Installing UMAP on Windows

How To Setup Miniconda, Python and Java for a 64bit Windows 10 System

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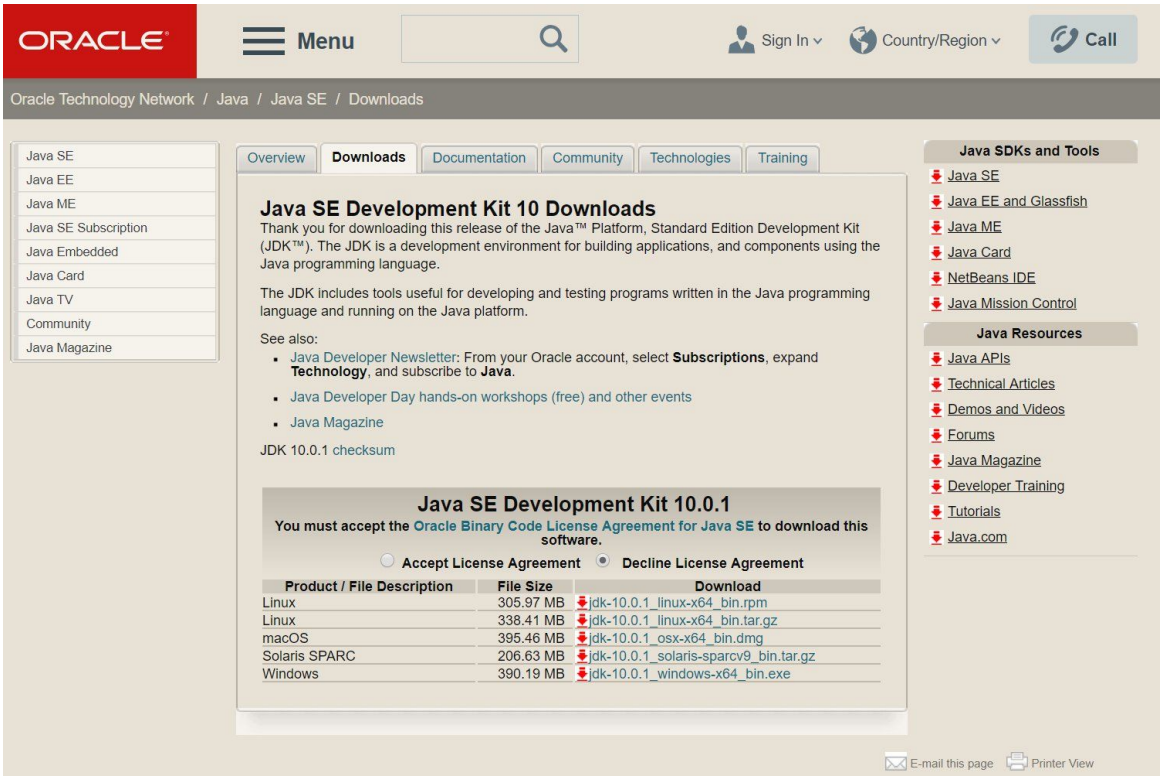
1. Download JDK/JRE packages from Oracle.

1.1. In a browser search for Java SE Development Kit 10 Downloads or go to this link: http://www.oracle.com/technetwork/java/javase/downloads/jdk10-downloads-4416644.html

1.2. Click on **Accept License Agreement.** Under the Download menu, click the Download link that corresponds to the .exe for your version of Windows. In this case it was *jdk-10.0.1_windows-x64_bin.exe*

1.3. Start the JDK installer by double-clicking the installer's icon.

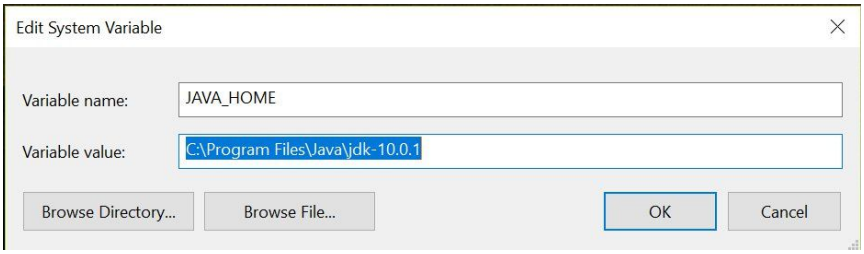
1.4. Follow instructions provided by the installation wizard.



