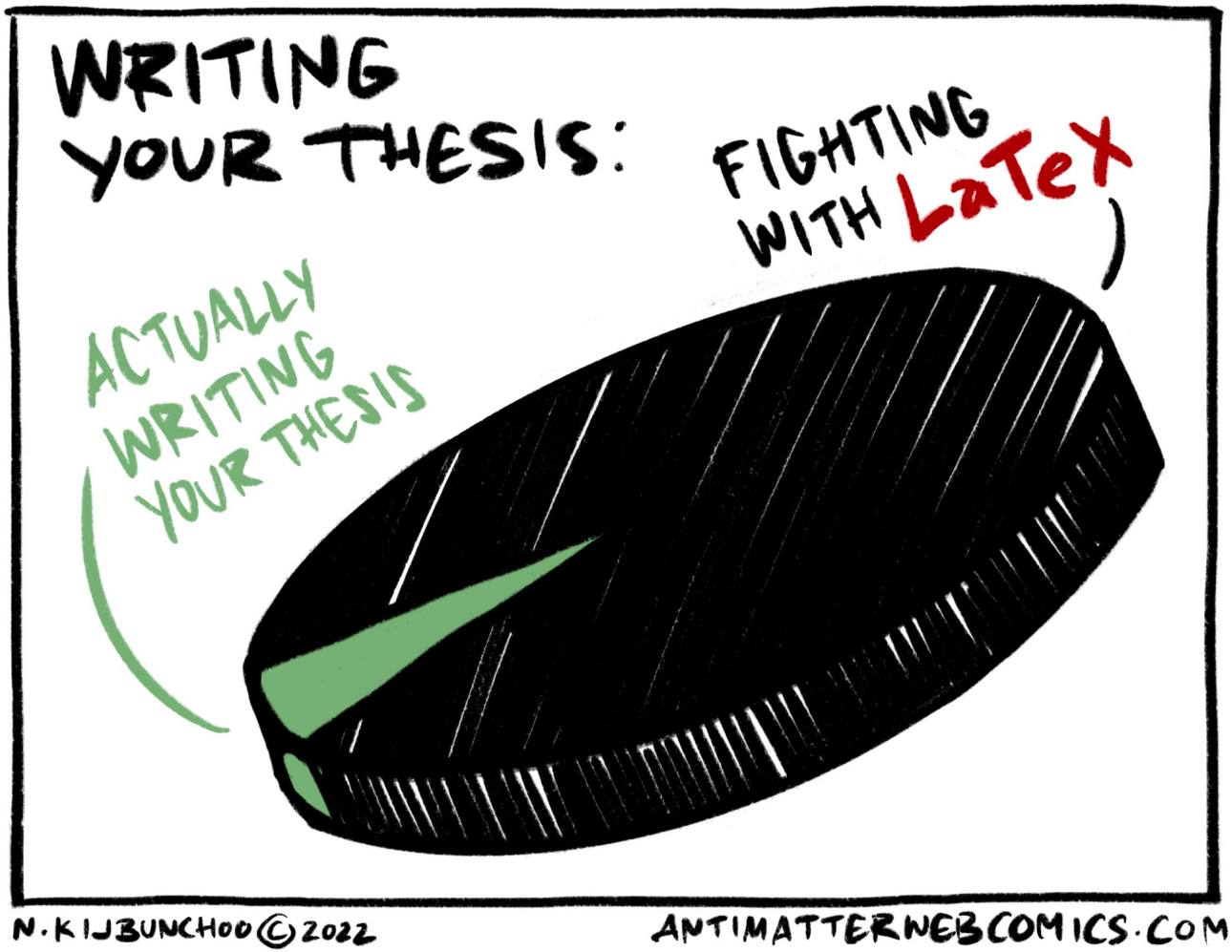
Session Six

Exporting Results to LaTeX, Markdown
Kellogg Research Support

Summer 2022

Northwestern | Kellogg

Automating Papers



Today we will Cover

- Discussion: Using LaTex vs. Markdown
- Generating Results within R, Python, Stata
- LaTex – Populating Results in a KLC LaTeX doc
- Markdown –
    1. Juypter Notebooks for Python
    2. ‘Knitting’ R Markdown Files
    3. Stata Markdown

Discussion: LaTeX vs. Markdown

LaTeX and Markdown Comparison

Markdown

```
---

title: Sample Problem Set
author: Your Name
date: July 2022

--- Hello world!
```

LaTeX

Preamble

```
\documentclass{article}
\usepackage{amsmath}
\usepackage{amssymb}
\usepackage{amsfonts}
```

```
\title{Sample Article}
\author{Your Name}
\date{July 2022}
```

Body

```
\begin{document}
\maketitle
Hello world!
\end{document}
```

Markdown

What is it?

Markdown is a text-to-HTML conversion tool. It allows you to write using a plain text format, then convert it to structurally valid HTML. A Markdown document could contain source code and LaTeX formulas.

Use

distraction-free focus-on-what-you-want-to-say writing.

