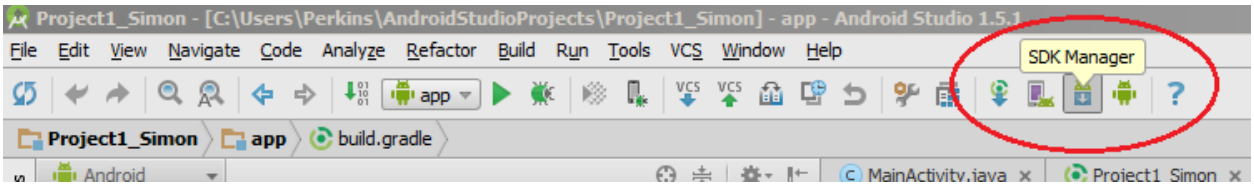
Install and Configure Development Environment

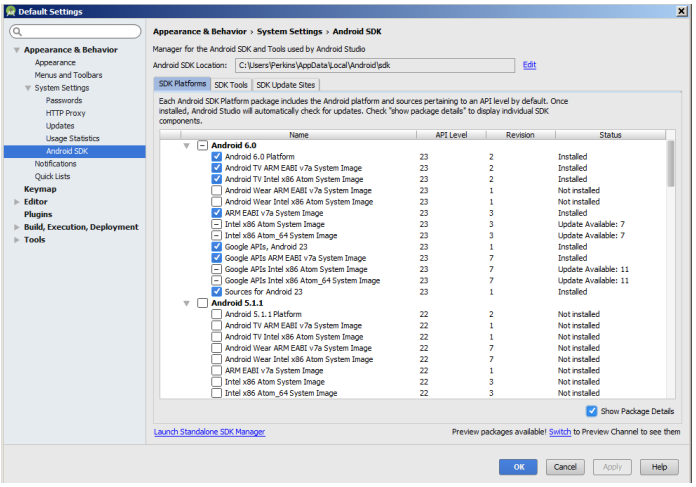
Install latest Android Studio and SDK http://developer.android.com/sdk/index.html

(Based on IntelliJ so if you use that or Pycharm you are in good shape)



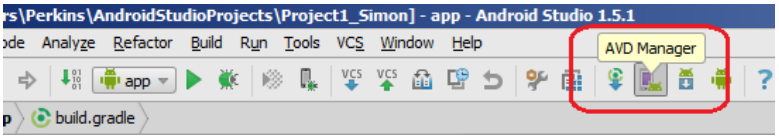
Go to SDK manager

- Note the number of versions of Android, 1 for every major release and each device is running one of these versions
- tools and extras, at least your phone version 4.4 and 5.0 You target particular versions of Android for your apps, make it as wide as possible to make it appeal to as many users using as many different versions as apossible. But keep in mind that each new release added new features, if you make it backwardly compatible to far (1 for instance) then you cannot use apis that were introduced in 3. Here I am using 6



- go to SDK tools and show off build tools and the critical Google USB Driver needed for Nexus devices

Go to AvdManager



AVD manager – manage virtual devices to test your app on can have as many as you want different sizes and APIs. The google version is clunky I recommend using Genymotion (https://www.genymotion.com/#!/download) get the freemium version

Can debug on Emulator or physical device. Device is much faster and has all available hardware. AS has a process called ADB.exe (Android Debug Bridge) which communicates with device.

Connect device

Enable developer mode on device (Nexus –Toggle on "USB Debugging" in the "Developer Options" area of Settings.). If you do not see "Developer Options", go into "About device" in Settings and tap on the "Build number" entry seven times, which will unlock "Developer Options".

