

# $\text{\LaTeX}$ Workshop

Therese Anders<sup>1</sup>

<sup>1</sup>PhD Candidate  
School of International Relations  
University of Southern California

7 February 2018

# Plan for the Workshop

- 1 Introduction. →
- 2 Why bother learning  $\text{\LaTeX}$ ? →
- 3 Challenges and downsides. →
- 4 Basic structure of a  $\text{\LaTeX}$  document and compiling. →
- 5 Bibliographies. →
- 6 Article-style document: Formatting, figures, tables, bibliographies, equations (accompanying template).

# Introduction

# What is $\text{\LaTeX}$ ?

$\text{\LaTeX}$  is a typesetting language that allows you to produce publication-ready documents.

# Goal for this Workshop

Give you a jump start into working with  $\text{\LaTeX}$ .

# Goal for this Workshop

Give you a jump start into working with  $\text{\LaTeX}$ .

## Key to learning $\text{\LaTeX}$

- Good template.
- Basic idea of the structure of  $\text{\LaTeX}$  documents.

# Goal for this Workshop

Give you a jump start into working with  $\text{\LaTeX}$ .

## Key to learning $\text{\LaTeX}$

- Good template.
- Basic idea of the structure of  $\text{\LaTeX}$  documents.
- Google should be your bff.

# Goal for this Workshop

Give you a jump start into working with  $\text{\LaTeX}$ .

## Key to learning $\text{\LaTeX}$

- Good template.
- Basic idea of the structure of  $\text{\LaTeX}$  documents.
- Google should be your bff.
- Willingness to suffer a bit in the beginning.



# Friendly Warning

If your dissertation is due in 2 weeks, do not start typesetting it in  $\text{\LaTeX}$  now!

# Why bother learning $\text{\LaTeX}$

# Just a few reasons why you should be using $\text{\LaTeX}$

- Free, open source.

# Just a few reasons why you should be using $\text{\LaTeX}$

- Free, open source.
- Beautiful typesetting.

# Just a few reasons why you should be using $\text{\LaTeX}$

- Free, open source.
- Beautiful typesetting.
- Inserting and updating tables/figures from R or Stata.

# Just a few reasons why you should be using $\text{\LaTeX}$

- Free, open source.
- Beautiful typesetting.
- Inserting and updating tables/figures from R or Stata.
- Inserting/updating bibliographies.

# Just a few reasons why you should be using $\text{\LaTeX}$

- Free, open source.
- Beautiful typesetting.
- Inserting and updating tables/figures from R or Stata.
- Inserting/updating bibliographies.
- Math typesetting and formal presentation (game trees, diagrams).

# $\text{\LaTeX}$ uses an advanced typesetting algorithm



Figure: Source <http://bit.ly/25VwZaG>.



# $\text{\LaTeX}$ —The quiz!

# The Quiz: $\text{\LaTeX}$ or Word?

The positioning of a specific armed non-state actor along the two dimensions might vary considerably across space and time. For example, certain cartels in Mexico might have a higher capacity and willingness to bend the rules of the game and project control into their areas of influence than others. Therefore, it should be noted that this theoretical approach is action-based and tied to a spatio-temporal unit, as opposed to specific actor identities. It is the nature of the predominant security challenge that a government faces in a specific spatio-temporal unit, rather than the identity of the violent non-state actor, that is thought to influence its welfare spending. Suppose for example, that rebel group  $g$  has some territorial control at time  $t$  in the subnational area  $i_1$ , but not in area  $i_2$ . Therefore, I expect to see group  $g$  conducting guerrilla-style attacks in area  $i_1$  and terrorist-style attacks in area  $i_2$ , both at time  $t$ . Consequently, in the next period  $t + 1$ , we should see higher levels of subnational welfare spending in area  $i_1$  than in area  $i_2$ , even though the governments of both areas face the same opponent  $g$ .

