

Installing *PVTfree*



Steve Furnival

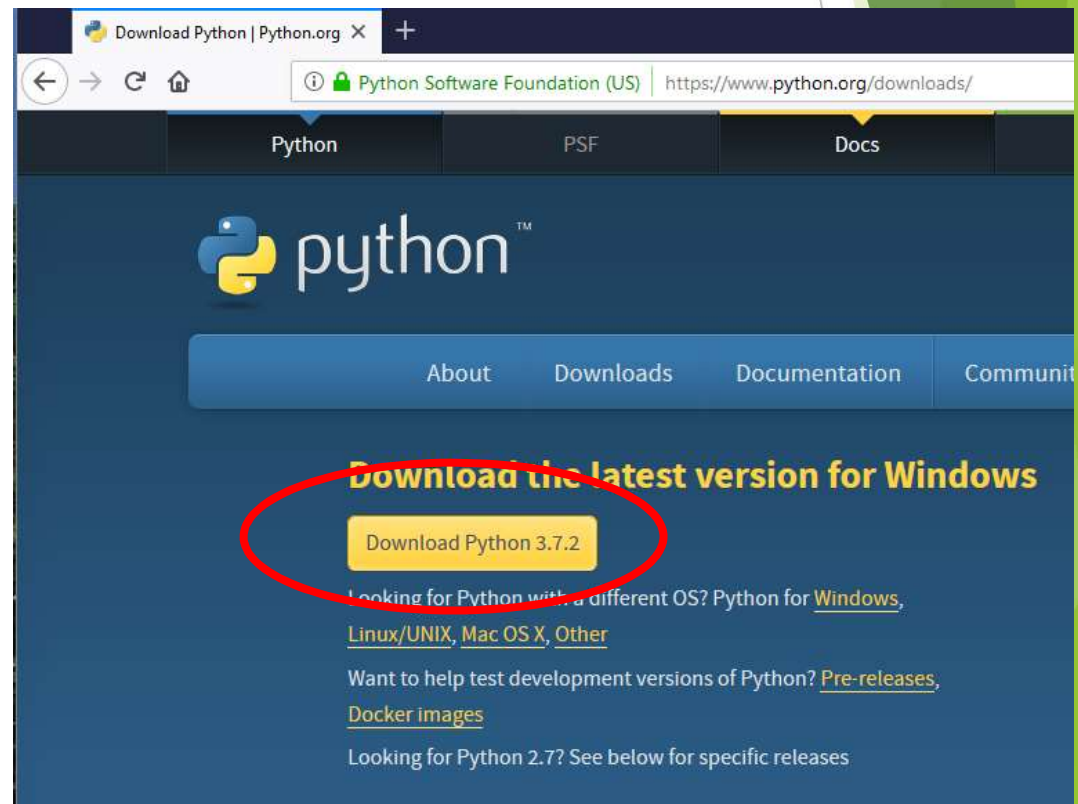
June 2019

PVTfree

- ▶ *PVTfree* is an Equation of State PVT Package, that is free!
- ▶ It is available as Open Source Code under a GNU General Public Licence (GPL)
 - ▶ See COPYING.txt in the 'PVTfree' directory
- ▶ So you are free to do with it as you chose, but no warranty is provided, nor support given, unless by prior agreement with the author, Steve Furnival of HoBoil Limited, Banchory, UK
- ▶ *PVTfree* is written in Python which must be installed on your PC before the code can be used, and some libraries must be activated
- ▶ The following slides show the suggested steps to be taken
- ▶ Any problems, contact Steve via dev.pvtfree@gmail.com
 - ▶ Though there's no guarantee he'll reply!

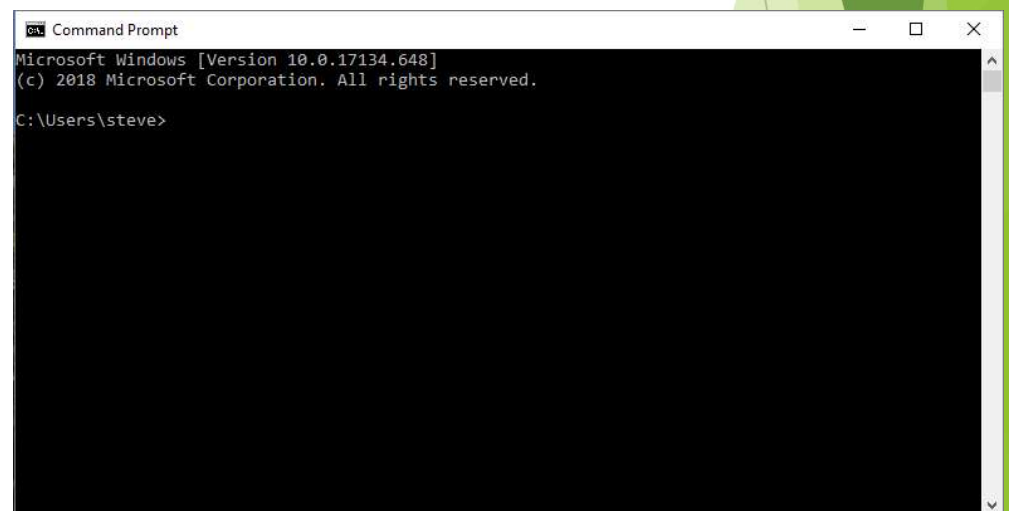
Download Python

- ▶ Go to <https://www.python.org/downloads/> and click the download button (highlighted in red below)
 - ▶ At the time of writing, version 3.7.2 is suggested - this is OK
 - ▶ You will probably need IT Admin rights if it's a Work PC



