Homework 1

Economics 7103

Spring semester 2021

Initial setup

The goal of this homework is to get you to install and integrate Anaconda, Overleaf, and GitHub. Please follow these initial installation instructions that you will need to complete all of the homeworks:

1. Register for free accounts with GitHub and Overleaf as specified in the homework guidelines.
2. Download Python via the Anaconda distribution and GitHub desktop as specified in the homework guidelines.
3. Complete the GitHub "hello world" exercise: `https://guides.github.com/activities/hello-world/`
4. Complete the Overleaf "hello world" exercise: `https://www.overleaf.com/learn/latex/Questions/How_to_create_a_very_basic_hello_world_document_using_LaTeX`
5. Explore the Spyder introduction videos: `http://docs.spyder-ide.org/develop/current/first-steps-with-spyde html`
6. On Overleaf, link your account with GitHub.

Setting up your homework repository

For this homework, you will create a homework repository in which you will save all of your homework code and output to turn in to me. To do this, you will exactly replicate the files in the `sample_code` folder in the repository I shared with you. This exercise will help you to integrate all of these tools into one automated workflow that is reproducible and able to be shared. To do this, follow these steps (there are other, arguably better ways to do these things, but I am just sharing what I have come to—next year these processes will be updated as I learn more!):

Set up a repository using GitHub desktop.

1. In GitHub desktop, create a new repository using `File, New repository`. Name it `phdee-2021-XX` where you replace `XX` with your own initials. You can create this anywhere on your local system that you would like. Check the box to initialize the repository with a readme. This will create a folder called `phdee-2021-XX` on your computer.
2. In your repository, create a subfolder called `homework1`. Within that subfolder, create two subfolders: one for code called `code` and one for TeX output called `tex`. For an example, see the `sample_code` folder.

Now, copy my Python script, run it, and push the script and output to GitHub:

1. Open up Spyder in Anaconda. Create a new Python script copying the sample code contained in `Sample.py` in the repository I shared with you.
2. Edit the directory paths `datapath` and `outputpath` so that they match the subfolders you created.
3. Save your .py script in your code subfolder.

4. Run the .py code (and fix any errors if necessary). In your output folder, you should have two .tex files and two .eps files.

5. In GitHub desktop, commit these changes to the main branch. Then publish your repository to GitHub.

You now have saved a record of your code and your output to GitHub. Next, you will replicate the `main.tex` and `Homework_sample.pdf` file using Overleaf:

1. From the Overleaf main page, click new project and use the option to import from GitHub. You should be able to import your homework repository `phdee-2021-XX`. Pull any changes from GitHub to Overleaf if necessary.

2. In Overleaf, create a new .tex file and copy and paste the text from my `phdee-homework/sample_code/tex/main.tex` file in the `sample_code/tex` folder. Click the green button to compile it.

3. You will notice some errors or warnings in the paper icon next to the compile button. One of the errors is that you need to include a bibliography file to use with natbib. Create in your output folder a file called `sampleref.bib` and copy and paste the content in `phdee-homework/sample_code/tex/sampleref.bib` to create the file.

4. Recompile your main file and fix any errors or warnings until you have an error-free pdf. In Overleaf, use the menu button, click GitHub, and push your changes to your GitHub repository.

5. Finally, from Overleaf, download the .pdf file you have created, save it in your homework 1 folder, and push this change to GitHub.

Your `homework1` folder in your `phdee-XX` repository should now look exactly like my `sample_code` folder.

How do I turn in this homework?

To turn in this homework assignment, share your `phdee-XX` repository with me.