# The Quiz: $\text{\LaTeX}$ or Word?

The positioning of a specific armed non-state actor along the two dimensions might vary considerably across space and time. For example, certain cartels in Mexico might have a higher capacity and willingness to bend the rules of the game and project control into their areas of influence than others. Therefore, it should be noted that this theoretical approach is action-based and tied to a spatio-temporal unit, as opposed to specific actor identities. It is the nature of the predominant security challenge that a government faces in a specific spatio-temporal unit, rather than the identity of the violent non-state actor, that is thought to influence its welfare spending. Suppose for example, that rebel group  $g$  has some territorial control at time  $t$  in the subnational area  $i_1$ , but not in area  $i_2$ . Therefore, I expect to see group  $g$  conducting guerrilla-style attacks in area  $i_1$  and terrorist-style attacks in area  $i_2$ , both at time  $t$ . Consequently, in the next period  $t + 1$ , we should see higher levels of subnational welfare spending in area  $i_1$  than in area  $i_2$ , even though the governments of both areas face the same opponent  $g$ .

# The Quiz: $\text{\LaTeX}$ or Word?

## INTRODUCTORY STATISTICS LECTURE

### *Segment on Hypothesis Testing*

- Segment: three 50 minute class sessions (like IR 211 class).
- Segment after the midterm, i.e. second third of the class, when students are familiar with basic concepts such as sample, population, standard error, t-test, p-values, etc.
- Learning objective:
  - What is hypothesis testing and why is relevant?
  - How does it help us to understand statistical relationships?
  - How is it done (focus on one sample and two sample tests)?
  - What are some of the fallacies with regard to hypothesis testing?
- I assume that most students are PoliSci or IR majors.
- All mathematical examples for practicing hypothesis tests in class will be presented as cases that are either directly relevant to political science or IR, or present interesting real-world scenarios.

# The Quiz: $\text{\LaTeX}$ or Word?

## INTRODUCTORY STATISTICS LECTURE *Segment on Hypothesis Testing*

- Segment: three 50 minute class sessions (like IR 211 class).
- Segment after the midterm, i.e. second third of the class, when students are familiar with basic concepts such as sample, population, standard error, t-test, p-values, etc.
- Learning objective:
  - What is hypothesis testing and why is relevant?
  - How does it help us to understand statistical relationships?
  - How is it done (focus on one sample and two sample tests)?
  - What are some of the fallacies with regard to hypothesis testing?
- I assume that most students are PoliSci or IR majors.
- All mathematical examples for practicing hypothesis tests in class will be presented as cases that are either directly relevant to political science or IR, or present interesting real-world scenarios.

# The Quiz: $\text{\LaTeX}$ or Word?

<i>Dependent Variable:</i>					
Naval Tonnage Index					
	(1)	(2)	(3)	(4)	(5)
<i>Naval Tonnage Index</i> <sub><i>t,t-1</i></sub>		0.971*** (0.004)	0.970*** (0.004)	0.970*** (0.004)	0.971*** (0.004)
<i>Competition</i> <sub><i>t,t-1</i></sub>	2.247*** (0.077)	0.146*** (0.020)	0.126*** (0.024)	0.120*** (0.024)	0.147*** (0.019)
<i>Democracy</i> <sub><i>t,t-1</i></sub>			-0.002* (0.001)	-0.002** (0.001)	
<i>GDP</i> <sub><i>t,t-1</i></sub>				1.597*** (0.268)	1.617*** (0.260)
Observations	4,226	4,226	4,051	4,051	4,226
R <sup>2</sup>	0.169	0.955	0.956	0.956	0.956

*Note:*

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

**Figure:** Markowitz, J. and C. Fariss: Power, Proximity, and Democracy: Geopolitical Competition in the International System. In *Journal of Peace Research* (Forthcoming).

# The Quiz: $\text{\LaTeX}$ or Word?

	Welfare spending			Military spending	
	(1)	(2)	(3)	(4)	(5)
Dummy 25 battle deaths (low)	-0.077 (0.298)			0.195*** (0.075)	
Dummy 1000 battle deaths (low)		-0.472 (0.389)			
Insurgency			-0.769* (0.424)		0.215** (0.105)
ln GDP p.c.	-0.831*** (0.296)	-0.827*** (0.296)	-0.905*** (0.299)	0.684*** (0.217)	0.689*** (0.220)
Democracy dummy	2.191*** (0.375)	2.169*** (0.377)	2.171*** (0.376)	-0.364** (0.154)	-0.375** (0.154)
GDP Growth	-0.007 (0.007)	-0.008 (0.007)	-0.009 (0.007)	0.001 (0.002)	0.0003 (0.002)
N	3,902	3,902	3,902	3,784	3,784
Adjusted R <sup>2</sup>	0.041	0.042	0.043	0.062	0.061

\*p < .1; \*\*p < .05; \*\*\*p < .01. Two-way linear fixed effects with heteroskedasticity and serial correlation consistent covariance estimates are computed using the `p1m` function in R.

