

L^AT_EX for Linguists

Jonathan Havenhill

Graduate Linguistics Student Association
Research Tool Workshop Series
Georgetown University
jeh241@georgetown.edu

October 8, 2014



- 1 Introduction
 - What is L^AT_EX?
 - The basics

- 2 Formatting
 - Fonts
 - Margins

- 3 Lists, tables, pictures, etc.
 - Lists
 - Graphics
 - References
 - Tables
 - Citations

- 4 Linguistics
 - tipa
 - gb4e
 - qtree
 - knitr

- 5 Resources

Files for today

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics
tipa
gb4e
qtree
knitr

Resources

- You should download the following files:
- `github.com/jhavenhill/latex-for-linguists`

Files for today

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- You should download the following files:
- github.com/jhavenhill/latex-for-linguists
- If you don't have L^AT_EX installed, you should download it:
 - MikTeX for Windows
 - MacTeX for Mac
 - Or, sign up for a free account at [writelatex.com](https://www.writelatex.com)

Some basic information

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- First, how do you pronounce L^AT_EX?
 - Usually [leɪtɛk] or [lɑːtɛk]

Some basic information

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- First, how do you pronounce L^AT_EX?
 - Usually [leɪtɛk] or [lɑːtɛk]
- It's a typesetting system, not a word processor

Some basic information

L^AT_EX for Linguists

Jonathan Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables, pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- First, how do you pronounce L^AT_EX?
 - Usually [leɪtɛk] or [lɑːtɛk]
- It's a typesetting system, not a word processor
- L^AT_EX documents are written with markup code, which is then interpreted and compiled by the T_EX system

Some basic information

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- First, how do you pronounce L^AT_EX?
 - Usually [leɪtɛk] or [lɑːtɛk]
- It's a typesetting system, not a word processor
- L^AT_EX documents are written with markup code, which is then interpreted and compiled by the T_EX system
- It has a learning curve, but there are a number of advantages, which you will hopefully see. . .

The structure of a \LaTeX document

\LaTeX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is \LaTeX ?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- Every document must contain the following lines:

```
\documentclass{...}
```

```
...
```

```
\begin{document}
```

```
...
```

```
\end{document}
```

Let's start with a basic document

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.
Lists
Graphics
References
Tables
Citations

Linguistics
tipa
gb4e
qtree
knitr

Resources

```
\documentclass{article}
```

```
\begin{document}
```

```
Hello world!
```

```
\end{document}
```

\documentclass{}

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- The document classes you are most likely to use are:
 - `article` (for articles)
 - `beamer` (for slideshows like this)
 - `res` (for résumés and CVs)

\documentclass{}

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- The document classes you are most likely to use are:
 - `article` (for articles)
 - `beamer` (for slideshows like this)
 - `res` (for résumés and CVs)
- The `\documentclass` command can have options, which are specified as such:

```
\documentclass[10pt,a4paper,landscape]{article}
```

The preamble

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- The preamble comes between ‘documentclass{ }’ and ‘begin{document}’

The preamble

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- The preamble comes between ‘documentclass{ }’ and ‘begin{document}’
- Here, you list the packages you will be using, e.g.:

```
\documentclass{article}
```

```
\usepackage{covington}
```

```
\usepackage{qtree}
```

```
\usepackage{tipa}
```

```
\begin{document}
```

```
...
```

The preamble

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- The preamble comes between ‘documentclass{ }’ and ‘begin{document}’
- Here, you list the packages you will be using, e.g.:

```
\documentclass{article}
```

```
\usepackage{covington}
```

```
\usepackage{qtree}
```

```
\usepackage{tipa}
```

```
\begin{document}
```

```
...
```

- You can also define new commands

Titles

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- A set of commands are available for creating titles and abstracts:

```
\title{...}
```

```
\author{...}
```

```
\date{...}
```


Titles

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- A set of commands are available for creating titles and abstracts:

```
\title{...}  
\author{...}  
\date{...}
```