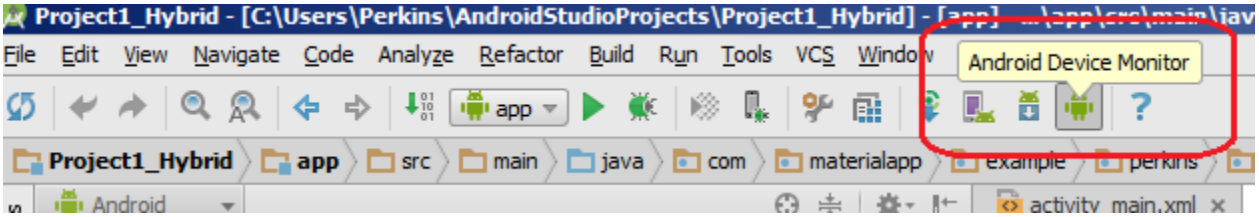
configure and use driver if necessary (Windows device manager)

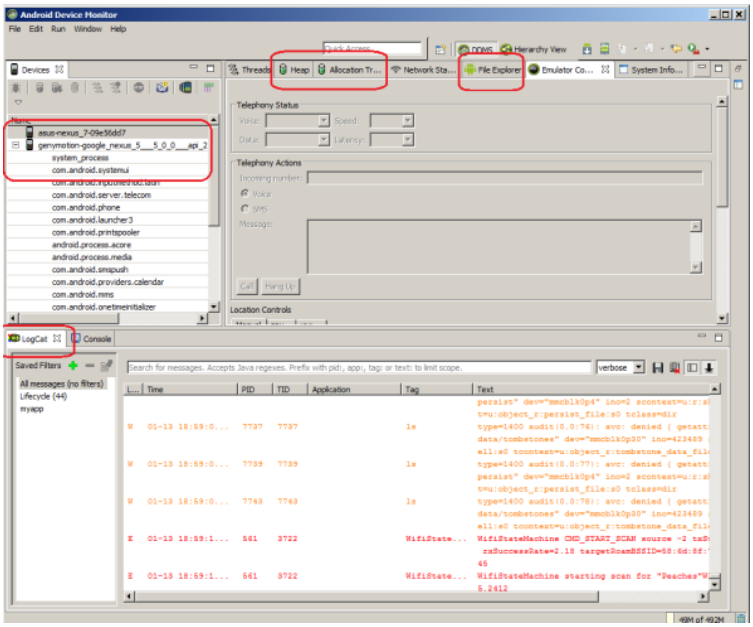
Enable Debugging

Demo on Nexus 7
Go to Debug Options
Stay Awake (otherwise you have to constantly unlock your app when debugging)
Usb Debugging

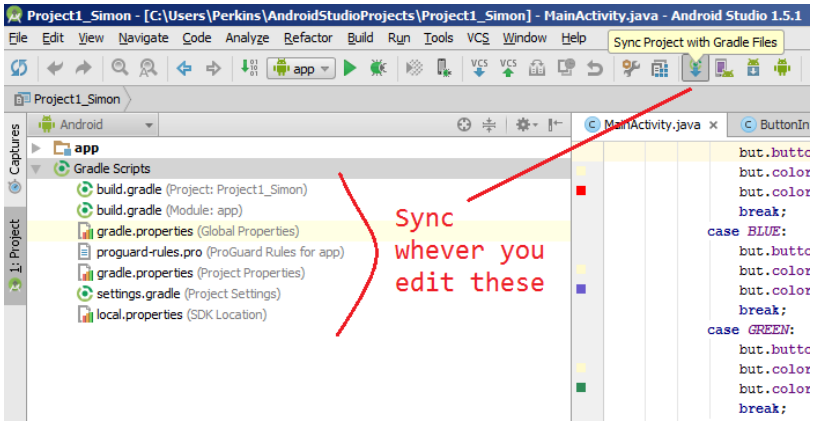
Development

Android Device Monitor Excellent way to track what is going on in emulated and real devices, also can send GPS and telephone info to target device

