Installing Python on UC windows box

Installing Python development environment is not very straightforward if you have a standard UC windows desktop. Follow this instruction to work around the restrictions for non-admin users.

(Update: You could follow this manual if you want to set up your personal computer where you have Administrator priviledge. I will make a note if you have to do things differently)

Anaconda

From Software Center, select Anaconda and git to install



If installing on your PC, get Anaconda and git packages from the link below and install them.

https://www.anaconda.com/products/distribution

https://git-scm.com/download/win

During git installation, you can stick to the default selections.

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Note: Pictures	🕈 📜 .spyder-py3	25/10/2022 11:20 am	File folder				
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	Desktop	25/10/2022 12:29 pm	File folder				
OneDrive	Documents	23/08/2022 1:24 pm	File folder				

When installed, start Anaconda Prompt



Enter this command: conda create --prefix YOUR_USER_FOLDER\envs

!! You should not have " "(white space) in YOUR_USER_FOLDER. Go with a short, one word.

<pre>(base) C:\Users\uceqengsw>conda createprefix c:\users\uceqengsw\envs Collecting package metadata (current_repodata.json): done Solving environment: done</pre>
==> WARNING: A newer version of conda exists. <== current version: 4.10.1 latest version: 22.9.0
Please update conda by running
\$ conda update -n base -c defaults conda
Package Plan
environment location: c:\users\uceqengsw\envs
Proceed ([y]/n)? y
Preparing transaction: done Verifying transaction: done Executing transaction: done #
π # To activate this environment, use #
\$ conda activate c:\users\uceqengsw\envs
To deactivate an active environment, use
\$ conda deactivate

Enter this command: conda activate YOUR_USER_FOLDER\envs



Notice the prompt changes from (base) to (c:\users\...\envs)

Enter this command: conda install -c conda-forge numpy matplotlib jupyterlab pandas geopandas scipy fiona

If installing on your PC, you can use Anaconda Navigator to install packages, instead of the command above. Your Git bash doesn't have a working conda environment, and Anaconda Prompt doesn't know how to communicate with conda repositories yet. It will give you an OpenSSH error.

(Note: the command in screencapture below is outdated)



This will start to install lots of things. Answer "Yes". Towards the end of installation, it will ask Admin password. You can skip that part. Choose cancel or No to close that dialog.

Open Anaconda Navigator and check Environments. You should see "envs".



From Anaconda Prompt, if you enter "where python", it should locate python.exe under your envs folder.



Git-Bash Configuration

Open File Explorer and go to your Users folder.

Open Notepad and start a new file.

Insert the following text into Notepad. Replace "uceqengsw" with your username.

```
alias python="winpty /c/Users/uceqengsw/envs/python"
alias jupyter="winpty /c/Users/uceqengsw/envs/Scripts/jupyter"
. /c/Program\ Files/Anaconda3/etc/profile.d/conda.sh
conda activate /c/users/uceqengsw/envs
```

(i) This line

. /c/Program\ Files/Anaconda3/etc/profile.d/conda.sh

depends on where you installed your Anaconda. If you are installing Anaconda on your PC, the location may be different.

Save it as .bashrc

🥘 *.bashrc - Notepad

File Edit Format View Help

```
alias python="winpty /c/Users/uceqengsw/envs/python"
alias jupyter="winpty /c/Users/uceqengsw/envs/Scripts/jupyter"
. /c/Program\ Files/Anaconda3/etc/profile.d/conda.sh
conda activate /c/users/uceqengsw/envs
```

Notice the .bashrc file in your Users folder.

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Downloads *	🛃 Videos	8/08/2022 10:40 am	File folder					
A Decumente	bash_history	27/10/2022 11:35 am	BASH_HISTORY File	2 KB				
Documents x	bash_profile	27/10/2022 11:35 am	BASH_PROFILE File	1 KB				
Nictures 🖈	bashrc	27/10/2022 11:29 am	BASHRC File	1 KB				
👌 Music	.condarc	27/10/2022 11:31 am	CONDARC File	1 KB				
📑 Videos	ininttyrc	27/10/2022 11:25 am	MINTTYRC File	1 KB				
 On a Drive 	python_history	25/10/2022 11:35 am	PYTHON_HISTORY File	0 KB				
OneDrive	.viminfo	27/10/2022 11:35 am	VIMINFO File	8 KB				
🗢 This PC	📄 conda	25/10/2022 12:48 pm	File	0 KB				
🔰 3D Objects 🗸 🗸	NTUSER.DAT	25/10/2022 10:59 am	DAT File	2,048 KB				
32 items 1 item selected	275 bytes							

Start Git-Bash terminal



The first line of your terminal should be (C:....). If it is (base), try the trouble shooting steps below.

Enter "where python" or "which python". It should show python.exe under your Users directory, not in C:\Program Files\Anaconda3



If you don't see it, there is something not quite right. Try Trouble Shooting steps.

Otherwise, try "python". You should see python starting normally.



If everything is good, you can move on to set up PyCharm.

Trouble Shooting

• The first line in terminal shows (base)



This means your new environment hasn't been correctly activated when the Git-Bash starts.

Let's manually activate it. Replace "uceqengsw" with your Username, and execute the command.

```
conda activate /c/users/uceqengsw/envs
```

If you see (C:...) instead of (base), at least your conda activate command works well. It could be the default (base) environment getting loaded by conda.