- These are inserted into the document with the `\maketitle` command

Titles

LaTeX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is LaTeX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Let's add a title to our document:

```
\begin{document}
\title{A sample \LaTeX document}
\author{Your name here}
\date{\today}
\maketitle
Hello world!
```

Titles

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- And an abstract:

```
\maketitle
```

```
\begin{abstract}
```

```
Lorem ipsum dolor sit amet...
```

```
\end{abstract}
```

```
Hello world!
```

Some basic formatting

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

■ `\section{}` and `\subsection{}`

Some basic formatting

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- `\section{}` and `\subsection{}`
- `\textit{}`, `\textbf{}`, `\underline{}`, `\texttt{}`, and `\textsc{}`

Some basic formatting

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- `\section{}` and `\subsection{}`
- `\textit{}`, `\textbf{}`, `\underline{}`, `\texttt{}`, and `\textsc{}`
- subscript ($T_{\text{def}}P$) and superscript ($a^2 + b^2 = c^2$):
`T$_\text{def}$P`
`a2 + b2 = c2`

Changing the font

LaTeX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is LaTeX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- The LaTeXfont is called Computer Modern

Changing the font

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- The L^AT_EXfont is called Computer Modern
- Times New Roman: `\usepackage{times}`
 - This will set the entire document to Times New Roman

Changing the font

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- The L^AT_EXfont is called Computer Modern
- Times New Roman: `\usepackage{times}`
 - This will set the entire document to Times New Roman
- Font size can be specified with a `\documentclass` option, e.g., `[10pt]`, `[11pt]`, `[12pt]`
 - This will set the entire document to that font size

Margins and spacing

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- The default margins are designed for readability, but you may require 1 inch margins.
- Margins can be set using the geometry package:

```
\usepackage[margin=1.0in]{geometry}
```

Margins and spacing

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- The default margins are designed for readability, but you may require 1 inch margins.

- Margins can be set using the `geometry` package:

```
\usepackage[margin=1.0in]{geometry}
```

- Line spacing can be set with the `setspace` package:

```
\usepackage{setspace}
```

```
%\singlespacing
```

```
\onehalfspacing
```

```
%\doublespacing
```

Miscellaneous formatting issues

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Footnotes can be added using the footnote command:
`\footnote{Lorem ipsum dolor sit amet...}`

Miscellaneous formatting issues

LaTeX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is LaTeX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Footnotes can be added using the footnote command:
`\footnote{Lorem ipsum dolor sit amet...}`
- Quirks of LaTeX:
 - `# $ % ^ & _ { } ~ \` are reserved characters—you must use a backslash in order to type them, e.g. `\&`
 - LaTeX differentiates left and right quotes: `'` and `"` are right quotes, while left quotes are typed using the `'` key (tilde key)

Miscellaneous formatting issues

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Footnotes can be added using the footnote command:
`\footnote{Lorem ipsum dolor sit amet...}`
- Quirks of L^AT_EX:
 - `# $ % ^ & _ { } ~ \` are reserved characters—you must use a backslash in order to type them, e.g. `\&`
 - LaTeX differentiates left and right quotes: `'` and `"` are right quotes, while left quotes are typed using the `'` key (tilde key)
- Accented characters are typed with special codes, e.g.,
`\=o = ō`, `\o = ø`, `\'e = é`

Miscellaneous formatting issues

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Footnotes can be added using the footnote command:

```
\footnote{Lorem ipsum dolor sit amet...}
```

- Quirks of L^AT_EX:

- # \$ % ^ & _ { } ~ \ are reserved characters—you must use a backslash in order to type them, e.g. \&

- LaTeX differentiates left and right quotes: ' and " are right quotes, while left quotes are typed using the ' key (tilde key)

- Accented characters are typed with special codes, e.g.,
 $\backslash o = \bar{o}$, $\backslash o = \varnothing$, $\backslash 'e = \acute{e}$

- Comprehensive list of symbols:

