The ABC's of Estimating Equations

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Prior to the workshop, please review the following directions (there are multiple pages). Completing the following software setup steps will help to ensure the workshop runs smoothly. If you encounter difficulties, please contact me at pzivich@unc.edu.

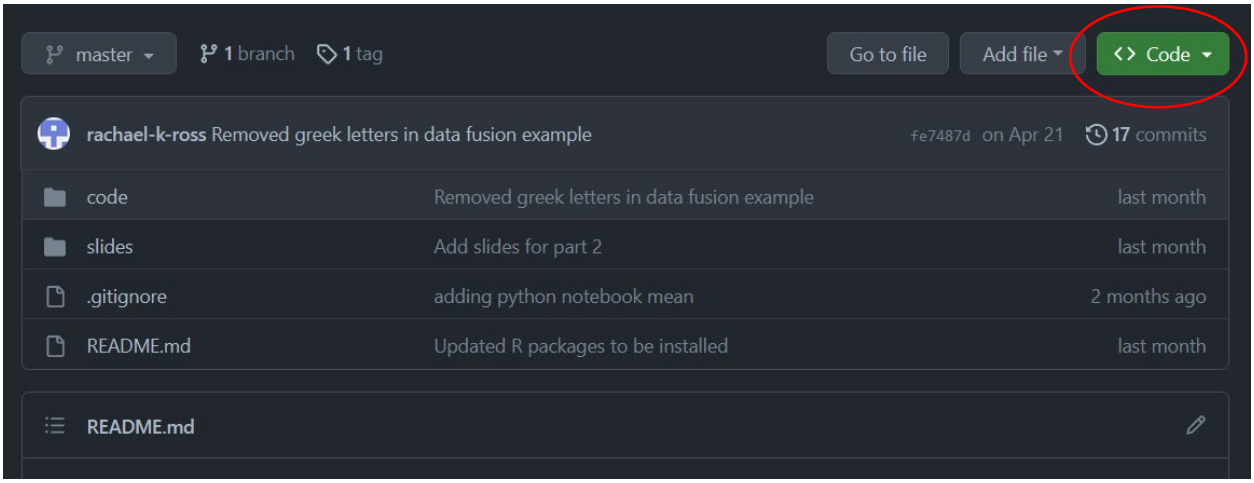
Before the workshop

Downloading files from GitHub

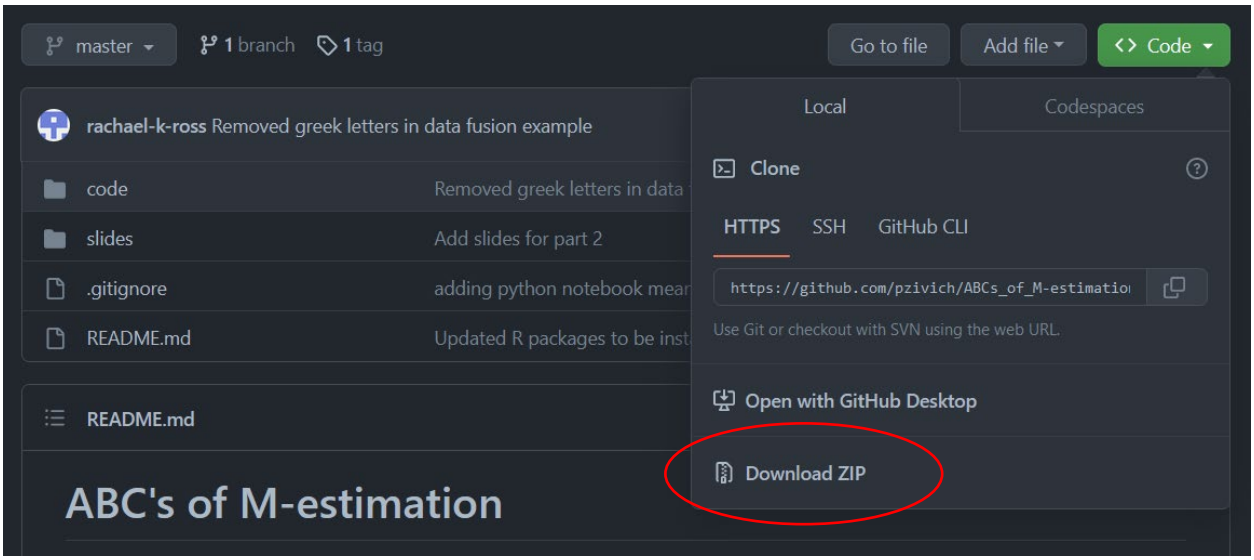
If you are unfamiliar with GitHub, please see the following directions. Otherwise, you can clone the following repository using your preferred installation of git.

1. Navigate to https://github.com/pzivich/ABCs_of_M-estimation

2. On the page, click the box labeled '<> Code'.



3. Click 'Download ZIP' to download all the files from GitHub as a compressed .zip folder.



4. Save the files locally to the computer you will be using during the workshop.

Testing the Code

To ensure your computer you will be using during the workshop is prepared, please follow the corresponding directions below for your software of choice (SAS, R, Python).

SAS

1. From the downloaded files in the previous step, open the `code/mean.sas` file with your installation of SAS.
2. Select 'Submit' to run the entire program.
3. Check the log. There should be no warnings or errors. The final part of the output in the Results Viewer should be the following:

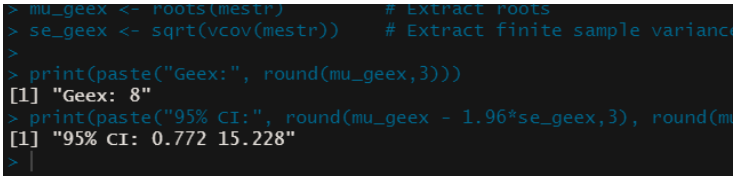
The SAS System

Obs	B	SANDWICH	SE	lcl	ucl
1	8	13.6	3.68782	0.77188	15.2281

R

For R, the following packages will need to be installed: `numDeriv`, `rootSolve`, `geex`. These can be installed using the `install.packages()` function. After installing these packages, complete the following steps:

1. From the downloaded files in the previous step, open the `code/mean.R` file with your installation of R or RStudio.
2. Run the entire program.
3. The Console should not output any errors. The final part of the output in the Console should be the following:



```
> mu_geex <- roots(mestr)          # Extract roots
> se_geex <- sqrt(vcov(mestr))     # Extract finite sample varianc
>
> print(paste("Geex:", round(mu_geex,3)))
[1] "Geex: 8"
> print(paste("95% CI:", round(mu_geex - 1.96*se_geex,3), round(m
[1] "95% CI: 0.772 15.228"
>
```

Python

For Python, the following packages will need to be installed: `NumPy`, `SciPy`, `pandas`, `delicatessen`. These can be installed using pip via

`> python -m pip install numpy scipy pandas delicatessen`.

After installing these packages, complete the following steps:

1. From the downloaded files in the previous step, open the `code/mean.py` file with your preferred IDE for Python or open `code/mean.ipynb` with Jupyter Notebooks.
2. Run the entire program.
3. The Console should not output any errors. The final part of the output should be the following:

```
Root-finder: 8.0
95% CI: [ 0.772 15.228]
Deli:    [8.]
95% CI:  [[ 0.772 15.228]]
```

On the Day of the Workshop

Bring the computer that has the preceding files downloaded locally and have been tested. During the workshop, we will run the `mean.*` and `applied_examples.*` files.

Slides are available in the `slides/` folder of the downloaded files from GitHub.

End.