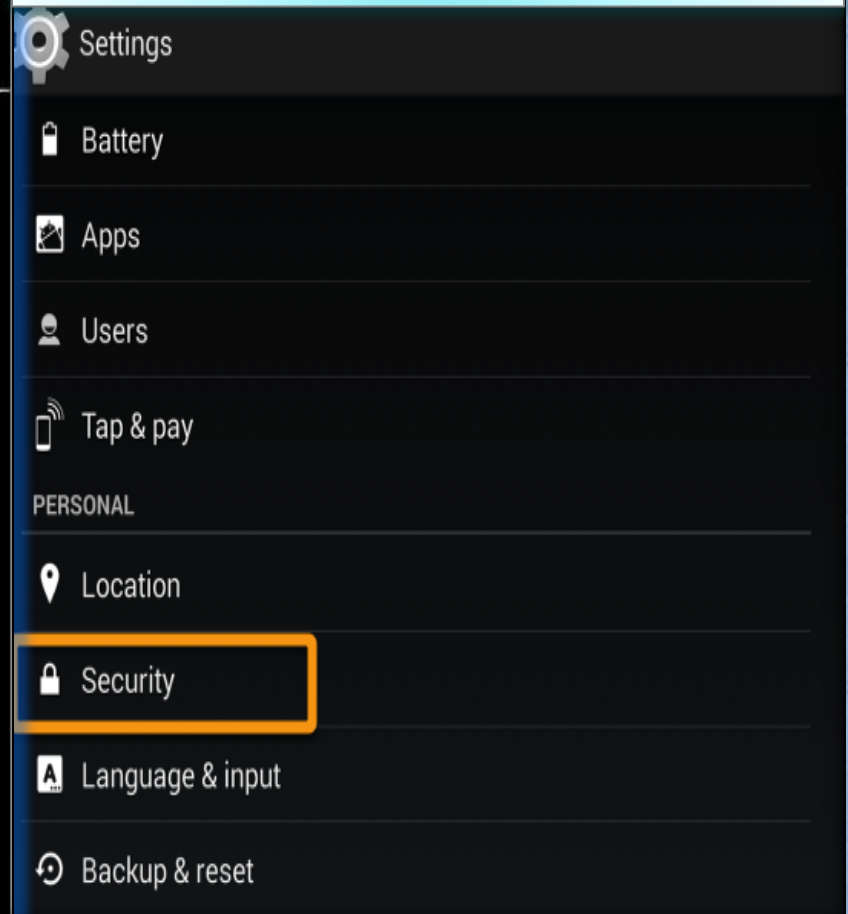
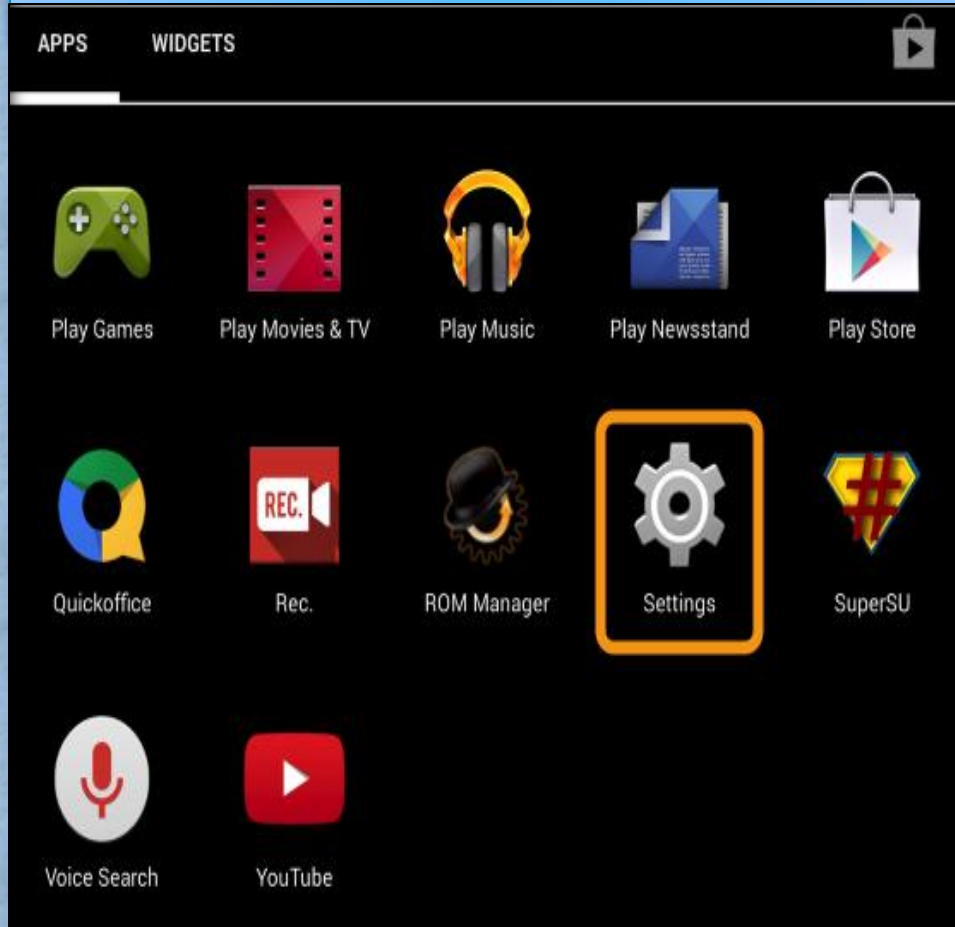
Test Fairy
Smart Android testing