LaTeX

What is it?

LaTeX or Tex/Markup is a high-quality typesetting system; it includes features designed for technical and scientific documentation.

Use

high-quality typesetting for articles, research papers, manuals, books, etc.

Discussion – Use Cases

When would you use LaTeX?

- Journal articles, working papers, class papers
- Beamer for your job talk presentation

When would you use Markdown?

- Class problem sets
- Exploratory work
- Teaching materials

Automating Results Generation in Code

Generating Results Files in Programs

What we'll Cover:

- Creating Descriptive Statistics Tables
- Formatting Regression Results
- Exporting Plots and Graphs

For Tables

- Python & R – stargazer package
- Python – estout and outreg2

Running LaTeX

Running LaTeX on KLC: TexLive

Open a Terminal Session in FastX.

To load packages, type:

```
module load texlive/2020
module load ghostscript
```

To create a pdf of the tex file, run:

```
pdflatex <file_name_here.tex>
pdflatex sample.tex
```

Using Markdown on KLC

Juypter Notebooks in Python

Open a GNOME Terminal Session in FastX.

To load packages, type:

```
module load python/anaconda3.6
module load chrome
```

To create and launch a conda environment, type:

```
conda create -n taxi_env python=3.6
source activate taxi_env
```

To install libraries, type:

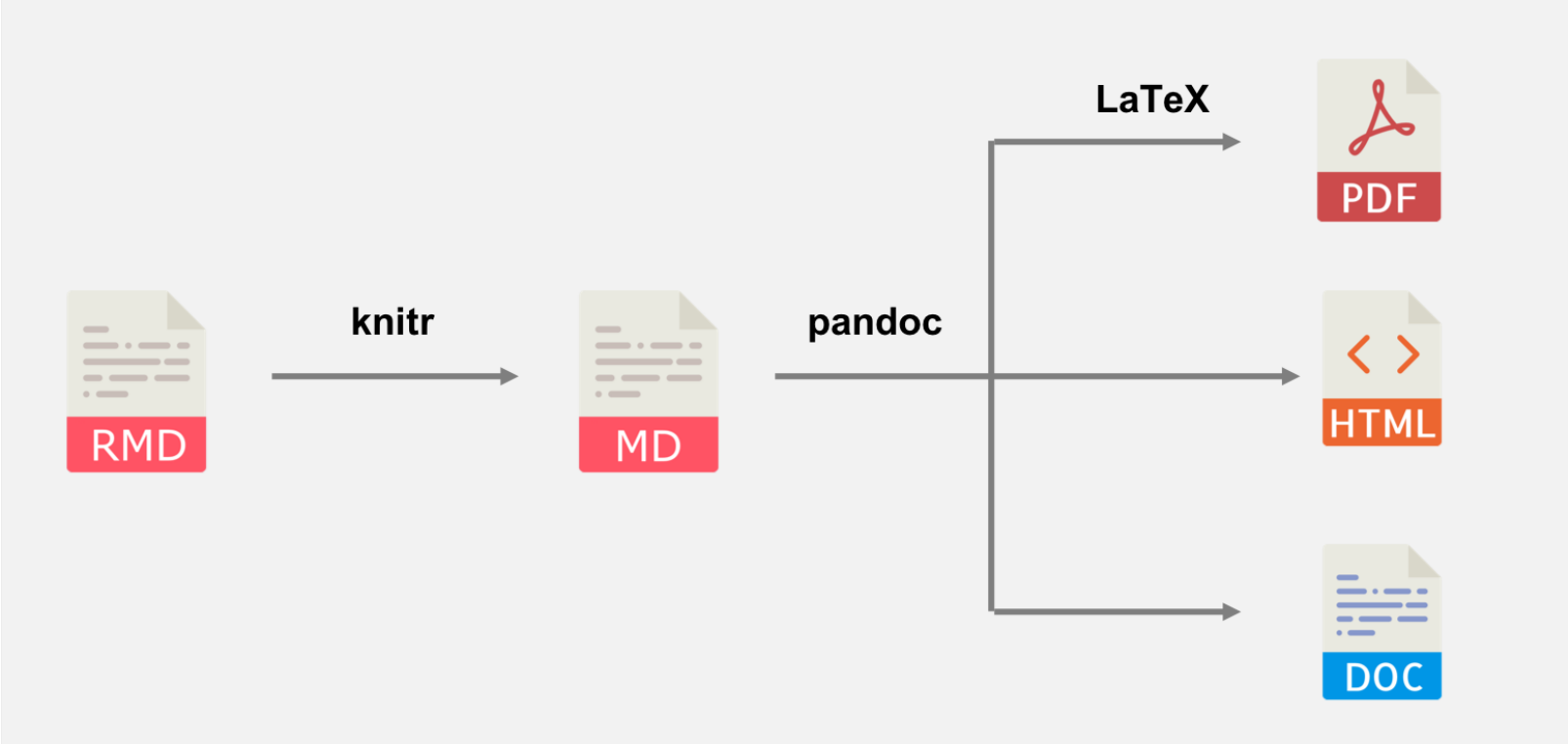
```
conda install -c conda-forge <library>
```

To launch a jupyter notebook, type:

```
jupyter notebook --browser=chrome
```

Access from a Quest Analytics Node: https://jupyter.questanalytics.northwestern.edu/hub/login

Knitting an R Markdown File



R Markdown within Rstudio

Open a GNOME Terminal Session in FastX.