**Figure:** Anders, T. *The Relationship Between Violent Conflict and Welfare Spending Revisited* (unpublished manuscript).

# Comparing Word, InDesign, and $\text{\LaTeX}$

## Microsoft Word 2008

Call me Ishmael. Some years ago – never mind how long precisely – having little or no money in my purse, and nothing particular to interest me on shore, I thought I would sail about a little and see the watery part of the world. It is a way I have of driving off the spleen, and regulating the circulation. Whenever I find myself growing grim about the mouth; whenever it is a damp, drizzly November in my soul; whenever I find myself involuntarily pausing before coffin warehouses, and bringing up the rear of every funeral I meet; and especially whenever

## Adobe InDesign CS4

Call me Ishmael. Some years ago – never mind how long precisely – having little or no money in my purse, and nothing particular to interest me on shore, I thought I would sail about a little and see the watery part of the world. It is a way I have of driving off the spleen, and regulating the circulation. Whenever I find myself growing grim about the mouth; whenever it is a damp, drizzly November in my soul; whenever I find myself involuntarily pausing before coffin warehouses, and bringing up the rear of every funeral I meet; and especially whenever my hypos get

## pdf-LaTeX 3.1415926

Call me Ishmael. Some years ago – never mind how long precisely – having little or no money in my purse, and nothing particular to interest me on shore, I thought I would sail about a little and see the watery part of the world. It is a way I have of driving off the spleen, and regulating the circulation. Whenever I find myself growing grim about the mouth; whenever it is a damp, drizzly November in my soul; whenever I find myself involuntarily pausing before coffin warehouses, and bringing up the rear of every funeral I meet; and especially whenever my hypos

Figure: <http://www.zinktypografie.nl/comparison.pdf>.



# Comparing Word, InDesign, and $\text{\LaTeX}$

Hyphenation and inter-word spacing statistics			
	Word	InDesign	pdf- $\text{\LaTeX}$
Number of hyphenations	9	10	4
SD of IWS (pt)	2.26	1.94	1.42
Maximum IWS (pt)	14.4	13.2	9.0
Number of lines with IWS > 9 pt	5	2	0

SD: standard deviation; IWS: inter-word spacing

Figure: <http://www.zinktypografie.nl/comparison.pdf>.

Inter-word spacing is the spacing between words.  $\text{\LaTeX}$  uses an advanced algorithm to compute the optimal IWS for each document.

# WYSIWYG and WYSIWYM

what-you-see-is-what-you-get (WYSIWYG)

Content = presentation. Example: Word.

what-you-see-is-what-you-mean (WYSIWYM)

Content  $\neq$  presentation. Example:  $\text{\LaTeX}$ .

## Example for Separation of Content and Presentation

If your dissertation is due in 2 weeks, do not start  
typesetting it in  $\text{\LaTeX}$  now!

```
\begin{center}  
If your dissertation is due in 2 weeks,  
\Huge\underline{do not}} start typesetting it in {\LaTeX} now!  
\end{center}
```

# Pros and Cons: Separation of Content and Presentation

## Pros

- Reproducibility.
- Stability.
- Unambiguous.
- Once set up, no need to worry about formatting. In fact, you should focus on content over form.  $\text{\LaTeX}$  will do the rest the form for you.  $\implies$  Templates!

# Pros and Cons: Separation of Content and Presentation

## Pros

- Reproducibility.
- Stability.
- Unambiguous.
- Once set up, no need to worry about formatting. In fact, you should focus on content over form.  $\text{\LaTeX}$  will do the rest the form for you.  $\implies$  Templates!

## Cons

- No/few “buttons” to press—need to learn commands.
- Steep learning curve. Can be time intensive.

# Working Directory (WD)

- The WD is a specified path (think folder) on your machine.
- The program will look for and store all data in the WD.
- Unless otherwise specified,  $\text{\LaTeX}$  will use the folder where the main .tex file is stored as WD.
- Store all auxiliary data (graphs, tables, etc.) in the WD.