<http://mirrors.ibiblio.org/CTAN/info/symbols/comprehensive/symbols-a4.pdf>

Lists and bullets

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- Numbered lists are introduced and ended with the `enumerate` environment:

```
\begin{enumerate}  
  \item{...}  
\end{enumerate}
```


Lists and bullets

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- Numbered lists are introduced and ended with the `enumerate` environment:

```
\begin{enumerate}  
  \item{...}  
\end{enumerate}
```

- `\item{}` encloses each item

Lists and bullets

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- Numbered lists are introduced and ended with the `enumerate` environment:

```
\begin{enumerate}  
  \item{...}  
\end{enumerate}
```

- `\item{}` encloses each item
- Bulleted lists are the same, except they use the `itemize` environment.

Lists and bullets

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- Numbered lists are introduced and ended with the `enumerate` environment:

```
\begin{enumerate}  
  \item{...}  
\end{enumerate}
```

- `\item{}` encloses each item
- Bulleted lists are the same, except they use the `itemize` environment.
- Numbered and bulleted lists can be embedded within one another.

Lists and bullets

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists

Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Which numbering system is used can be chosen with the `enumerate` package:

```
\usepackage{enumerate}
```

```
...
```

```
\begin{enumerate}[I.]
```

```
  \item{...}
```

```
\end{enumerate}
```

Lists and bullets

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists

Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Which numbering system is used can be chosen with the `enumerate` package:

```
\usepackage{enumerate}
```

```
...
```

```
\begin{enumerate}[I.]
```

```
  \item{...}
```

```
\end{enumerate}
```

- Or, items can be given individual bullet symbols:

```
\usepackage{enumerate}
```

```
...
```

```
\begin{itemize}
```

```
  \item[-]{...}
```

```
  \item[+]{...}
```

```
\end{itemize}
```

Lists and bullets

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- `\setcounter{enumi}{4}` can be used to set the counter for numbered lists:

```
\usepackage{enumerate}
```

```
...
```

```
\begin{enumerate}
```

```
    \setcounter{enumi}{4}
```

```
    \item{The fifth item}
```

```
\end{enumerate}
```

Lists and bullets

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists

Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- `\setcounter{enumi}{4}` can be used to set the counter for numbered lists:

```
\usepackage{enumerate}
```

```
...
```

```
\begin{enumerate}
```

```
    \setcounter{enumi}{4}
```

```
    \item{The fifth item}
```

```
\end{enumerate}
```

- There are separate counters for each level of embedding:
`enumi`, `enumii`, `enumiii`, `enumiv`

Lists and bullets

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists

Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- `\setcounter{enumi}{4}` can be used to set the counter for numbered lists:

```
\usepackage{enumerate}
```

```
...
```

```
\begin{enumerate}
```

```
    \setcounter{enumi}{4}
```

```
    \item{The fifth item}
```

```
\end{enumerate}
```

- There are separate counters for each level of embedding:
`enumi`, `enumii`, `enumiii`, `enumiv`
- Additional counters operate for sections, tables, pages, etc.

Graphics

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- The `graphicx` package is used for inserting pictures

```
\usepackage{graphicx}
```

```
...
```

```
\begin{figure}[h]
```

```
\includegraphics{LabovGraph.pdf}
```

```
\end{figure}
```

Graphics

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- The `graphicx` package is used for inserting pictures

```
\usepackage{graphicx}
```

```
...
```

```
\begin{figure}[h]
```

```
\includegraphics{LabovGraph.pdf}
```

```
\end{figure}
```

- Graphic width can be controlled with `[width=...]` option.
 - It can be an absolute value (4in) or a relative value (`.95\textwidth`)

Graphics options

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Some more graphics options:

```
\usepackage{graphicx}
```

```
...
```

```
\begin{figure}[H]
```

```
    \centering
```

```
    \includegraphics[width=...]{VowelSpace.png}
```

```
    \caption{...}
```

```
    \label{...}
```

```
\end{figure}
```

Graphics options

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics

References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Some more graphics options:

```
\usepackage{graphicx}
```

```
...
```

```
\begin{figure}[H]
```

```
\centering
```

```
\includegraphics[width=...]{VowelSpace.png}
```

```
\caption{...}
```

```
\label{...}
```

```
\end{figure}
```

- H requires the package `float` and inserts a graphic in that exact spot—`h` will only attempt to put a graphic in that spot. `!htbp` allows a figure to be placed here *h*, at the top *t*, at the bottom *b*, or on a float page *p*.