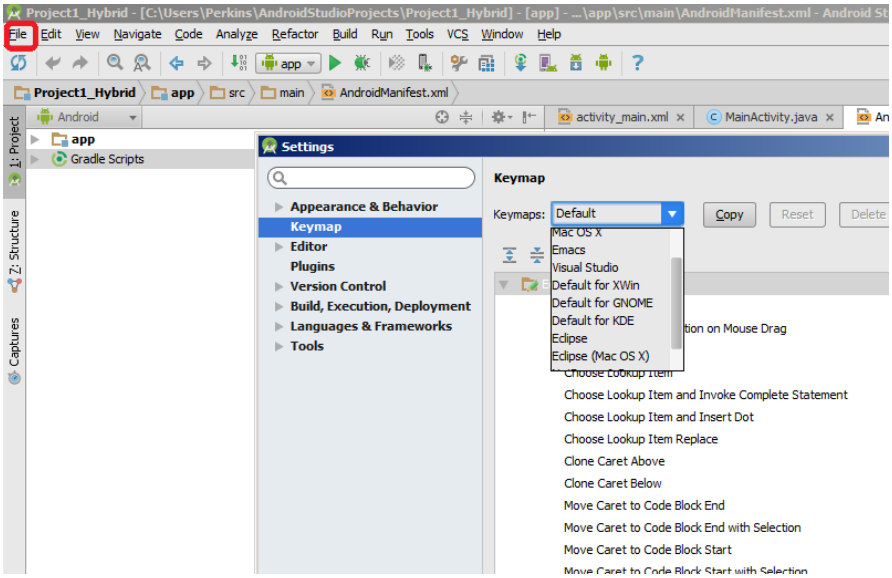



Android Device Monitor
File Edit Run Window Help
Devices
Threads
Heap
Allocation Tr...
Network Sta...
File Explorer
Emulator Co...
System Info...
Telephony Status
Telephony Actions
Location Controls
LogCat
Console
Saved Filters
All messages (no filters)
Lifecycle (44)
myapp
verbose
Time
PID
TID
Application
Tag
Text

Whenever you change a system file resync your gradle files. It will rebuild your project (possibly painfully slow)

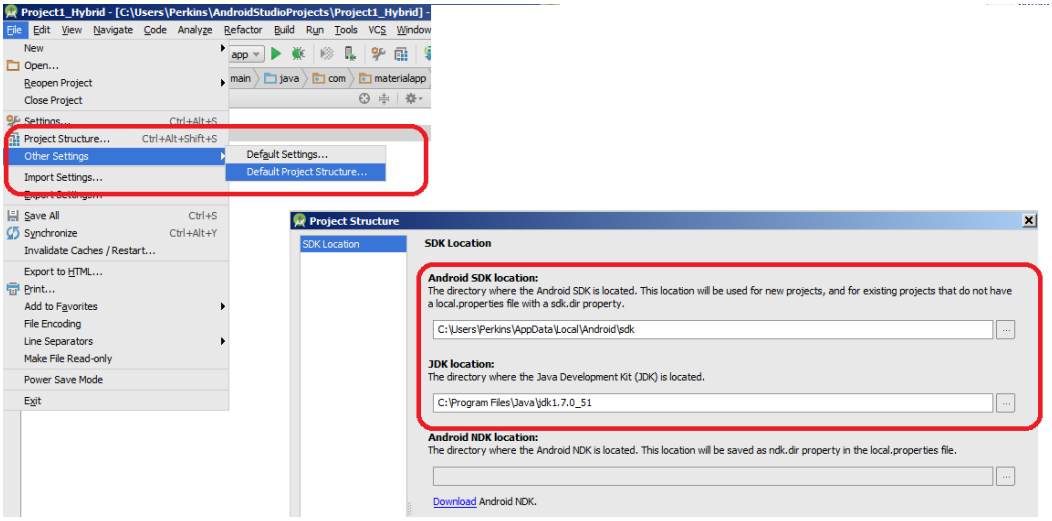


Keyboard shortcuts (productivity boost) can use defaults or configure how you like