## Adding graphs to $\text{\LaTeX}$ files.

```
\begin{figure}[h!]  
\begin{center}  
\includegraphics[width = 2in]{latex_comic.jpg}  
\caption{Source \url{http://bit.ly/25VwZaG}.}  
\label{comic_fig}  
\end{center}  
\end{figure}
```



Figure: Source <http://bit.ly/25VwZaG>.

# Integration of tables is one of the main perks!

- R packages such as `stargazer` or `xtable` will output beautifully formatted (regression) tables as a `.tex` file.
- `estout` package for Stata.
- Save the `.tex` file directly to you WD, then import the file into your  $\text{\LaTeX}$  document.



## $\backslash$ input{} command

The following table (stargazer output) is imported by the following line:

```
 $\backslash$ input{tab_simple.tex}
```

Disclaimer: In reality, to import the table into the beamer class, I use a wrapper:

```
 $\backslash$ resizebox{\linewidth}{!}{ $\backslash$ input{tab_simple.tex}}.
```

% Table created by stargazer v.5.1 by Marek Hlavac, Harvard University. E-mail: hlavac at fas.harvard.edu  
% Date and time: Wed, Apr 13, 2016 - 12:31:07

[Home](#)
[About](#)
[Contact](#)
[Privacy Policy](#)
[Terms of Service](#)
[Feedback](#)

# stargazer output with $\text{\LaTeX}$ typesetting

	<i>Dependent variable:</i>			
		internet		life_exp
	(1)	(2)	(3)	(4)
polity	0.255*** (0.023)	0.084*** (0.020)		
pop		0.000 (0.000)		
gdppc		0.001*** (0.00002)		0.0005*** (0.00001)
life_exp			1.101*** (0.031)	
Constant	15.002*** (0.401)	5.955*** (0.408)	-60.212*** (2.098)	62.576*** (0.160)
Observations	3,126	3,003	3,376	4,111
R <sup>2</sup>	0.039	0.384	0.276	0.334
Adjusted R <sup>2</sup>	0.038	0.383	0.276	0.334
Residual Std. Error	22.391 (df = 3124)	17.953 (df = 2999)	18.534 (df = 3374)	8.625 (df = 4109)
F Statistic	125.913*** (df = 1; 3124)	622.987*** (df = 3; 2999)	1,285.932*** (df = 1; 3374)	2,063.299*** (df = 1; 4109)

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

# Fancier stargazer output

<i>Dependent variable:</i>				
	Internet Users		Life Expectancy	
	(1)	(2)	(3)	(4)
Polity Score	0.2553*** (0.0228)	0.0842*** (0.0202)		
Population		0.0000 (0.0000)		
GDP p.c.		0.0010*** (0.00002)		0.0005*** (0.00001)
Life Expectancy			1.1005*** (0.0307)	
Constant	15.0024*** (0.4005)	5.9550*** (0.4082)	-60.2123*** (2.0975)	62.5757*** (0.1602)
Observations	3,126	3,003	3,376	4,111
R <sup>2</sup>	0.0387	0.3839	0.2760	0.3343
Adjusted R <sup>2</sup>	0.0384	0.3833	0.2757	0.3341
Residual Std. Error	22.3914 (df = 3124)	17.9527 (df = 2999)	18.5340 (df = 3374)	8.6253 (df = 4109)

Note:

\*p<0.1; \*\*p<0.05; \*\*\*p<0.01

# Professional typesetting of math symbols

```
\begin{equation*}
\begin{split}
\frac{\partial EU_{ns_p}}{\partial s} &= A(v)f\gamma - S'(s) \leq 0 \\
\frac{\partial^2 EU_{ns_p}}{\partial s^2} &= -S''(s) < 0
\end{split}
\end{equation*}
```

$$\frac{\partial EU_{ns_p}}{\partial s} = A(v)f\gamma - S'(s) \leq 0$$
$$\frac{\partial^2 EU_{ns_p}}{\partial s^2} = -S''(s) < 0$$