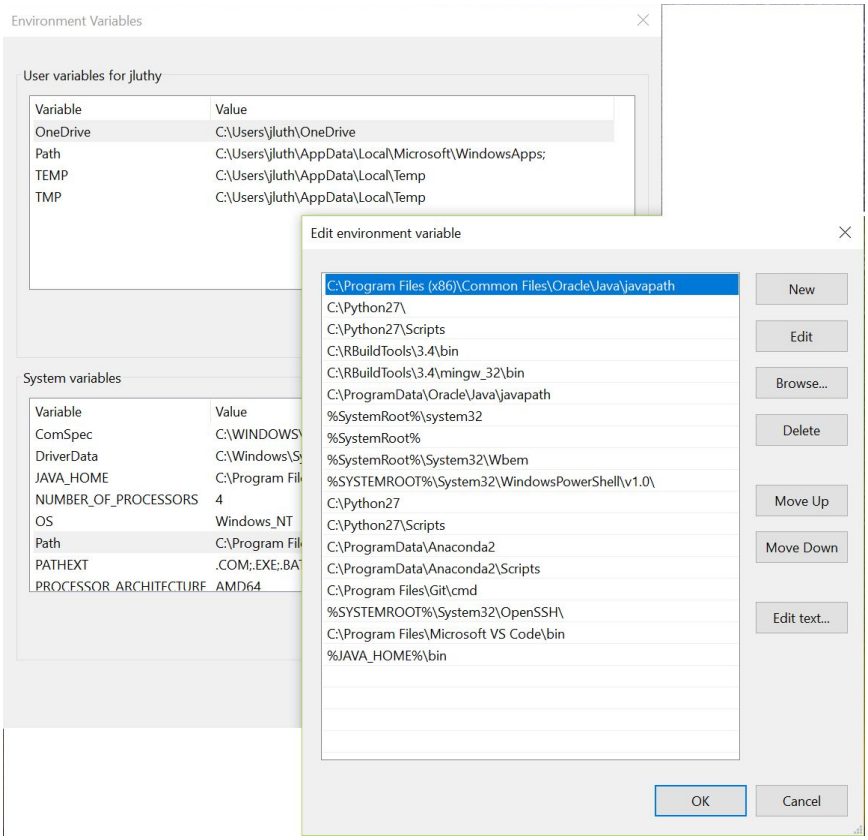
2. Set Path for Java

2.1. In the windows search bar type, “Advanced System Settings” to open System Properties window. Click on *Environment Variables* at bottom left of window.

2.2. A new window opens up. Click “New…” below System variables. For Variable Name enter “JAVA_HOME” and for Variable value enter path to location of newly installed JDK (i.e. C:\Program Files\Java\jdk-10.0.1) then click OK.



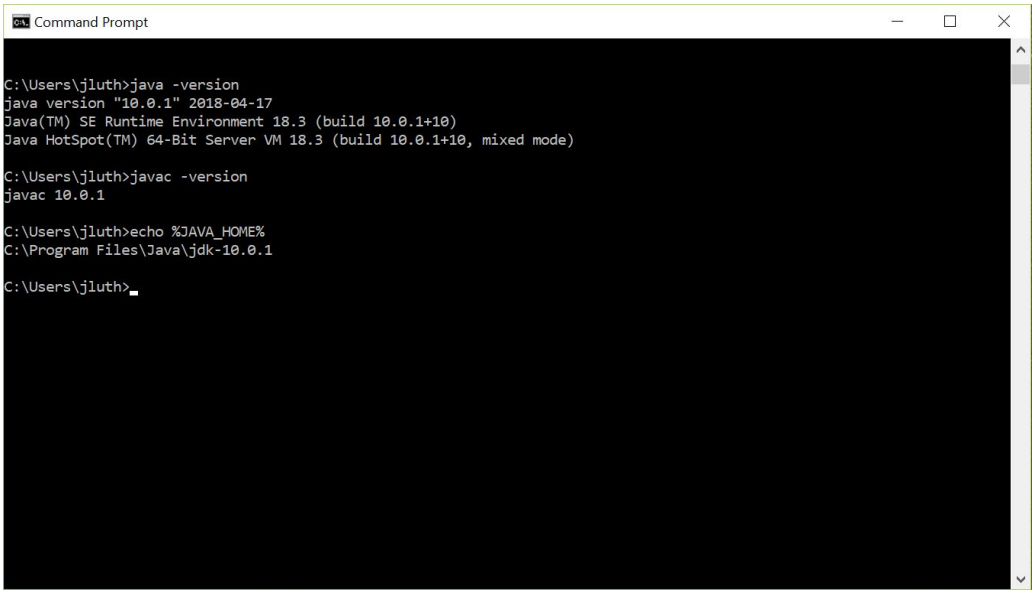
2.3. In same Environmental Variables window, click on *Path* under System Variables and select “Edit…” The Edit environmental variable window will open up. Click “New” and type “%JAVA_HOME%\bin” then click OK button. Click OK button again to close Environmental Variables window. You must now restart your PC for changes to take effect.