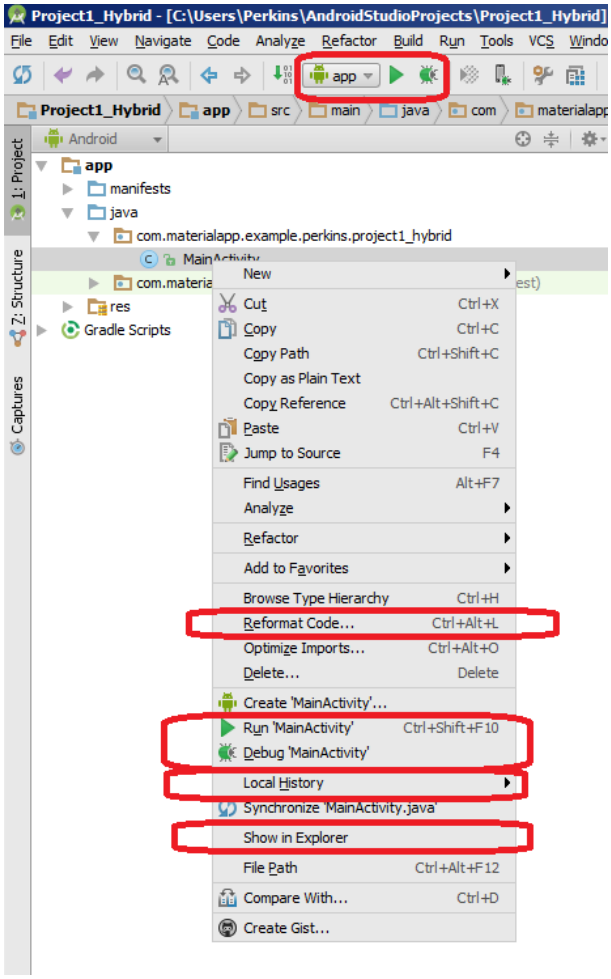


I like AS defaults, here are the ones I use a lot they are in a word file on scholar (Hotkeys I use). Here they are in a note I keep floating nearby

And where is the AS SDK and JDK?



Useful File Stuff



Manifest and Resources (much more later)

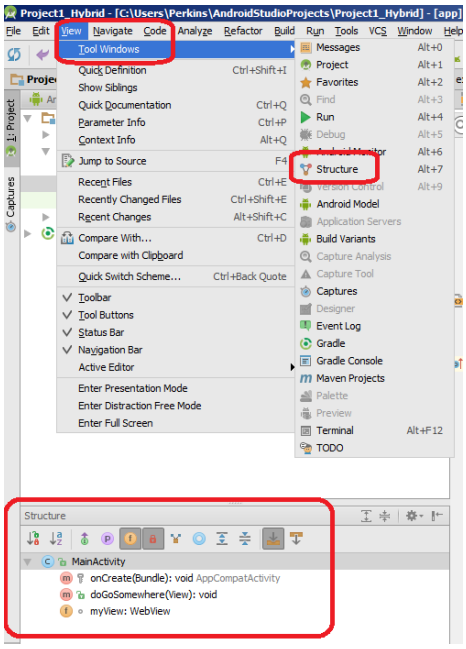
Manifest defines your app, what **permissions** it needs (read by google play and used to ask you "do you want to allow this app to…" and what **UI and components** it will use

Res folder

Holds xml layout files (describe UI)