# Professional typesetting of regression equations

```
\begin{equation*}  
\text{exp}_{i,t} = \beta_1\text{conflict}_{i,t-1} +  
\beta_2\text{coca}_{i,t-1} +  
\beta_3\text{conflict}_{i,t-1} \times \text{coca}_{i,t-1}  
+ c_i + \delta_t + \epsilon_{i,t}  
\end{equation*}
```

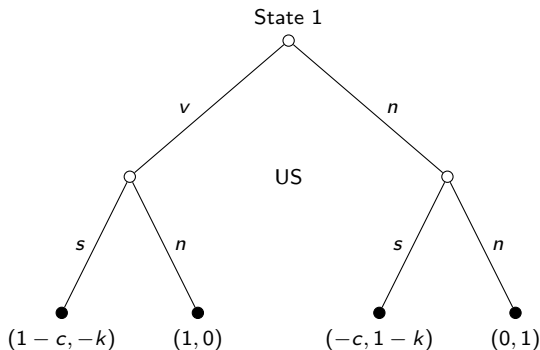
$$\text{exp}_{i,t} = \beta_1 \text{conflict}_{i,t-1} + \beta_2 \text{coca}_{i,t-1} + \beta_3 \text{conflict}_{i,t-1} \times \text{coca}_{i,t-1} + c_i + \delta_t + \epsilon_{i,t}$$

# Professional math typesetting

Basic list of math symbols in  $\text{\LaTeX}$

<http://web.ift.uib.no/Teori/KURS/WRK/TeX/symALL.html>

# Game trees with tikz package

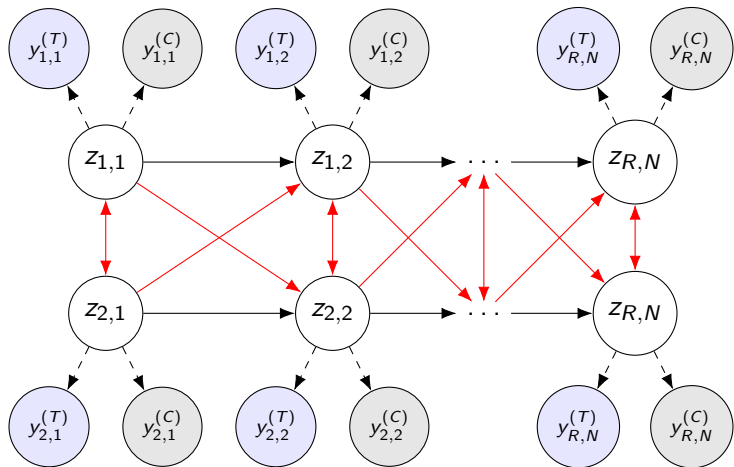




# Game trees with tikz package

```
\usetikzlibrary{calc}
\tikzset{
  solid node/.style={circle,draw,inner sep=1.5,fill=black},
  hollow node/.style={circle,draw,inner sep=1.5}
}
\begin{tikzpicture}[scale=1.2,font=\scriptsize]
  \tikzstyle{level 1}=[level distance=15mm,sibling distance=35mm]
  \tikzstyle{level 2}=[level distance=15mm,sibling distance=15mm]
  \node(0)[hollow node,label=above:{State 1}]{ }
  child{node(1)[hollow node]{ }
    child{node[solid node,label=below:{ $(1-c,-k)$ }]{} edge from parent node[left]{$s$}}
    child{node[solid node,label=below:{ $(1,0)$ }]{} edge from parent node[right]{$n$}}
    edge from parent node[left,xshift=-3]{$v$}
  }
  child{node(2)[hollow node]{ }
    child{node[solid node,label=below:{ $(-c,1-k)$ }]{} edge from parent node[left]{$s$}}
    child{node[solid node,label=below:{ $(0,1)$ }]{} edge from parent node[right]{$n$}}
    edge from parent node[right,xshift=3]{$n$}
  }
};
\node at ($(1)!.5!(2)$) {US};
\end{tikzpicture}
```

