

## ASTR 596

Fall 2023

### Python and Jupyter Notebook tutorial (20 points)

This assignment is due by September 1st at noon. It will be handed in on Canvas but will also involve using Github and Jupyter Notebooks. We will start this assignment in the 2076 computer lab. The assignment name in Canvas is “*Python and Jupyter Notebook Introduction*” and is in Module 1

All commands that you need to type will be given in red. Anything written like this **<text>** implies that you need to write something unique to the situation in place of the `<>` statement.

There are a set of python and GitHub tutorials under the Course Documents section of Canvas.

**This is due on September 1st at noon.**

**Read each step carefully in its entirety before attempting that step.**

1. You will use this computer for the first few assignments but may move later.
2. Login with your KU credentials - Do not update Ubuntu if you are prompted.
3. Open the “Terminal” app. You can access this by searching for terminal. You can add this program to your dock by right clicking on the doc icon, which looks like a screen.
4. Type at the command line prompt
  - `/opt/anaconda/bin/conda init`
  - `source ~/.bashrc`
5. At the command prompt type `conda create -n python3env anaconda`
6. Type `conda init bash`
7. Close your terminal window and reopen it
8. Type `conda activate python3env`

This whole process will take a few minutes

9. Make sure you are in your home directory with the command `cd ~`
10. Make a directory called ASTR596 using the commands
  - `mkdir ASTR596` followed by
  - `cd ASTR596`
  - `mkdir Rudnick_repositories`
  - `cd Rudnick_repositories`
  - *expert tip: If you partially type a path or file, and hit the tab key, the terminal will automatically complete the name up until it stops being unique. This can save huge amounts of typing. You can try this by doing*

- `cd ~/ASTR596`
- `cd Rud`*<hit Tab key with no space>*

11. Go in your browser to the following URL [https://github.com/grudnick/ASTR596\\_F23](https://github.com/grudnick/ASTR596_F23)
12. Push the green “Code” button and copy the URL you see.
13. At your command line, type `git clone <copied text>` , where “copied text” is that which you copied in the previous step. This creates a clone of the ASTR596\_FALL21 GitHub repository on your computer

Once your python has finished installing, do the following:

14. Type `cd ~/ASTR596/ASTR596_F23` directory
15. Make a Github account at <https://github.com>
16. Using your account on the Github web page, make a Github repository for this assignment. You can do this by going to the “Repositories” tab on the top of the page and then hitting the green “New” button, also near the top of the page. Your repository must have the name “**Python\_notebook\_intro**”. The repository must be public. When making the repository make sure to check the “Add a README file” button before completing the process.
17. Clone that repository to a new location on your local computer at ~/ASTR596/ by executing the following commands. This location will be the place where you store your versions of all repositories.
  - `cd ~/ASTR596`
  - `mkdir My_repositories`
  - `cd My_repositories`
  - `git clone <your repository address>` (copied from the github web page)
18. Copy the jupyter notebook into the new repository you just made on your computer using this command, all written on one line. Line breaks are not spaces
  - `cp ~/ASTR596/Rudnick_repositories/ASTR596_F23/Python_Intro/python_notebook_intro_student.ipynb ~/ASTR596/My_repositories/Python_notebook_intro`
19. `cd ~/ASTR596/My_repositories/Python_notebook_intro`
20. `jupyter lab python_notebook_intro_student.ipynb`
21. You are now editing your own copy of the notebook. Accessing your repository from github.com, you can add new files or update existing files using the “Add File” button and “Upload files” option. Upload the new notebook that you are in to your repository using the web-page interface. You now have a copy that is stored locally and on the GitHub servers.
22. Complete the exercise in the notebook. Any time you finish a block of work, upload your activity back to the GitHub repository using the web interface and adding a comment about what you have changed.
23. When you are done with the assignment, make sure to upload it one last time. I will grade the most recent version that is on GitHub.
24. Make sure to add me as a collaborator to your GitHub repository. Use **grudnick@ku.edu** as the address when adding me.
25. Submit the GitHub repository URL to the Canvas assignment.