Installation Cheat Sheet 2 - OpenCV 3 and Python 2.X
Using Windows 10 + Python 2 + precompiled binaries

Click here to go to the YouTube video for this Cheat Sheet

GitHub page with all Cheat Sheets and code

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Note: **Bold blue** indicates something that will change depending on your version of OpenCV, Python, or NumPy

1) If you have a version of both Python **2.X** and Python **3.X** installed on your computer currently it would be recommended to uninstall Python **3.X**, remove any references to Python **3.X** in your PATH variable, then reboot before continuing. This guide will not cover installation/configuration with OpenCV in the case of concurrent Python **2.X** and Python **3.X** installs.

2) Download the latest version of OpenCV, ex. OpenCV **3.0.0**

3) Make a folder "C:\OpenCV-**X.X.X**" for your version of OpenCV, for example. "C:\OpenCV-**3.0.0**" and extract OpenCV to there

4a) Download and install the latest Python **2.X** (NOT Python **3.X**), for example **2.7.10**
4b) Some users have experienced Python hanging on Windows 10 when attempting to install before the installation screen appears. If this happens to you, it is possible that not running as an administrator may be the cause, see **Appendix A**.
4c) During the install, on the screen "Customize Python **2.7.10**", scroll down to "Add python.exe to Path", click on the drop down and choose "Will be installed on the local hard drive", this will add Python to your PATH (for all other install options the defaults are ok)

5) Reboot and make sure "C:\Python**27**\" is in your path variable, if not, add it (also remove any other Python paths) then reboot again

6a) Download and install the latest NumPy matching your version of Python **2.X**, for example "numpy-**1.9.2**-win32-superpack-python**2.7**.exe"
Note that the version of NumPy has to match within **2.X**, i.e. if you have Python **2.7.X**, the NumPy for Python **2.5.X** or **2.6.X** will *not* work.
6b) If the NumPy install hangs before the installation screen appears, reboot, then rather than double-clicking on the NumPy download, instead right click the NumPy download and choose "Run as administrator"

7) If you do not want to use IDLE (the editor that ships with Python), download and install your editor of choice. PyCharm Community Edition by JetBrains is highly recommended (yes, it's free, and has good auto code completion)

8a) Copy "cv2.pyd" from:

C:\OpenCV-**X.X.X**\opencv\build\python**2.7**\x86\cv2.pyd
To:
C:\Python**27**\Lib\site-packages
(note that I recommend using the 32 bit version (from the x86 directory) of cv2.pyd even if you are using a 64-bit computer)
8b) Reboot

9) From my MicrocontrollersAndMore GitHub page decide which example you are going to use:
CannyStill.py (uses a still image)
CannyWebcam.py (uses a webcam)
RedBallTracker.py (tracks a red ball, uses a webcam)

10) Make and name a new Python .py file as preferred, ex "CannyStill1.py". For those of you that are new to Python, the easiest way to do this is to navigate to your chosen directory in Windows Explorer, then right click in the directory, choose New -> Text Document, then rename the file from a .txt extension to a .py extension (Windows will ask "Are you sure you want to change the extension?", answer "Yes"). If you currently do not have Windows 10 configured to allow viewing / editing of file extensions, go to: right click on Start -> Control Panel -> View by: Large icons -> File Explorer Options -> View tab -> uncheck "Hide extensions for known file types".

11) Copy/paste the entire text of your chosen example into your chosen Python editor

12) If you are using an example with a still image (i.e. CannyStill.py), copy any JPEG image into the project directory and rename it "image.jpg". You can use the "image.jpg" from my MicrocontrollersAndMore GitHub page if you would like to see the same results as in the video (if you are using a webcam example then this step does not apply).

13) Run the program, for those of you that are new to Python, this can be done in one of at least 3 ways:
a) choose run in your chosen Python editor
b) double click on the .py file in Windows Explorer
c) run from the operating system command prompt, i.e. @WindowsCommandPrompt type "cd C:\PythonProgs", then "CannyStill.py"

Appendix A - How to install Python as an Administrator in Windows 10

If downloading Python and double-clicking on the downloaded .msi file as usual results in the Python install hanging before it begins, try the following steps to install Python as an administrator. With executables you can simply right-click on the downloaded file and choose "Run as administrator", but the Python .msi file is not an executable and therefore does not present this option. The following is a work around to install Python as an administrator in Windows 10:
A1) In the "Search the web and Windows" box at the lower left, type "cmd", an option "Command Prompt" should appear.
A2) Right-click on "Command Prompt" and choose "Run as administrator"
A3) cd to the directory where you have downloaded the Python .msi install file.
A4) Type the name of the python install file, ex. python-**2.7.10**.msi