# Diagrams with tikz package



# Diagrams with tikz package

```
\tikzstyle{hv}=[circle,draw]
\tikzstyle{ovt}=[hv,fill=blue!10]
\tikzstyle{ovc}=[hv,fill=black!10]
\tikzstyle{a}=[-{\Latex[length=2mm,width=1.5mm]}]
\tikzstyle{ao}=[a,dashed]
\tikzstyle{across}=[a,red]
\tikzstyle{d}=[above]
\tikzstyle{both}=[{\Latex[length=2mm,width=1.5mm]}--{\Latex[length=2mm,width=1.5mm]},red]
\begin{tikzpicture}[every node/.style={scale=1}]
  \node (z11) at (-3,2) [hv] {\(z_{1,1}\)};
  \node (z12) at (0,2) [hv] {\(z_{1,2}\)};
  \node (z1n) at (4,2) [hv] {\(z_{R,N}\)};
  \node (y11t) at (-3.75,3.5) [ovt] {\scriptsize\(\gamma^{\{T\}}_{1,1}\)};
  \node (y11c) at (-2.25,3.5) [ovc] {\scriptsize\(\gamma^{\{C\}}_{1,1}\)};
  \node (y12t) at (-0.75,3.5) [ovt] {\scriptsize\(\gamma^{\{T\}}_{1,2}\)};
  \node (y12c) at (0.75,3.5) [ovc] {\scriptsize\(\gamma^{\{C\}}_{1,2}\)};
  \node (y1nt) at (3.25,3.5) [ovt] {\scriptsize\(\gamma^{\{T\}}_{R,N}\)};
  \node (y1nc) at (4.75,3.5) [ovc] {\scriptsize\(\gamma^{\{C\}}_{R,N}\)};
  \node (z1dots) at (2,2) {\ldots};
  \draw[a] (z11) -- (z12);
  \draw[a] (z12) -- (z1dots);
  \draw[a] (z1dots) -- (z1n);
  \draw[ao] (z11) -- (y11t);
  \draw[ao] (z11) -- (y11c);
  \draw[ao] (z12) -- (y12t);
  ...
\end{tikzpicture}
```

# Challenges

# Steep Learning Curve

## The key to learning $\text{\LaTeX}$

- Learning by doing
- Trial and error
- Google
- PATIENCE



Figure: Source <http://bit.ly/1VP56MS>.

# Co-Authoring

Reproducibility is one of the main advantages of  $\text{\LaTeX}$ . But co-authoring can be tricky with a basic  $\text{\LaTeX}$  distribution.

## Challenges toward collaboration

- Co-authors that don't know  $\text{\LaTeX}$ .
- Special packages, fonts, etc.
- Limited tracking of changes.
- Limited commenting abilities (except % or ).

## Tools for collaboration

Online platform <https://www.overleaf.com>

Limited free version, many templates.

`todonotes` package

Adds margin and in-text comments.

# Journal submission

- Some journals will not accept  $\text{\LaTeX}$  files for final manuscript submission.
- There are software tools for converting  $\text{\LaTeX}$  to Word, but it is a pain.
- Especially frustrating for: Tables, bibliographies, equations.  
Hence, all the reasons why you would want to use  $\text{\LaTeX}$  in the first place.



## Other Challenges

- Limited spell-checking options. Depends on editor.
- Debugging is part of the process.
  - Check for typos.
  - Read error message of compiler.
  - Google error message.
  - Trial and error.

# Some misconceptions

## No word counts

Many compilers don't have a build in function, but there is external programs (e.g. <http://app.uio.no/ifi/texcount/>) and ShareLaTeX also has a word count option.

# Some misconceptions

## No word counts

Many compilers don't have a build in function, but there is external programs (e.g. <http://app.uio.no/ifi/texcount/>) and ShareLaTeX also has a word count option.

## Tables in $\text{\LaTeX}$ suck

Programming tables from scratch is no fun! But, there are tools such as the `stargazer` and `estout` packages, plug-ins for Excel, and online tools (<http://www.tablesgenerator.com>).

# Structure and compiling

# Basic Structure

## Preamble

Document type, basic settings, packages. Not printed.

## Title section

Title, date, author information.