2.4. Verify the installation was successful by opening the command prompt by typing “cmd” in the windows search and pressing enter. When the command prompt open type the following and press enter after each:

```
java -version
javac -version
echo %JAVA_HOME%
```

2.5. You should see results as below:



3. Install Miniconda Package Manager (includes Python).

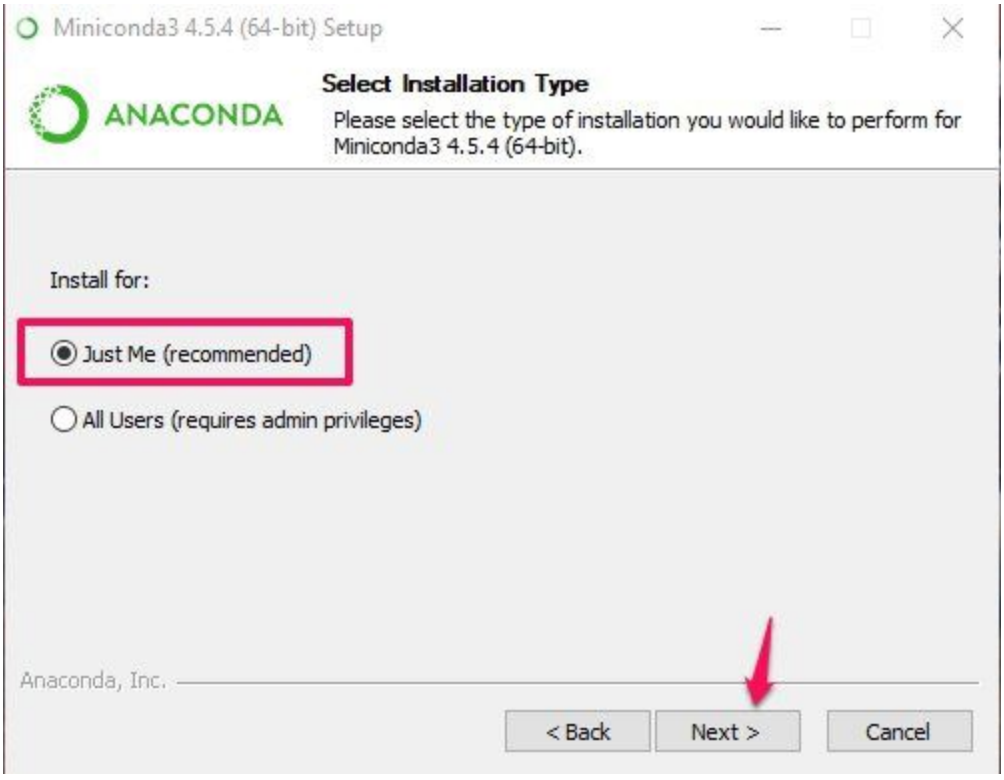
3.1. Conda is a powerful package manager and environment manager that you use with command line commands at the Anaconda Prompt for Windows. Navigate to https://conda.io/miniconda.html and download Miniconda for Python 3.6



