Hello world in LaTeX-land

A brief introduction

Edu Gonzalo-Almorox

Newcastle University Business School - Economics

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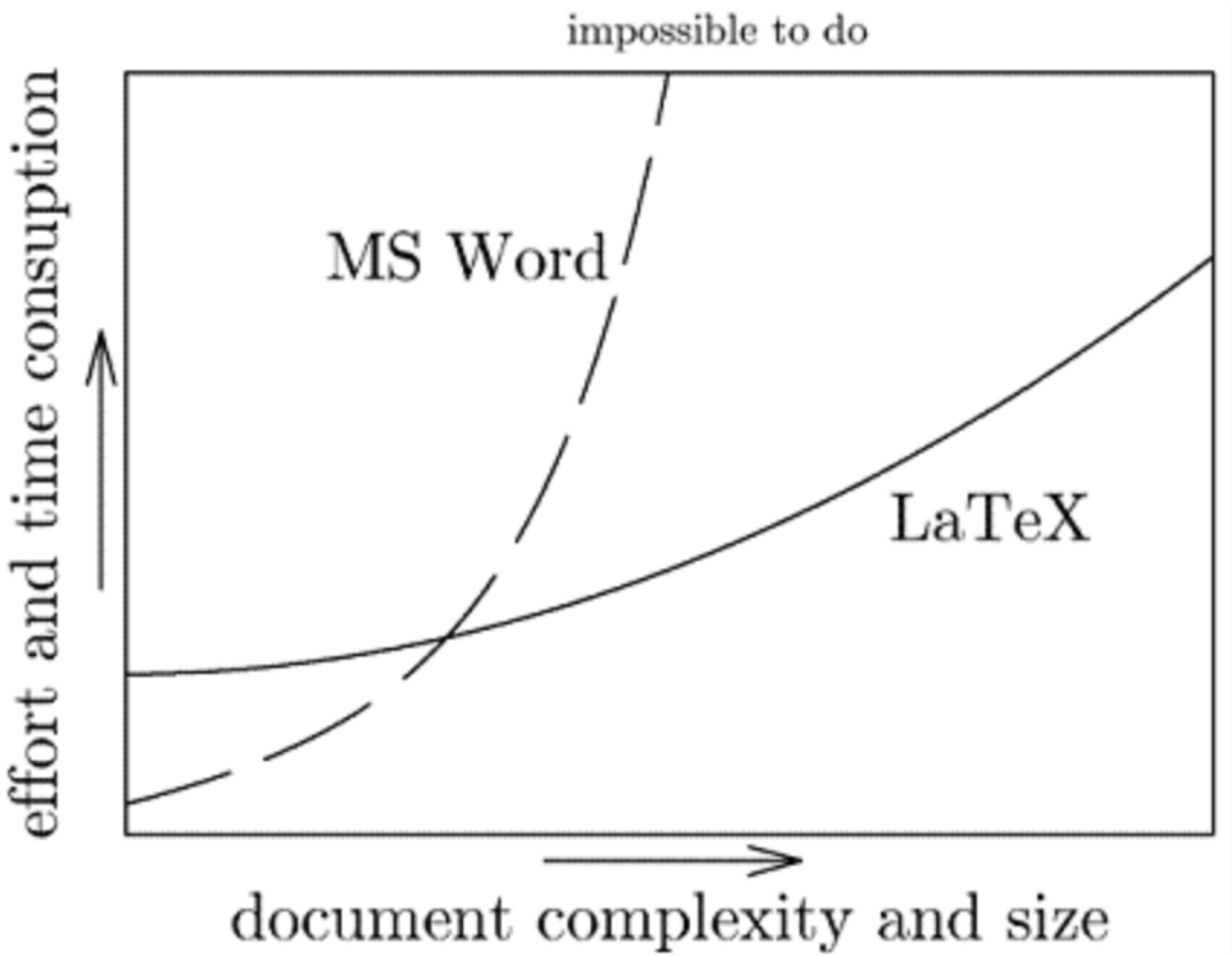
YOUR PAPER MAKES NO GODDAMN SENSE,
BUT IT'S THE MOST BEAUTIFUL THING
I HAVE EVER LAID EYES ON.