## Main Body

Document content including title wrapped by

```
\begin{document} ... \end{document}.
```

# Preamble

```
\documentclass[11pt,letterpaper,oneside](article) %Change basic font size and paper size here.
\usepackage[setspace, graphicx, fullpage, fancyhdr, amssymb, amsmath, epsfig, natbib, array, multirow, hyperref, tabularx, lscap,
booktabs, sidecap, subfig, longtable, enumitem]
```

```
\hypersetup{
bookmarks=false, % show bookmarks bar?
unicode=false, % non-Latin characters in Acrobat's bookmarks
pdftoolbar=true, % show Acrobat's toolbar?
pdfmenubar=true, % show Acrobat's menu?
pdfwindow=false, % window fit to page when opened
pdfstartview=(FitH), % fits the width of the page to the window
pdftitle={}, % title
pdfauthor={}, % author
pdfsubject=(Subject), % subject of the document
pdfcreator=(Creator), % creator of the document
pdfproducer=(Producer), % producer of the document
pdfkeywords=(keywords), % list of keywords
pdfnewwindow=true, % links in new window
colorlinks=true, % false: boxed links; true: colored links
linkcolor=blue, % color of internal links
linkbordercolor={0 0 0}, %border color
citebordercolor={0 0 0},
citecolor=blue, % color of links to bibliography
filecolor=black, % color of file links
uricolor=blue, % color of external links
}
```

Most important  
parameter is  
`documentclass{}`

- article
- resume
- beamer
- letter

Packages and  
`hypersetup` differ.

# Compiling a document

Workflow might differ for each editor. Example TeXShop:

- 1 Running  $\text{\LaTeX}$  first time will produce general text.
- 2 Running BibTeX to create bibliography (if necessary).
- 3 Running  $\text{\LaTeX}$  second time will product internal links, table of contents, and references.

Some editors like Overleaf will compile everything at once.

Shortcut for typesetting on MAC

⌘ + T

# $\LaTeX$ commands and special characters

All  $\LaTeX$  commands start with a `\`. Example: `\begin{}`

## Characters with special meaning

- `{` and `}`: Used in functions and for delineation.
- `%`: Comment (nothing that follows will be printed).
- `$`: In-line math.
- `&`: Alignment character (tables and math).

To use any of these symbols in text, we need to use an escape character. For example, to print `%` `&` `$`, we need to type:

`\% \& \$`



# Miscellaneous Notes

- Using `section{}`, `subsection{}`, and `subsubsection{}`,  $\text{\LaTeX}$  automatically creates a structure that pdf readers will understand.

## Miscellaneous Notes

- Using `section{}`, `subsection{}`, and `subsubsection{}`,  $\text{\LaTeX}$  automatically creates a structure that pdf readers will understand.
- `section*{}`, `subsection*{}`, and `subsubsection*{}` are the non-numbered equivalents.

## Miscellaneous Notes

- Using `section{}`, `subsection{}`, and `subsubsection{}`,  $\text{\LaTeX}$  automatically creates a structure that pdf readers will understand.
- `section*{}`, `subsection*{}`, and `subsubsection*{}` are the non-numbered equivalents.
- Size of headings will automatically be chosen by  $\text{\LaTeX}$ .

## Miscellaneous Notes

- Using `section{}`, `subsection{}`, and `subsubsection{}`,  $\text{\LaTeX}$  automatically creates a structure that pdf readers will understand.
- `section*{}`, `subsection*{}`, and `subsubsection*{}` are the non-numbered equivalents.
- Size of headings will automatically be chosen by  $\text{\LaTeX}$ .
- White space typically does not matter.

## Miscellaneous Notes

- Using `section{}`, `subsection{}`, and `subsubsection{}`,  $\text{\LaTeX}$  automatically creates a structure that pdf readers will understand.
- `section*{}`, `subsection*{}`, and `subsubsection*{}` are the non-numbered equivalents.
- Size of headings will automatically be chosen by  $\text{\LaTeX}$ .
- White space typically does not matter.
- Create internal links using `label{}` and `ref{}`.

## Miscellaneous Notes

- Using `section{}`, `subsection{}`, and `subsubsection{}`,  $\text{\LaTeX}$  automatically creates a structure that pdf readers will understand.
- `section*{}`, `subsection*{}`, and `subsubsection*{}` are the non-numbered equivalents.
- Size of headings will automatically be chosen by  $\text{\LaTeX}$ .
- White space typically does not matter.
- Create internal links using `label{}` and `ref{}`.
- Citations can automatically be included as internal links.