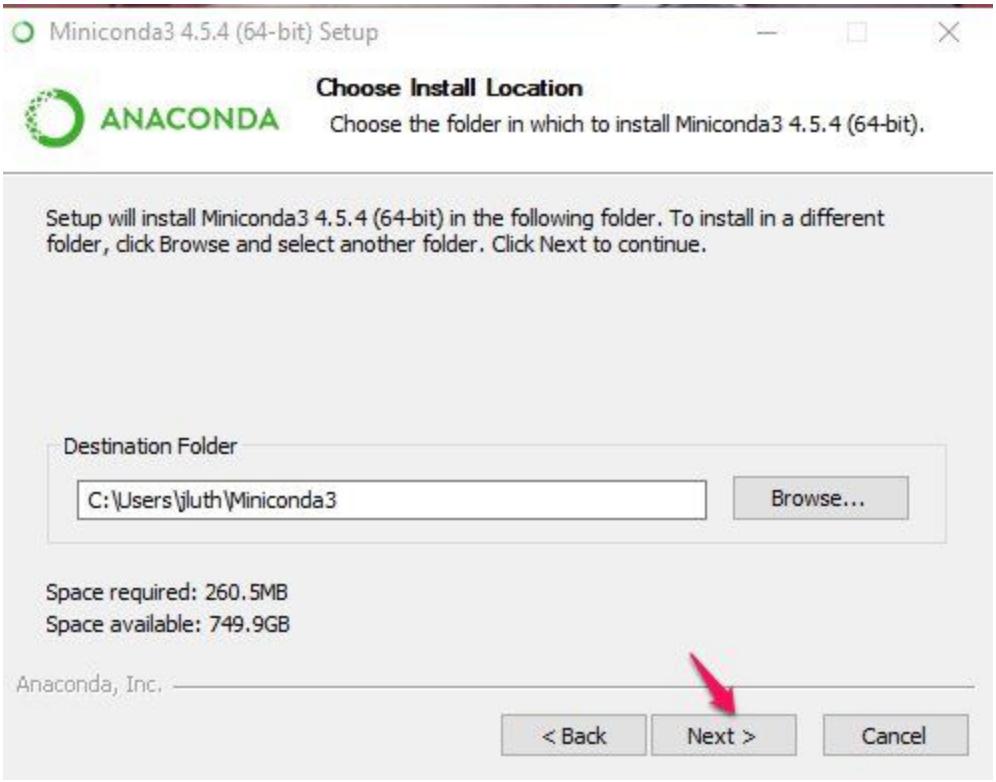
3.2. Start the installer by double clicking on the download. You will see the following window pop up. Click the Next button to begin.



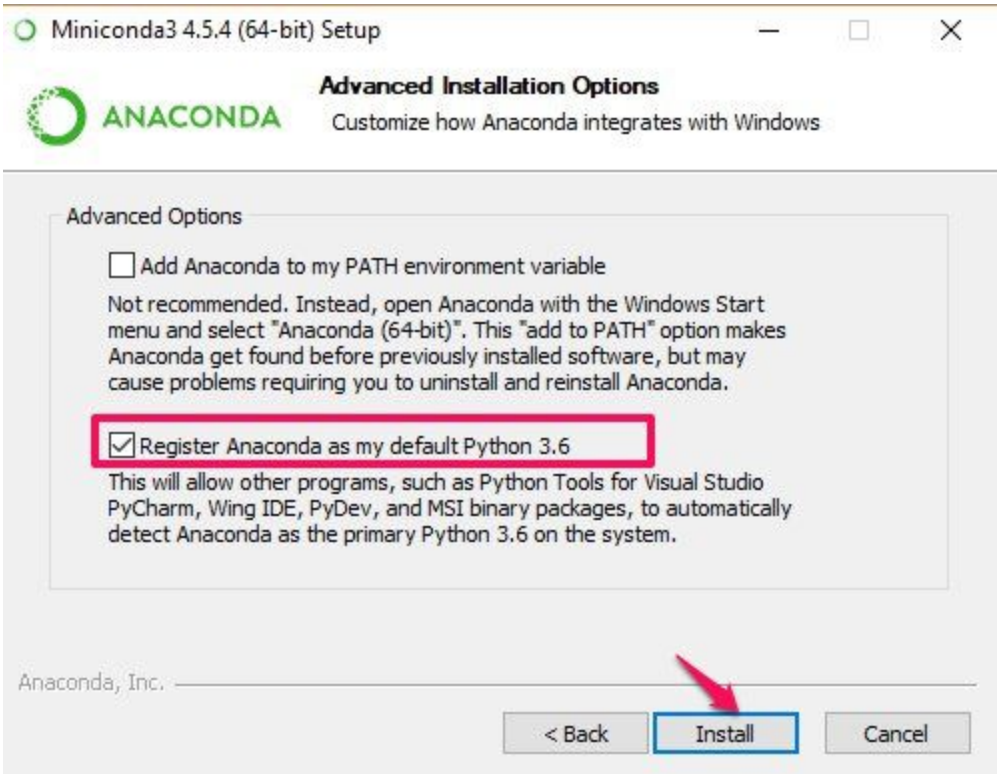
3.3. At the Installation Type window select the “Just Me” option.