Strings you will use, colors, drawables

Use Structures view to see object hierarchy

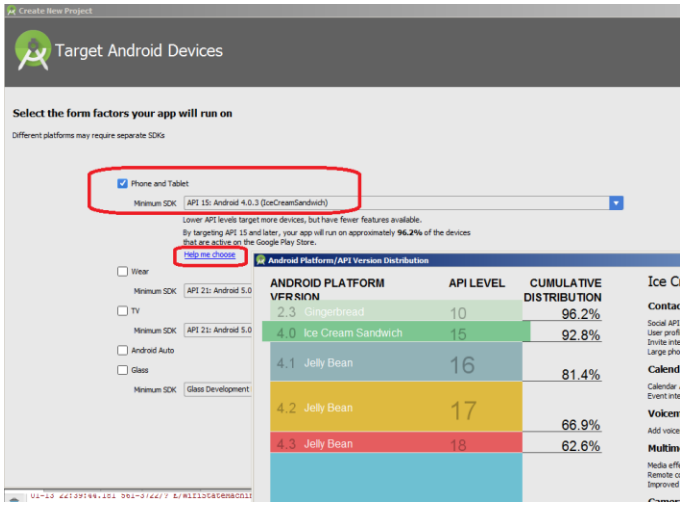


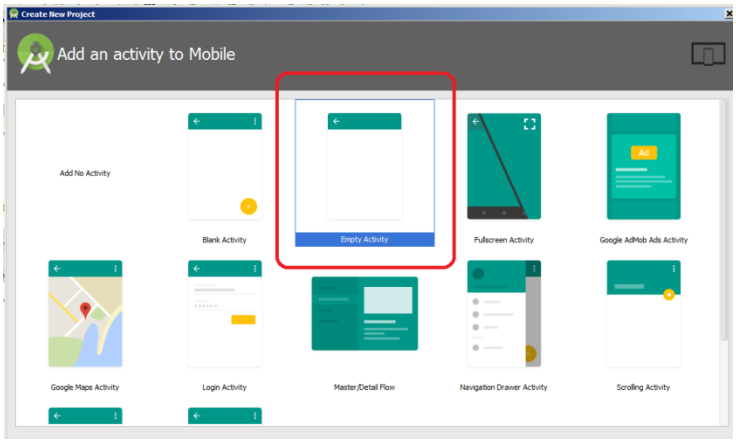
Development

New Project

Package

Minimum sdk





<u>Show</u>

Build, Run

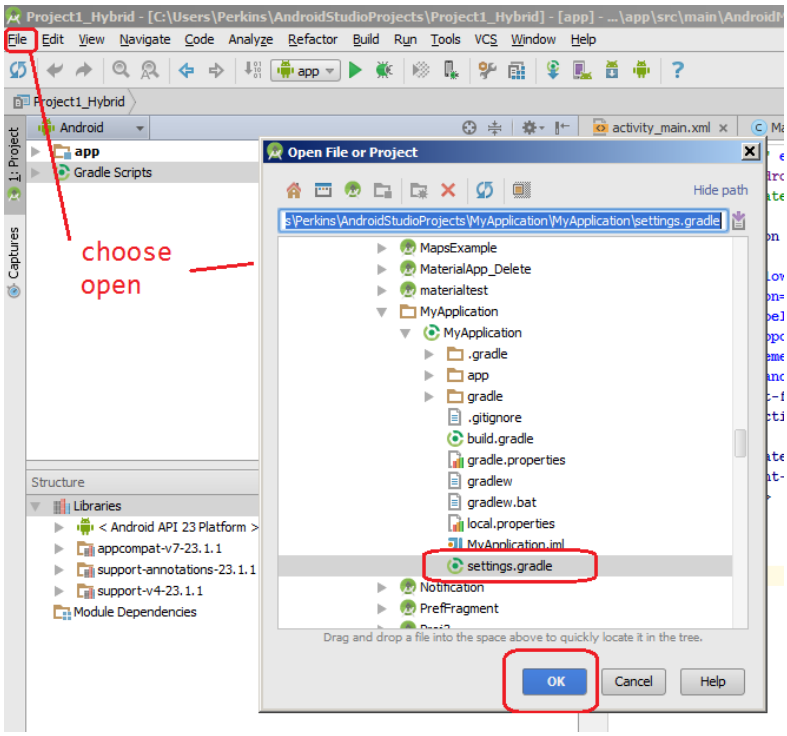
Debug