# Bibliographies

# Basic structure

Bibliographic data base, e.g. `sample_bib.bib`.

```
@article{fearonlaitin2003,  
  Author = {James D. Fearon and David D. Laitin},  
  Journal = {American Political Science Review},  
  Number = {1},  
  Pages = {75-90},  
  Title = {{Ethnicity, Insurgency, and Civil War}},  
  Volume = {97},  
  Year = {2003}}
```



# Basic structure

Bibliographic data base, e.g. `sample_bib.bib`.

```
@article{fearonlaitin2003,  
  Author = {James D. Fearon and David D. Laitin},  
  Journal = {American Political Science Review},  
  Number = {1},  
  Pages = {75-90},  
  Title = {{Ethnicity, Insurgency, and Civil War}},  
  Volume = {97},  
  Year = {2003}}
```

Building bibliography within to `.tex` document

```
\bibliographystyle{chicago}  
\bibliography{sample_bib.bib}
```

# Basic structure

Bibliographic data base, e.g. sample\_bib.bib.

```
@article{fearonlaitin2003,  
  Author = {James D. Fearon and David D. Laitin},  
  Journal = {American Political Science Review},  
  Number = {1},  
  Pages = {75-90},  
  Title = {{Ethnicity, Insurgency, and Civil War}},  
  Volume = {97},  
  Year = {2003}}
```

Building bibliography within to .tex document

```
\bibliographystyle{chicago}  
\bibliography{sample_bib.bib}
```

Citations

```
\citep{fearonlaitin2003}
```

# Notes on bibliographies

- Use a citation manager to create/manage .bib file.

# Notes on bibliographies

- Use a citation manager to create/manage .bib file.
  - Personally use BibDesk, but there are many others.

# Notes on bibliographies

- Use a citation manager to create/manage .bib file.
  - Personally use BibDesk, but there are many others.
  - Bibliographic data, notes, PDFs, etc, in one place.

# Notes on bibliographies

- Use a citation manager to create/manage .bib file.
  - Personally use BibDesk, but there are many others.
  - Bibliographic data, notes, PDFs, etc, in one place.
  - Use keywords or tags for organization.

# Notes on bibliographies

- Use a citation manager to create/manage .bib file.
  - Personally use BibDesk, but there are many others.
  - Bibliographic data, notes, PDFs, etc, in one place.
  - Use keywords or tags for organization.
  - Have one master .bib file and reference it in each .tex document.

# Notes on bibliographies

- Use a citation manager to create/manage .bib file.
  - Personally use BibDesk, but there are many others.
  - Bibliographic data, notes, PDFs, etc, in one place.
  - Use keywords or tags for organization.
  - Have one master .bib file and reference it in each .tex document.
- Overleaf offers integration with Zotero and Mendeley.



# Notes on bibliographies

- Use a citation manager to create/manage .bib file.
  - Personally use BibDesk, but there are many others.
  - Bibliographic data, notes, PDFs, etc, in one place.
  - Use keywords or tags for organization.
  - Have one master .bib file and reference it in each .tex document.
- Overleaf offers integration with Zotero and Mendeley.
- Easy switching between citation styles.

## Some aspects we did not cover today

- Special document types such as `beamer` for presentations, letters, and resumes.

## Some aspects we did not cover today

- Special document types such as `beamer` for presentations, letters, and resumes.
- XeTeX and XeLaTeX (special engines).

## Some aspects we did not cover today

- Special document types such as `beamer` for presentations, letters, and resumes.
- XeTeX and XeLaTeX (special engines).
- Style files (think: templates for `.ppt`).

## Some aspects we did not cover today

- Special document types such as `beamer` for presentations, letters, and resumes.
- XeTeX and XeLaTeX (special engines).
- Style files (think: templates for `.ppt`).
- Technical background for  $\text{\LaTeX}$  and  $\text{\TeX}$  programming language.

## Moving on...

Any questions before we move on to part II?

# $\text{\LaTeX}$ Lingo

## Distribution

Collection of  $\text{\TeX}$ -related software. Examples: MiKTeX, TeX Live.

## Editor

Creation of documents. Examples: TeXworks, TeXShop.

## Format

Different  $\text{\TeX}$ -based languages. Examples:  $\text{\LaTeX}$ , plain  $\text{\TeX}$ .

## Packages

Add ons to basic systems. Examples graphicx, natbib.