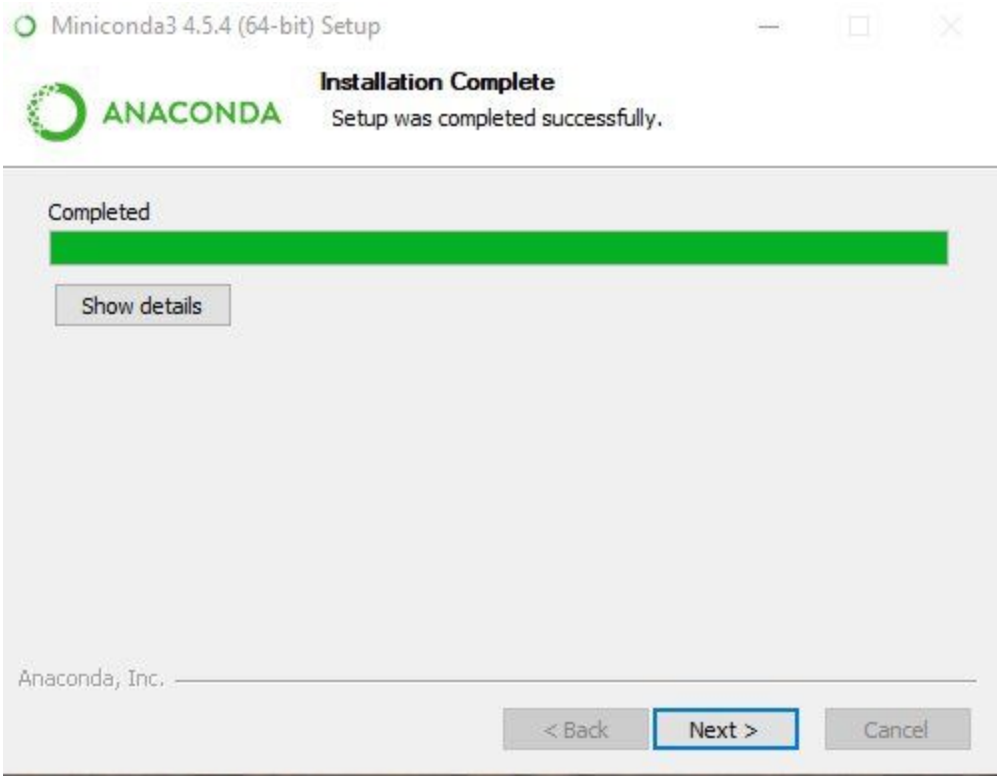
3.4. Accept installation location, click Next.



