

# Python Cont'd & L<sup>A</sup>T<sub>E</sub>X

CIS 600, Spring 2018



January 25, 2018

# A Typesetting System

- ▶  $\text{\LaTeX}$  is a *typesetting* system, not a *word processor*.

# A Typesetting System

- ▶  $\text{\LaTeX}$  is a *typesetting* system, not a *word processor*.
- ▶ You provide the *content*, and  $\text{\LaTeX}$  handles the *design*

# A Typesetting System

- ▶  $\text{\LaTeX}$  is a *typesetting* system, not a *word processor*.
- ▶ You provide the *content*, and  $\text{\LaTeX}$  handles the *design*
- ▶ It is a programming language in its own right.

# A Typesetting System

- ▶  $\text{\LaTeX}$  is a *typesetting* system, not a *word processor*.
- ▶ You provide the *content*, and  $\text{\LaTeX}$  handles the *design*
- ▶ It is a programming language in its own right.
- ▶ As such, it has *packages* or *libraries* and people are actively developing it.

# A Typesetting System

- ▶  $\text{\LaTeX}$  is a *typesetting* system, not a *word processor*.
- ▶ You provide the *content*, and  $\text{\LaTeX}$  handles the *design*
- ▶ It is a programming language in its own right.
- ▶ As such, it has *packages* or *libraries* and people are actively developing it.
- ▶ Supports embedding of content produced elsewhere...

# A Typesetting System

- ▶  $\text{\LaTeX}$  is a *typesetting* system, not a *word processor*.
- ▶ You provide the *content*, and  $\text{\LaTeX}$  handles the *design*
- ▶ It is a programming language in its own right.
- ▶ As such, it has *packages* or *libraries* and people are actively developing it.
- ▶ Supports embedding of content produced elsewhere...
- ▶ Many packages exist for creating diagrams and images in the  $\text{\LaTeX}$  source itself.

# How to Learn L<sup>A</sup>T<sub>E</sub>X

- ▶ Find a document with its source...



# How to Learn $\text{\LaTeX}$

- ▶ Find a document with its source...
- ▶ change things, compile and observe the results.

# How to Learn $\text{\LaTeX}$

- ▶ Find a document with its source...
- ▶ change things, compile and observe the results.
- ▶ Find a paper with a diagram you like...

# How to Learn $\text{\LaTeX}$

- ▶ Find a document with its source...
- ▶ change things, compile and observe the results.
- ▶ Find a paper with a diagram you like...
- ▶ ask its author(s) for the source.

# How to Learn L<sup>A</sup>T<sub>E</sub>X

- ▶ Find a document with its source...
- ▶ change things, compile and observe the results.
- ▶ Find a paper with a diagram you like...
- ▶ ask its author(s) for the source.
- ▶ Read the Internet.

# How to Learn $\text{\LaTeX}$

- ▶ Find a document with its source...
- ▶ change things, compile and observe the results.
- ▶ Find a paper with a diagram you like...
- ▶ ask its author(s) for the source.
- ▶ Read the Internet.
- ▶ Read the documentation.

# How to Learn L<sup>A</sup>T<sub>E</sub>X

- ▶ Find a document with its source...
- ▶ change things, compile and observe the results.
- ▶ Find a paper with a diagram you like...
- ▶ ask its author(s) for the source.
- ▶ Read the Internet.
- ▶ Read the documentation.
- ▶ Read the error messages.

# Source File - Three Basic Parts

- ▶ Preamble, where packages are loaded

# Source File - Three Basic Parts

- ▶ Preamble, where packages are loaded
- ▶ Declarations, where you define special commands



# Source File - Three Basic Parts

- ▶ Preamble, where packages are loaded
- ▶ Declarations, where you define special commands
- ▶ The 'meat' of your document

# Source File - Three Basic Parts

- ▶ Preamble, where packages are loaded
- ▶ Declarations, where you define special commands
- ▶ The 'meat' of your document
- ▶ You can also add, for instance, a bibliography (handled by BibTeX).

- ▶ Include packages you are going to use (or worry you cannot discard)

# Preamble

- ▶ Include packages you are going to use (or worry you cannot discard)
- ▶ Define the sort of document you are making - book, article, slides, poster?

- ▶ The user can define a special sequence for use in the document.

# Definitions

- ▶ The user can define a special sequence for use in the document.
- ▶ A special character or environment

# Definitions

- ▶ The user can define a special sequence for use in the document.
- ▶ A special character or environment
- ▶ Generally, shorthand for a piece of code you want to reuse (like a function or class)

- ▶ Where your content goes



- ▶ Where your content goes
- ▶ Divide it into chapters, sections, propositions, etc.

- ▶ Where your content goes
- ▶ Divide it into chapters, sections, propositions, etc.
- ▶ Defined by an *environment* - the *document* environment.

- ▶ Where your content goes
- ▶ Divide it into chapters, sections, propositions, etc.
- ▶ Defined by an *environment* - the *document* environment.
- ▶ Contains other environments, e.g. *frame*, *equation* or *matrix*

- ▶ Where your content goes
- ▶ Divide it into chapters, sections, propositions, etc.
- ▶ Defined by an *environment* - the *document* environment.
- ▶ Contains other environments, e.g. *frame*, *equation* or *matrix*
- ▶ Can reference other files for embedding or stitching together.

# How to Produce a Document

- ▶ Compile your source.

# How to Produce a Document

- ▶ Compile your source.
- ▶ There are multiple stages, particularly if you include a bibliography

# How to Produce a Document

- ▶ Compile your source.
- ▶ There are multiple stages, particularly if you include a bibliography
- ▶ Use a popular IDE or “pdflatex” to output a PDF document...

# How to Produce a Document

- ▶ Compile your source.
- ▶ There are multiple stages, particularly if you include a bibliography
- ▶ Use a popular IDE or “pdf<sub>l</sub>atex” to output a PDF document...
- ▶ ...together with auxiliary and log files.



# How to Produce a Document

- ▶ Compile your source.
- ▶ There are multiple stages, particularly if you include a bibliography
- ▶ Use a popular IDE or “pdflatex” to output a PDF document...
- ▶ ...together with auxiliary and log files.
- ▶ Can also produce dvi or ps files