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

Installing THIRD PARTY APK

1. Go to the "Settings" application on your Android device

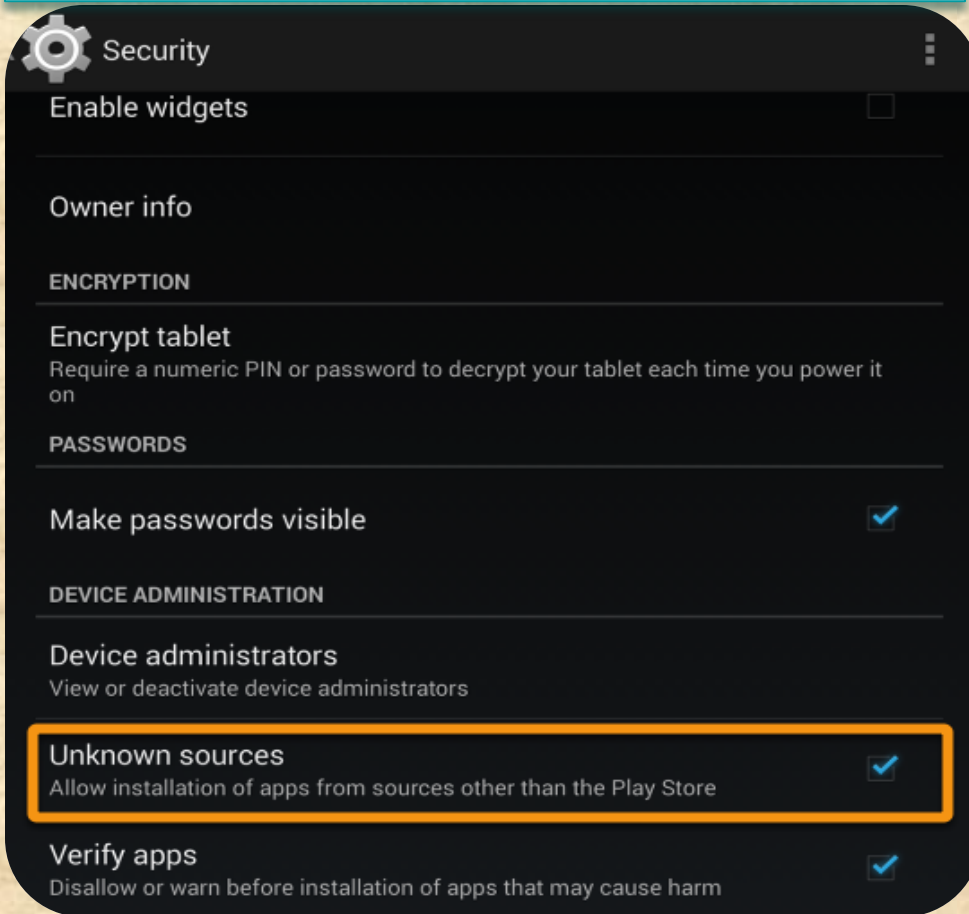
2. Choose the "Security" option located under the heading "Personal"



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

Installing THIRD PARTY APK

3. Under "Device Administration" place a checkbox next to the option "Unknown Sources"



This allows you to install applications on your Android device that are not downloaded directly from the Google Play store