3.5. Leave the ‘Register Anaconda as my default Python 3.6” box checked. Then click Install.

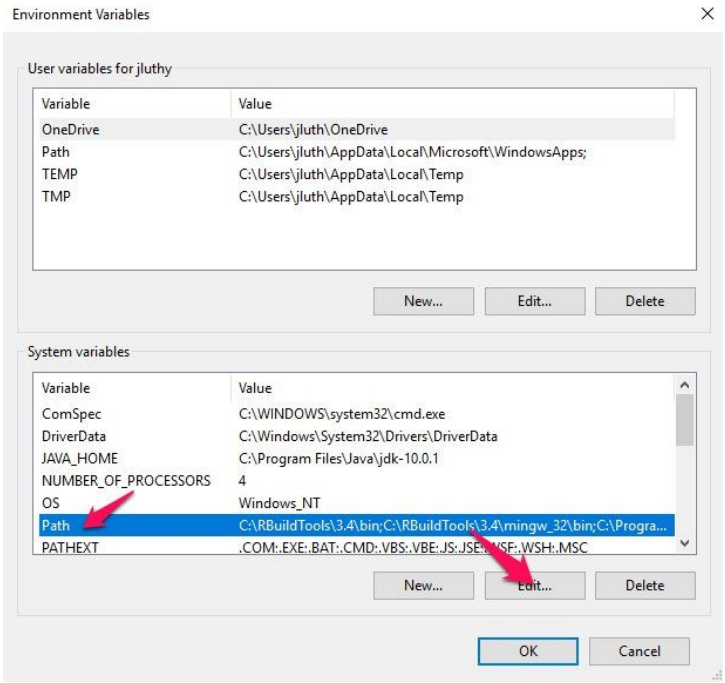


3.6. Finished Installation.

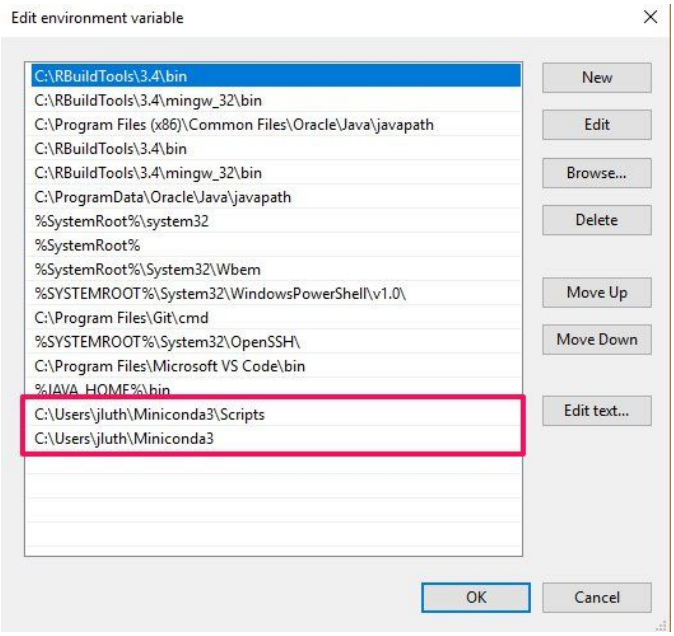


3.7. Now add conda and Python to your PATH.

3.7.1. Open Environment Variables window to add paths.



3.7.2. Add the path of both the Miniconda3 installation and ~Miniconda3\Scripts.



3.8. Test the installation of Conda.

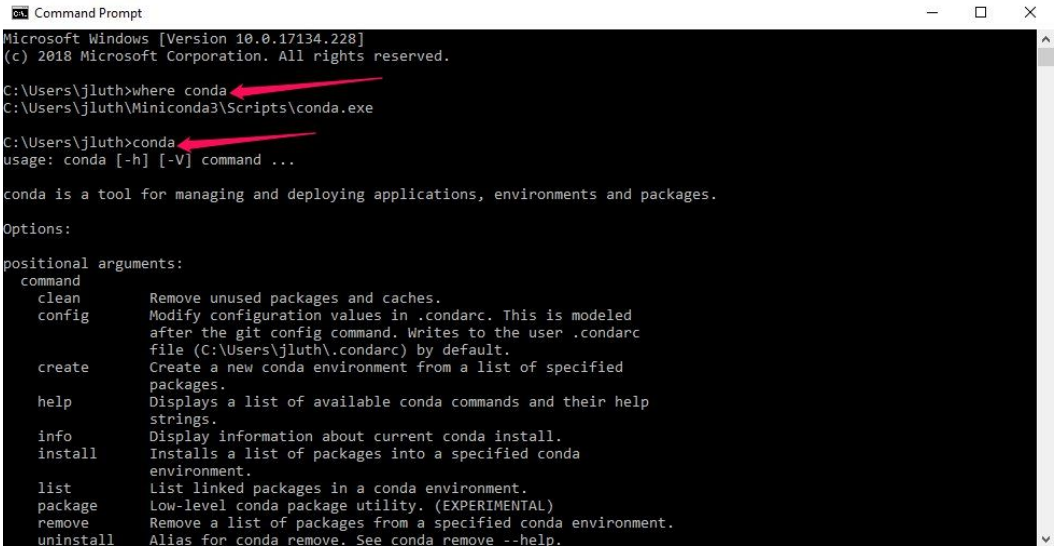
3.8.1. Open command prompt and type:

```
where conda
```

You should see path you entered in environmental variables.
Then Type:

```
conda
```

You should see some descriptions about arguments available for use.