Try the following command. Enter the command, and open a new Git-bash terminal. Check the top of the terminal again.

conda config --set auto_activate_base false

If you see (C:..) instead of (base), it's all good.,

• Terminal says something about "conda init <shell>": I don't think this can happen, but if it does, let me know. (me = Sung)

If your problems have been resolved, see if you can execute "python".

PyCharm

Google and download PyCharm Community Edition.

Try to install, and you will be "welcomed" by this dialog. Click No.



Thanks God, you can install PyCharm somewhere other than the default Program Files (where you need Admin privilege)

By default, it will advise you to install in AppData\Local under your user folder. It's good, but copy the path to notepad, BEFORE you click "Next"/

PyCharm Communi	ty Edition Setup		—		\times
PC	Choose Install Loca Choose the folder in v	tion /hich to insta	ll PyCharm Con	nmunity Ec	lition.
Setup will install PyCh folder, click Browse ar	narm Community Edition in the nd select another folder. Click I	following fo Next to contir	der. To install i ue.	n a differe	nt
Destination Folder					
Destination Folder	jsw\AppData\Local\JetBrains\P	/Charm Com	mun Bro	wse]
Destination Folder C:\Users\uceqeng Space required: 1.4 G	isw\AppData\Local\JetBrains\P	yCharm Com	mun Bro	wse]
Destination Folder C:\Users\uceqeng Space required: 1.4 G Space available: 768.9	isw\AppData\Local\JetBrains\P iB 9 GB	yCharm Com	mun Bro	wse]

Tick all boxes. I forgot to tick ".py", which is easy to fix later.

PyCharm Community Edition Setup	n Options
Configure	your PyCharm Community Edition installation
Create Desktop Shortcut PyCharm Community Edition Update Context Menu Add "Open Folder as Project"	Update PATH Variable (restart needed) Add "bin" folder to the PATH
Create Associations	
	< Back Next > Cancel

From this point, just keep going. It should install ok.

After installation, open Anaconda Navigator, go to File>Preferences. There are two things. Select "envs" to be your Default conda environment, and set PyCharm CE Path. Use the Path you copied during PyCharm installation you did above.

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Prefer	ences			х	
	Enterprise 4 Repository AF	PI domain	http(s)://example.com	^	
	Enable SSL ve	erification	Disabling this option is not recommended for security reasons		
	SSL certificate path (Optional)	Certificate to verify SSL connections]	
	Default conda env	rironment (envs 🗸		
	Quality improvement	reporting 🧃			
	Enable offl	line mode 🏼 🧃			
	Hide offline mo	de dialog			
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	Hide update dialog o	on startup			ensior
	Hide running applicatio	ons dialog			
	Enable high D	PI scaling			
9	Show application startup error i	messages			
	PyCharr	n CE path 🤇	munity Edition 2022.2.3\bin\pycharm64.exe		
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Cor	nfigure Navigator Configu	ure Conda			
Res	set to defaults		Cancel	Apply	ngs
Ar	aconda Blog			VEDJOER	client

PyCharm, by default, will try to create a new environment for every new project.

I think it's most sensible for a research student to stick to the same environment (instead of creating a new env for each project). As PyCharm doesn't know our Conda environment, let's configure it.

29	New Project				
Loo		eqengsw\PycharmProjects\pythonProject		5	
-	Python Interpreter:	Previously configured interpreter			
1	New environment	: using 📑 Virtualenv 🔍			
		C:\Users\uceqengsw\PycharmProjects\pythonProject\venv			
		➡ Python 3.9 https://www.python.org/ftp/python/3.9.13/python-3.9.13-amd64.exe			
	Previously configu	ured interpreter		, i	h
U -		No interpreters	- Addu	nterpreter V	
\mathbf{N}				nterpreter	
h 🗹	Create a main.py w				
e					
У					
4	No Python interpret	er selected			
				Cancel	

Go to Conda Environment.

There is a bug in this dialog. You need to set Conda Executable first. conda.exe is at C:\Program Files\Anaconda3\Scripts\conda.exe If you don't do this, you won't be able to proceed. See below.

	🖺 Add Python Interpret	er	×	
С	😽 Virtualenv Environmer 🕥 Conda Environment	t Interpreter:	<new virtualenv=""></new>	
1	🍦 System Interpreter		C:\Program Files\Anaconda3\envs\untitled	
	🎼 Pipenv Environment	Python version:	3.10 🔻	
	🕏 Poetry Environment	Conda executable:	C:\Program Files\Anaconda3\Scripts\conda.exe	
		🗹 Make available	to all projects	

Then click ... for Interpreter and select python.exe in your envs folder.

Add Python Interpreter		Select Pv			
Virtualenv Environment		★ 😐 🛛	⊫ × ເວ	~ @	
System Interpreter					
Pipenv Environment			> 🖿 inclu		
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			E Favorite		
			Local Se		
			My Doc		
				> a file into the space above to quickly lo	
					OK Cancel

When it is all set, your dialog should look like below. Tick "Make available to all projects"



Click OK to finalize.



Now you have everything ready for this project. Click "Create" to start your first PyCharm project.

New Project		
Location: C:\Users\uceqengsw\PycharmProjects\pythonProject		
▼ Python Interpreter: Python 3.10		
New environment using 🙀 Virtualenv 🔍		
Location: C:\Users\uceqengsw\PycharmProjects\pythonProject\venv		
Base interpreter: 🔄 🛃 Python 3.9 https://www.python.org/ftp/python/3.9.13/python-3.9.13-amd64.exe		
Previously configured interpreter		
Interpreter: O Python 3.10 Ct/Users\uceqengsw\envs\python.exe		
Create a main.py Weicome script		
	Create	