Cross references

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics

References

Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- `\label{...}` is used to label objects for cross-reference.

Cross references

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics

References

Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- `\label{...}` is used to label objects for cross-reference.
- These objects can then be referred to with the `\ref{...}` command.

Cross references

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics

References

Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- `\label{...}` is used to label objects for cross-reference.
- These objects can then be referred to with the `\ref{...}` command.
- You can label graphics, tables, sections, pages, etc.

Tables

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Tables are enclosed in the `tabular` environment.

```
\begin{tabular}{c|c|c}  
1 & 2 & 3\\  
\end{tabular}
```


Tables

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Tables are enclosed in the `tabular` environment.

```
\begin{tabular}{c|c|c}
```

```
1 & 2 & 3\\
```

```
\end{tabular}
```

- `&` separates cells and `\\` ends the row.

Tables

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Tables are enclosed in the `tabular` environment.

```
\begin{tabular}{c|c|c}
```

```
1 & 2 & 3\\
```

```
\end{tabular}
```

- `&` separates cells and `\\` ends the row.
- `{c|l|r}` controls the alignment of the text in each column.

Tables

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Tables are enclosed in the `tabular` environment.

```
\begin{tabular}{c|c|c}
```

```
1 & 2 & 3\\
```

```
\end{tabular}
```

- `&` separates cells and `\\` ends the row.
- `{c|l|r}` controls the alignment of the text in each column.
- Horizontal dividers are marked with `|` and horizontal dividers can be created with `line` between rows.

Tables

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Tables can be embedded in the `table` environment.

```
\begin{table}  
  \caption{...}  
  \label{table:...}  
  \begin{tabular}{c|c|c}  
    ...  
  \end{tabular}  
\end{table}
```

Tables

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Tables can be embedded in the `table` environment.

```
\begin{table}
  \caption{...}
  \label{table:...}
  \begin{tabular}{c|c|c}
    ...
  \end{tabular}
\end{table}
```

- This allows you to add captions/titles and references.

natbib

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- `natbib` is a package for creating bibliographies and in-text citations.

natbib

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- natbib is a package for creating bibliographies and in-text citations.
- It (and the built-in) citation system use a .bib file, which stores your bibliography

natbib

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- `natbib` is a package for creating bibliographies and in-text citations.
- It (and the built-in) citation system use a `.bib` file, which stores your bibliography
- Programs like Mendeley can manage your `.bib` file automatically

natbib

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics
tipa
gb4e
qtree
knitr

Resources

- natbib is a package for creating bibliographies and in-text citations.
- It (and the built-in) citation system use a .bib file, which stores your bibliography
- Programs like Mendeley can manage your .bib file automatically
- You can specify which citation style you'd like using `\bibliographystyle{...}` and by specifying unified for linguistics, apalike for APA, chicago for Chicago style, etc.

- There are many ways to cite things:
- - `\citep{...}` for (Author, Year)
 - `\citet{...}` for Author (Year)
 - `\citep{paper1,paper2}` for (Author1, Year; Author2, Year)

natbib

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- There are many ways to cite things:
 - `\citep{...}` for (Author, Year)
 - `\citet{...}` for Author (Year)
 - `\citep{paper1,paper2}` for (Author1, Year; Author2, Year)
- Cheat sheet for citation commands:
<http://merkel.zoneo.net/Latex/natbib.php>