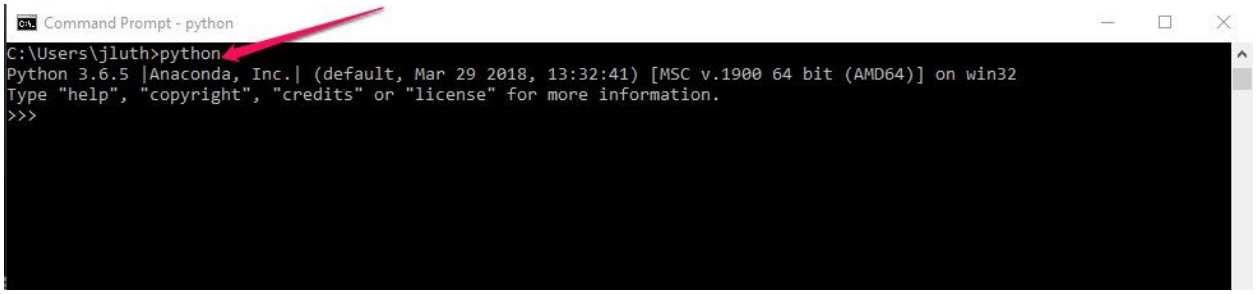


3.9. Test the installation of Python.

3.9.1. In the same command prompt window type:

python

You should see a description of the version of Python installed.



3.10. Next install packages required to run Umap.

3.10.1. Requirements:

- numpy
- scipy
- scikit-learn
- Numba

There are a few options for installing packages.

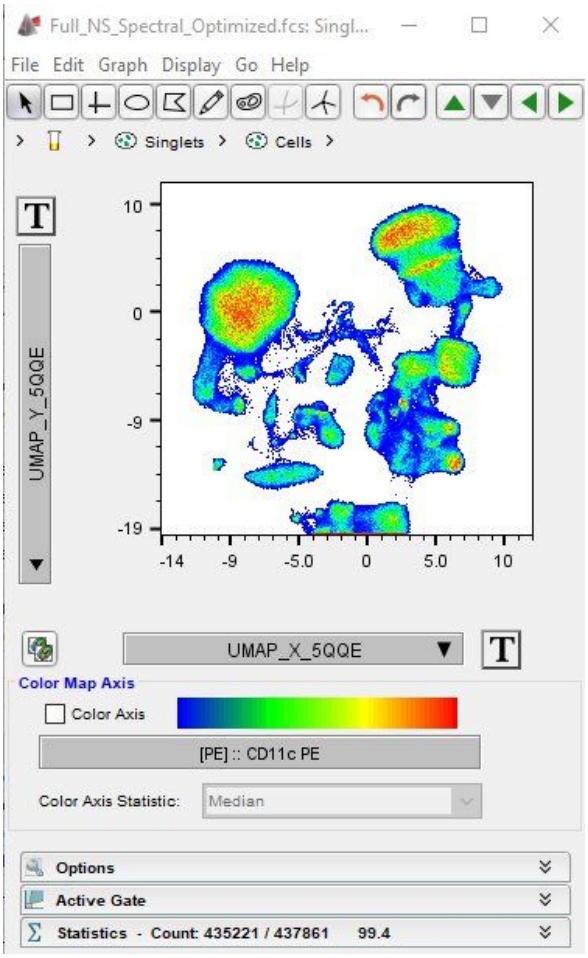
```
conda install -c conda-forge umap-learn
```

If that does not work then try:

```
conda install numpy scipy
conda install scikit-learn
conda install numba
pip install umap-learn
```

3.11 Close the command prompt window. You are now ready to run UMAP plugin.

<u>UMAP in FlowJo v10 on Windows 10:</u>



Resources

Dr. Leland McInnes' GitHub, developer of the UMAP algorithm:
github.com/lmcinnes/umap