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

Transferring APK to your Device

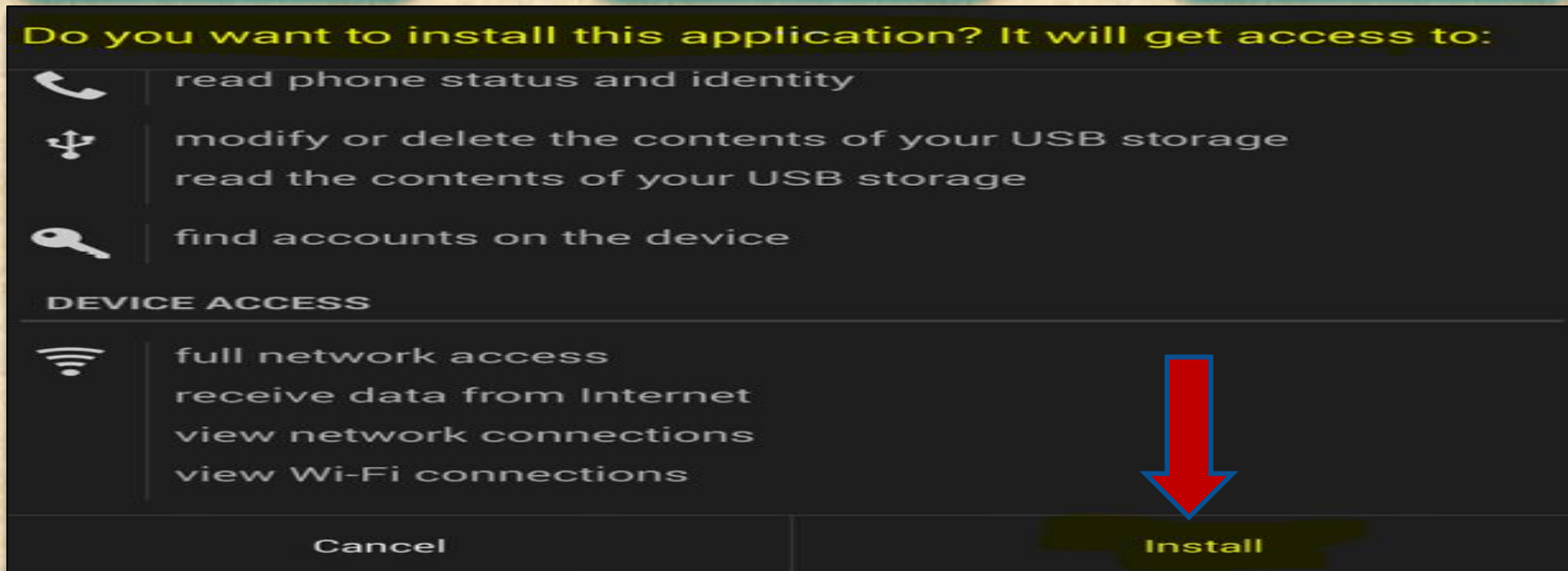
1. On your computer, attach the ".apk" file to an e-mail and send it to an account that you can access via your Android device.