Show

- Breakpoints
- Watchs
- Log
- Show ctrl-j to make tag and log statement

Stopped here 1/14/16

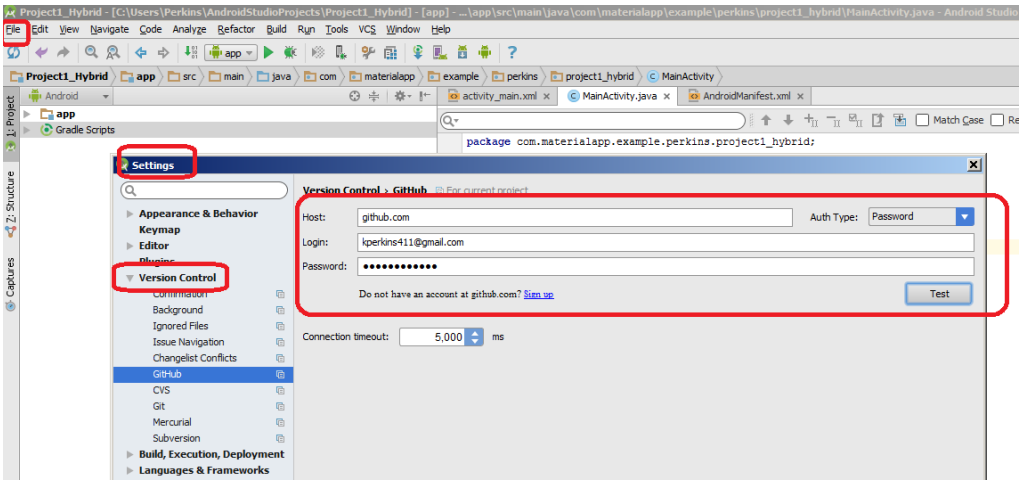
show uninstall, reinstall, test
clean
close project
Find (show in folder)
Zip it
Delete orig project
Unzip
Import project (via settings.gradle)