natbib

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- There are many ways to cite things:
 - `\citep{...}` for (Author, Year)
 - `\citet{...}` for Author (Year)
 - `\citep{paper1,paper2}` for (Author1, Year; Author2, Year)
- Cheat sheet for citation commands:
<http://merkel.zoneo.net/Latex/natbib.php>
- Unified style sheet for linguistics:
<https://linguistlist.org/pubs/tocs/JournalUnifiedStyleSheet2007.pdf>

tipa package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- It's pretty straightforward: IPA in LaTeX

tipa package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- It's pretty straightforward: IPA in LaTeX
- It looks like this:

```
\textipa{[D@ "k\super h\ae p\textcorner t\s{n}  
~\ae nd\textcorner D@ "\t{dZ}\~En\*r@  
l wIl "p\r*{\*r}Ablij: goU:]}
```

tipa package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- It's pretty straightforward: IPA in LaTeX
- It looks like this:

```
\textipa{[D@ "k\super h\ae p\textcorner t\s{n}  
~\ae nd\textcorner D@ "\t{dZ}\~En\*r@  
l wIl "p\r*{\*r}Ablij: goU:]}
```

- Which produces: [ðə 'k^hæp^ɪtɪ ænd'ðə 'dʒɛnɪət wɪt
'pɹablij: goʊ:]

tipa practice

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Try typesetting: [hau du ai meik ai pi ei simbəlɜz ɪn leɪtɛk]
- Or: [maɪ: 'hʊzbənʃʊd'æʏ bɒt'pʰətʰeɪ:rouz]

gb4e package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- gb4e introduces the `exe` environment.
- This allows you to embed nearly anything in an environment with a typical linguistics citation number: (x)
- It looks like:

```
\begin{exe}  
  \ex  
  \begin{table}  
    ...  
  \end{table}  
  \label{...}  
\end{exe}
```

gb4e package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- Glosses are introduced using the `\gll` command.
- It looks like:

```
\begin{exe}
```

```
\ex{\gll Mi griast der Bua, (der) wo aus Ming  
me.\textsc{acc} greets the.\textsc{m.nom} boy
```

```
\glt ‘The boy who comes from Munich greets me
```

```
\end{exe}
```

gb4e package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

■ This code produces:

- (3) a. Mi griast der Bua, (der) wo aus Minga
me.ACC greets the.M.NOM boy who.M.NOM that from Munich
kummt.
comes
'The boy who comes from Munich greets me.'

gb4e package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

■ This code produces:

(3) a. Mi griast der Bua, (der) wo aus Minga
me.ACC greets the.M.NOM boy who.M.NOM that from Munich
kummt.
comes
'The boy who comes from Munich greets me.'

■ Use curly brackets to group multiple words, or empty curly brackets to skip words.

gb4e package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- Lists can be embedded within the example environment using the xlist environment:

```
\begin{exe}  
  \ex  
  \begin{xlist}  
    \ex{...}  
    \ex{...}  
    \ex{...}  
  \end{xlist}  
\end{exe}
```

gb4e package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.
Lists
Graphics
References
Tables
Citations

Linguistics
tipa
gb4e
qtree
knitr

Resources

- Examples can be labeled and cross-referenced using the `\label{...}` and `\ref{...}` commands.

gb4e package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables,
pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- Examples can be labeled and cross-referenced using the `\label{...}` and `\ref{...}` commands.
- The `\label{...}` command must come *after* the example:

```
\ex{Mi griast der Bua, (der) wo  
aus Minga kummt.}\label{ex:MascNom}
```

gb4e package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.
Lists
Graphics
References
Tables
Citations

Linguistics
tipa
gb4e
qtree
knitr

Resources

- Examples can be labeled and cross-referenced using the `\label{...}` and `\ref{...}` commands.
- The `\label{...}` command must come *after* the example:

```
\ex{Mi griast der Bua, (der) wo  
aus Minga kummt.}\label{ex:MascNom}
```

- Check out the `\exr`, `\exp`, and `\exi` commands for other useful ways of labeling and referencing examples.

qtree package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- qtree lets you make...trees!

qtree package

L^AT_EX for
Linguists

Jonathan
Havenhill

Introduction

Linguistics

qtree

Resources

- qtree lets you make...trees!