2. On the Android device, click on the ".apk" attachment in the e-mail in order to download it.



3. Follow the on-screen instructions to install the application.



Mobile APPS: Android LOGS : EXTRA

Installing LOGCAT APP to your Device

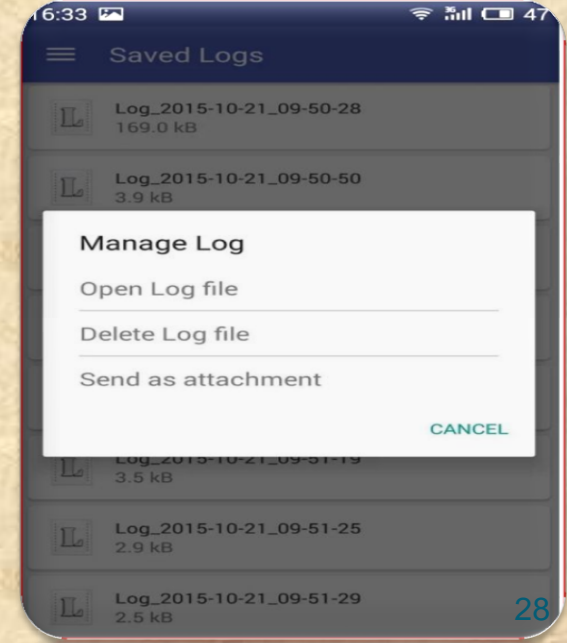
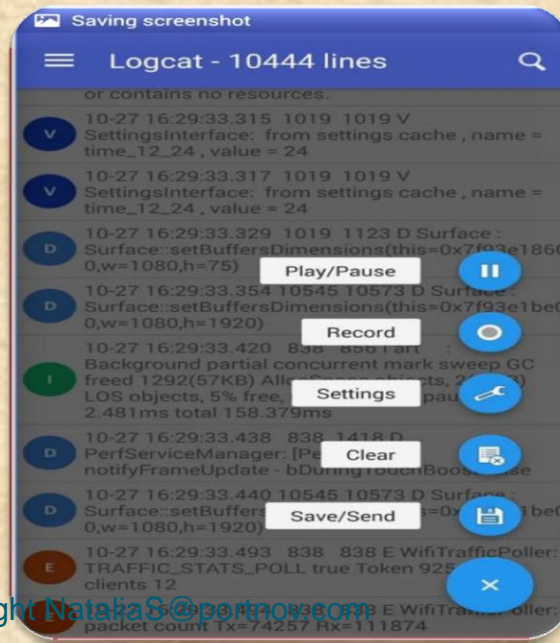
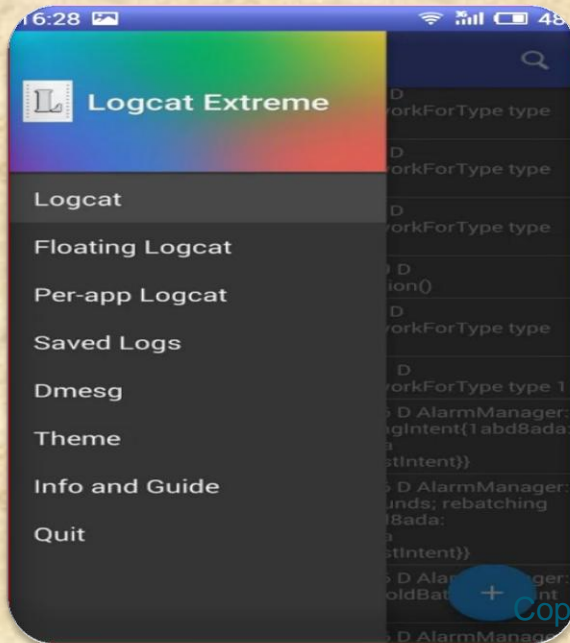
Download
LOGCAT EXTREME
from PlayStore to
your Device directly
(*this is only an
example, there are
many other similar
apps*)



LOGCAT EXTREME
is an enhanced
Logcat reader and
Logcat recorder
which comes with a
rich set of features
and handy user
interface.



Please note: From
Android 4.1 onwards
ANY logcat app needs
root access in order to
show logs properly.



Mobile APPS: *Distribution/Installation:* iOS .IPA



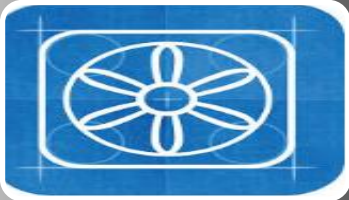
Through an App Marketplace (APP STORE)



XCODE



ITUNES



TEST FLIGHT

Mobile APPS: **Distribution/Installation: .IPA**

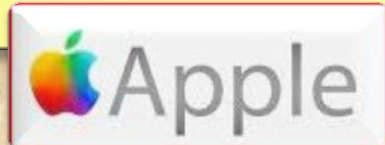


What is XCode?

Xcode is an Intergrated Development Environment by Apple containing a suite of software Development Tools for macOS, iOS, WatchOS and tvOS

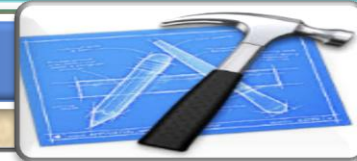
Xcode supports source code for programing languages C, C++, Objective-C, Objective-C++, Java, AppleScript, Python, Ruby, ResEdit (Rez), and Swift

Also supports variety of programming models, including but not limited to Cocoa, Carbon, and Java



Mobile APPS: *Distribution/Installation: .IPA*

Distributing .IPA through XCode ?



Connect the device to your Mac.



In Xcode, choose Window > Devices and select the device under Devices.



In the dialog that appears, choose the iOS App file and click Open.



In the Installed Apps table, click the Add button (+) below the table.