Copy Software

- ▶ Once installed, create a directory on your main working drive (C:, D:, etc.) into which the *PVTfree* code can be copied
 - ▶ It is best to have this directory 'high-up' on the drive as the user will be accessing the software via the Command-Prompt (aka 'DOS' box), so this will minimise typing
 - ▶ The *PVTfree* code will be supplied separately
- ▶ Open the Command Prompt - type comm in the search box next to the Windows Start button
- ▶ The box (right) should appear
- ▶ Select the required drive
- ▶ Change directory (cd) into the *PVTfree* directory



'Install' Libraries & Test *PVTfree*

- ▶ In the Command Prompt, type (see <https://www.scipy.org/install.html>)

`py -m pip install -user numpy scipy matplotlib`

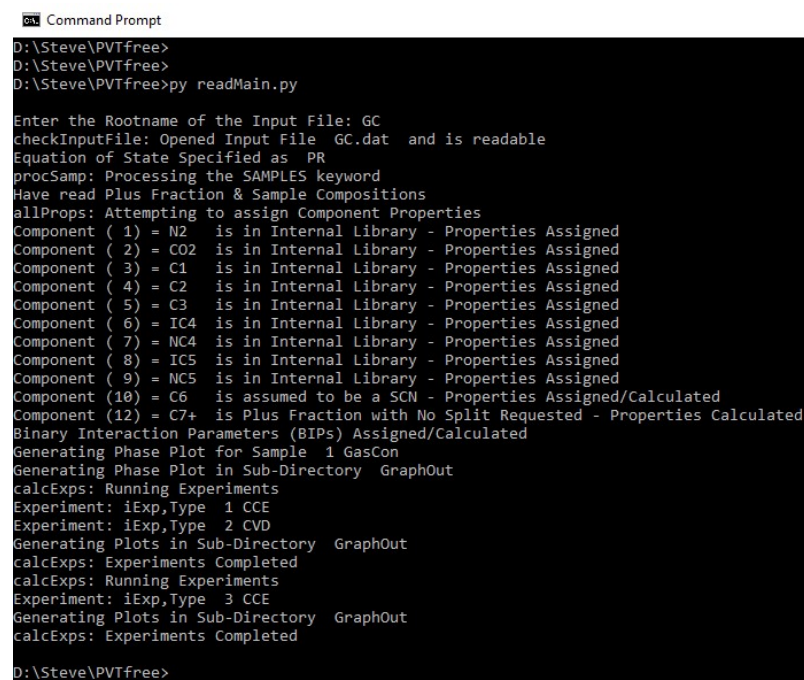
- ▶ Note it's a single 'dash' before pip, double dash before user. You should now be ready to go!

- ▶ Type `py PVTfree.py`

- ▶ Or use runit batch file (edit as need be)

- ▶ And when prompted, type `GASandOIL`

- ▶ You should see something this



```
Command Prompt
D:\Steve\PVTfree>
D:\Steve\PVTfree>
D:\Steve\PVTfree>py readMain.py

Enter the Rootname of the Input File: GC
checkInputFile: Opened Input File GC.dat and is readable
Equation of State Specified as PR
procSamp: Processing the SAMPLES keyword
Have read Plus Fraction & Sample Compositions
allProps: Attempting to assign Component Properties
Component ( 1) = N2 is in Internal Library - Properties Assigned
Component ( 2) = CO2 is in Internal Library - Properties Assigned
Component ( 3) = C1 is in Internal Library - Properties Assigned
Component ( 4) = C2 is in Internal Library - Properties Assigned
Component ( 5) = C3 is in Internal Library - Properties Assigned
Component ( 6) = IC4 is in Internal Library - Properties Assigned
Component ( 7) = NC4 is in Internal Library - Properties Assigned
Component ( 8) = IC5 is in Internal Library - Properties Assigned
Component ( 9) = NC5 is in Internal Library - Properties Assigned
Component (10) = C6 is assumed to be a SCN - Properties Assigned/Calculated
Component (12) = C7+ is Plus Fraction with No Split Requested - Properties Calculated
Binary Interaction Parameters (BIPs) Assigned/Calculated
Generating Phase Plot for Sample 1 GasCon
Generating Phase Plot in Sub-Directory GraphOut
calcExps: Running Experiments
Experiment: iExp,Type 1 CCE
Experiment: iExp,Type 2 CVD
Generating Plots in Sub-Directory GraphOut
calcExps: Experiments Completed
calcExps: Running Experiments
Experiment: iExp,Type 3 CCE
Generating Plots in Sub-Directory GraphOut
calcExps: Experiments Completed

D:\Steve\PVTfree>
```

Other Tips

- ▶ Still struggling? It might be worth downloading and installing a 'complete' package like Anaconda
 - ▶ It's big (around 5GB of disk space required)
 - ▶ But it contains everything ...
- ▶ It is also worth having access to a good ASCII text editor
 - ▶ I use TextPad which can be bought for a few \$ (you can download it for free but it will prompt you to pay up every few times you use it)
 - ▶ I have used CRiSP in a previous company
 - ▶ Notepad++ is similar, and is genuinely free, see <https://notepad-plus-plus.org/download/v7.6.4.html>