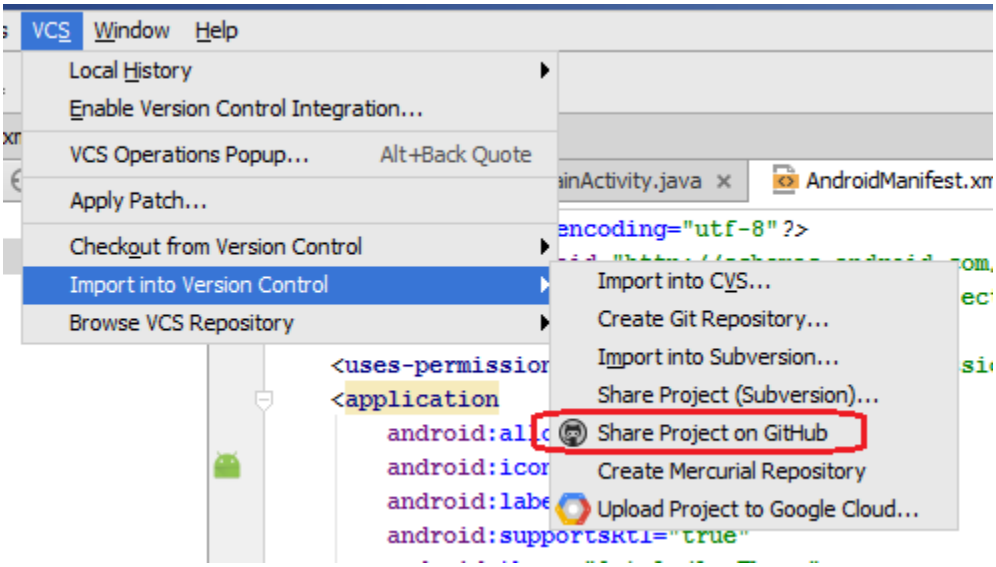
Ready to go

Source Control- I use git and GitHub

First set it up

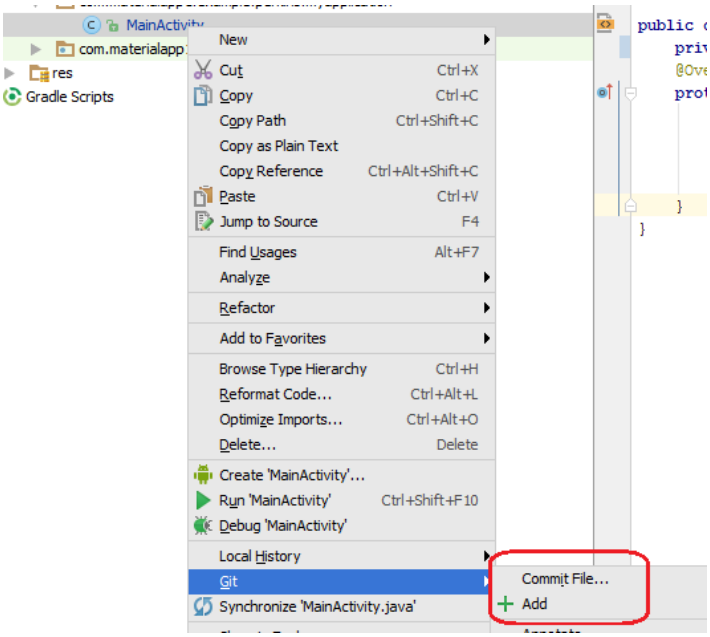


Share on Github

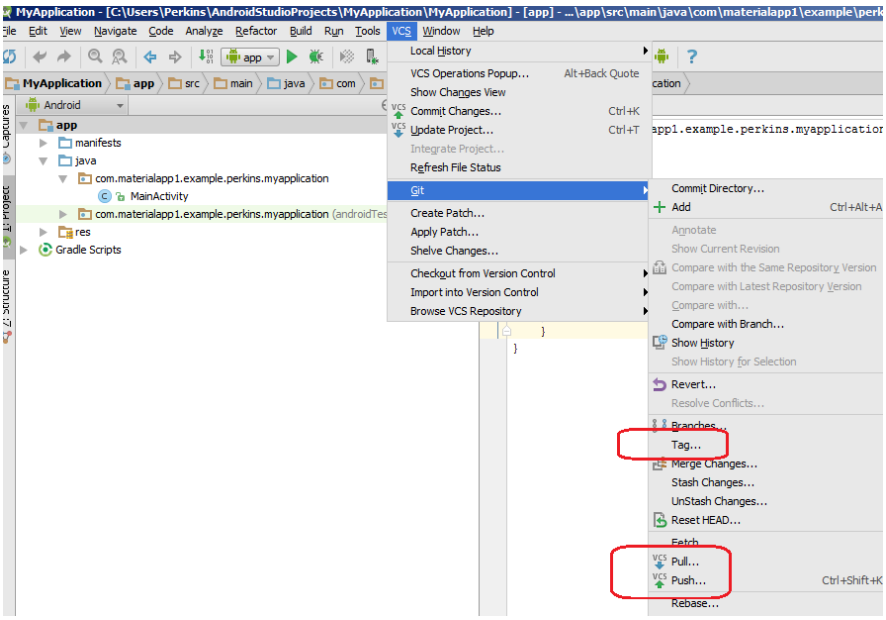


Will push it on up to github if your account is setup

Now change a file and it turns blue in the Project Window, so commit it locally.



To push up, or tag



Tips:

If everything goes wonky kill AS (should kill adb.exe) and restart. If adb.exe remains running kill it and then restart AS.

If you cannot connect to device over usb cable suspect the cable! Try another, better yet try one that you have verified with another device