- The code looks like this:

```
\Tree [.DP [.D des ] [.$n$P
\qroof{Oachkatzl}.$n$P [.CP
\qroof{des}.DP [.C [.C wo ]
[.TP \qroof{$\langle$ des
\rangle$}.DP [.T \qroof{$\langle$
des \rangle$ I gfangn hab}.$v$P T ] ] ] ] ] ] ]
```


qtree package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

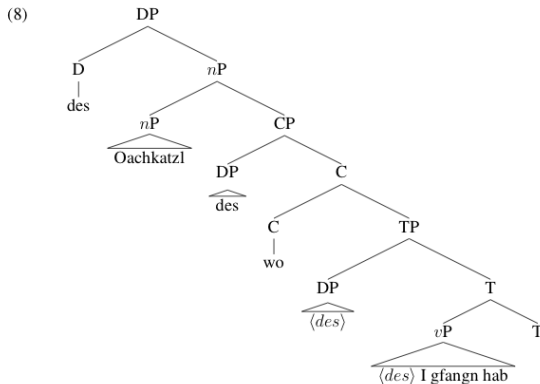
Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- The code on the last slide produces:



qtree package

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction
What is L^AT_EX?
The basics

Formatting
Fonts
Margins

Lists, tables,
pictures, etc.

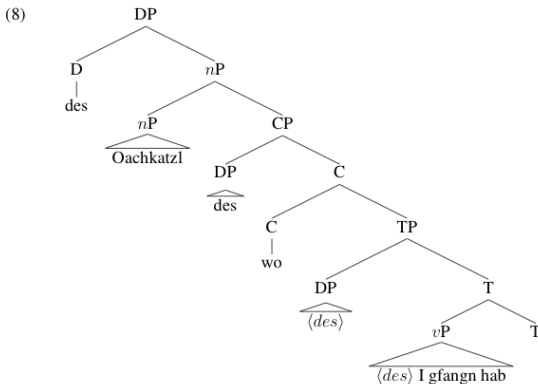
Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- The code on the last slide produces:



- Try bracketing something yourself

knitr

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- <http://yihui.name/knitr/>
- knitr (an extension of Sweave) is a way to incorporate R code into your documents.

knitr

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- <http://yihui.name/knitr/>
- knitr (an extension of Sweave) is a way to incorporate R code into your documents.
- This allows you to include dynamically-generated tables, figures, and references.

knitr

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- <http://yihui.name/knitr/>
- knitr (an extension of Sweave) is a way to incorporate R code into your documents.
- This allows you to include dynamically-generated tables, figures, and references.
- The goal is transparent and reproducible research.

knitr

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- knitr documents can be written directly in RStudio, or in something like Sublime Text with the SublimeKnitr plugin.

knitr

L^AT_EX for
Linguists

Jonathan
Havenhill

Files for today

Introduction

What is L^AT_EX?
The basics

Formatting

Fonts
Margins

Lists, tables,
pictures, etc.

Lists
Graphics
References
Tables
Citations

Linguistics

tipa
gb4e
qtree
knitr

Resources

- knitr documents can be written directly in RStudio, or in something like Sublime Text with the SublimeKnitr plugin.
- Example:

L^AT_EX resources

L^AT_EX for Linguists

Jonathan Havenhill

Files for today

Introduction

What is L^AT_EX?

The basics

Formatting

Fonts

Margins

Lists, tables, pictures, etc.

Lists

Graphics

References

Tables

Citations

Linguistics

tipa

gb4e

qtree

knitr

Resources

- <http://en.wikibooks.org/wiki/LaTeX/>
- Twitter: @TeXtip
- LaTeX4Ling: <http://www.essex.ac.uk/linguistics/external/clmt/latex4ling/>
- Google (of course)