To load packages and launch Rstudio, type:

```
module load texlive/2020
module load R/4.1.1
rstudio
```

Within R, install and load the following

```
install.packages('rmarkdown')
library(rmarkdown)
```

To generate a pdf file in R, “Knit to pdf” from the “Knit” dropdown.

R Markdown from the command line

Open a GNOME Terminal Session in FastX.

To load packages and launch Rstudio, type:

```
module load texlive/2020
module load R/4.1.1
```

To generate a pdf file from the command line:

```
Rscript -e
"rmarkdown::render('samplex.Rmd’,
params=list('myarg'))"
```

Access from a Quest Analytics Node: https://jupyter.questanalytics.northwestern.edu/hub/login

Creating a Stata Markdown File

Open a GNOME Terminal Session in FastX.

To load packages, type:

```
module load texlive/2020
module load pandoc/2.2.1
module load stata/17
xstata-mp
```

Within Stata, type the following

```
ssc install markstat
ssc install whereis
whereis pandoc /software/pandoc/2.2.1/bin/pandoc
whereis pdflatex /software/texlive/2020/bin/
    x86_64-linux/pdflatex
cd <directory>
markstat using <filename>, mathjax
```

Appendix

Appendix – LaTeX/Markdown Resources

Getting Started with Latex:
https://www.latex-project.org/get/#tex-distributions

Online Latex Editor:
https://www.tutorialspoint.com/online_latex_editor.php

Texlive on a Linux Server:
https://www.tug.org/texlive/
https://www.linuxfordevices.com/tutorials/ubuntu/install-tex-live-texmaker

R Markdown and Knitr
https://www.r-bloggers.com/2015/12/r-markdown-and-knitr-tutorial-part-1/

Python with Latex: https://github.com/gpoore/pythontex
https://www.geeksforgeeks.org/pylatex-module-in-python/?ref=lbp

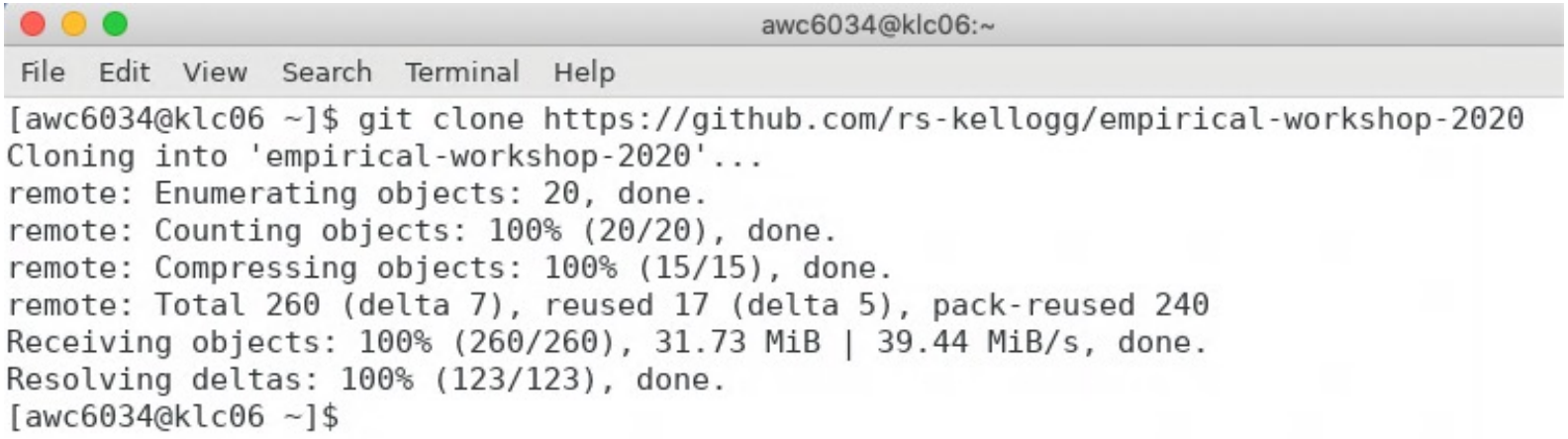
Stata Markdown
https://data.princeton.edu/stata/markdown

Appendix: Git Clone Workshop to KLC

Recall that we'll first copy the contents of this week's github lecture notes/materials to our KLC home directories.

1. Launch a Terminal window on KLC
2. Type the following into the command line:

```
git clone https://github.com/rs-kellogg/workshop_2022/
```



To update the contents of an existing cloned directory, navigate to the folder and type:

```
cd ~/workshop-2022
git pull
```