Some comments about Jupyter Notebook

Throughout the fall 2019 semester, we worked in R using RStudio and R Markdown.

Some advantages of RStudio include: The ability to see the code we wrote, the output from the code and data analysis, help menus, plots, variables, etc., all in one user-friendly environment.

There are other environments that we can use to work in R as well. A key one is called Jupyter Notebooks. Purdue maintains an environment for working with Jupyter Notebooks here:

http://notebook.scholar.rcac.purdue.edu/

You use your Purdue Career account to log in.

In this environment, you will see all of the files from your scholar account.

Using the Jupyter Notebooks:

If you have a project that you are already working on then you can just click on it to open it.

At the start, you do not have any project in progress. So look in the upper-right-hand corner of the page and click the "New" button and make anew notebook in "R".

The screen will refresh and you will have 1 prompt where you can type R code.

Some tips:

You type Control-Return (or Control-Enter) when to run a line of R code in a Jupyter Notebook.

You can run the lines of R code in any order you want. When you submit your project, please put them in the desired order.

When a line of R is running, the line number changes to a "*" character. When the line is finished running, it changes back to a line number again.

Here are some helpful shortcuts for Jupyter Notebooks, and you will surely find other tips/tricks on the web:

https://www.dataquest.io/blog/jupyter-notebook-tips-tricks-shortcuts/

http://johnlaudun.org/20131228-ipython-notebook-keyboard-shortcuts/

https://shortcutworld.com/Jupyter-Notebook/win/Jupyter-Notebook_Shortcuts

Remember (if you need a reminder) that you can always log into Scholar directly using a ThinLinc client or using: http://desktop.scholar.rcac.purdue.edu

Exporting your Jupyter Notebook as a PDF:

You have two options to export a Jupyter Notebook as a PDF on scholar:

Option 1

1. First you must save your notebook as a .ipynb file. Using notebook.scholar.rcac.purdue.edu, click directly to the right of the "jupyter" logo in the upper left hand side of your screen. You should be presented with a prompt to rename your notebook. Type in the desired name *without* the ".ipynb" extension -- this will be added automatically. Your notebook has now been saved.

2. Using desktop.scholar.rcac.purdue.edu, launch a terminal emulator by clicking on `Applications > Terminal Emulator` in the upper left hand side of your screen.

3. You should be presented with a terminal. Navigate to your home directory by running: `cd ~`.

4. Confirm the .ipynb file you saved in (1) is present in your home directory by running: `ls`.

5. To convert the listed .ipynb file, do the following:

   `/class/datamine/data/spring2020/to_pdf.sh myproject1.ipynb`

   or to convert multiple notebooks to pdf:

   `/class/datamine/data/spring2020/to_pdf.sh myproject1.ipynb myproject2.ipynb`

   the resulting pdf files will be located in your home directory.

Option 2

1. First you must save your notebook as a .ipynb file. Using notebook.scholar.rcac.purdue.edu, click directly to the right of the "jupyter" logo in the upper left hand side of your screen. You should be presented with a prompt to rename your notebook. Type in the desired name *without* the ".ipynb" extension -- this will be added automatically. Your notebook has now been saved.

2. Create and run a new "Code" cell with the following content:

```
1  !/class/datamine/data/spring2020/to_pdf.sh ~/myproject1.ipynb
   ~/myproject2.ipynb
```

Note that `~/myproject1.ipynb` and `~/myproject2.ipynb` should be the names of the notebooks you'd like to convert to pdf. The resulting pdf files will be located in your home directory.