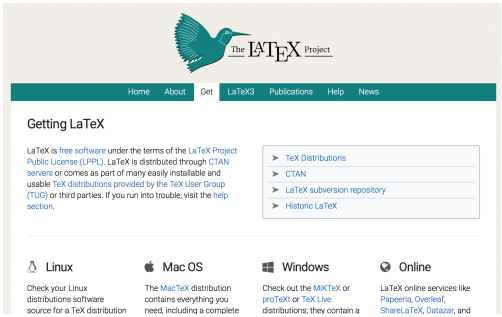

impossible to do
MS Word
LaTeX
effort and time consuption
document complexity and size

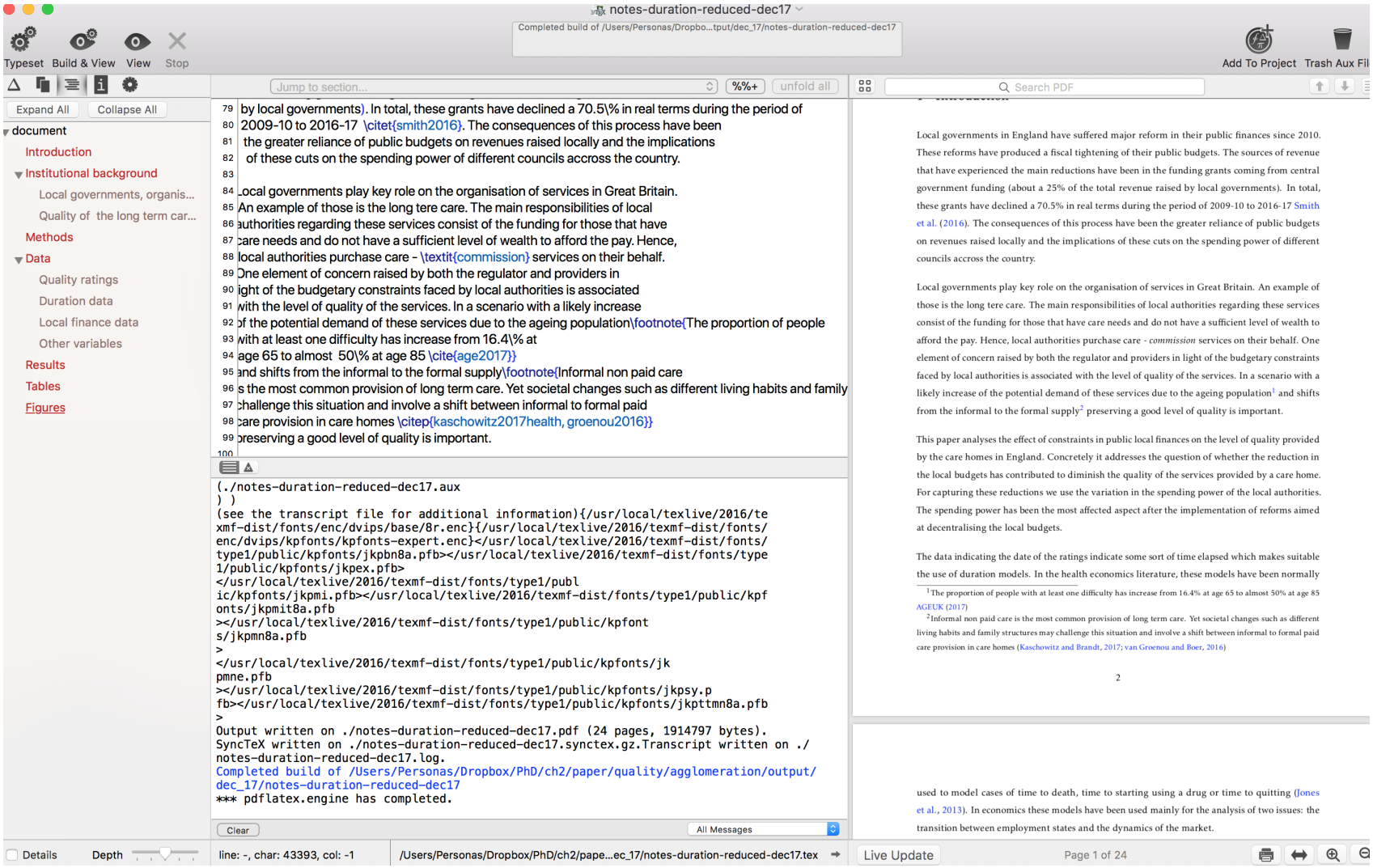
What I intend to do?

1. Understand how the software works.
   - The compiler
   - The editor
   - The final document (normally in .pdf)
2. Let you create and edit your first LaTeXdocument
   - Presentation
   - Article

Workflow in LaTeX

EDITOR ⇒ COMPILER ⇒ OUTPUT (.pdf)

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Institutional background
Local governments, organis...
Quality of the long term car...
Methods
Data
Quality ratings
Duration data
Local finance data
Other variables
Results
Tables
Figures
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2009-10 to 2016-17 \citet{smith2016}. The consequences of this process have been
the greater reliance of public budgets on revenues raised locally and the implications
of these cuts on the spending power of different councils accross the country.
Local governments play key role on the organisation of services in Great Britain.
An example of those is the long tere care. The main responsibilities of local
authorities regarding these services consist of the funding for those that have
care needs and do not have a sufficient level of wealth to afford the pay. Hence,
local authorities purchase care - \textit{commission} services on their behalf.
One element of concern raised by both the regulator and providers in
light of the budgetary constraints faced by local authorities is associated
with the level of quality of the services. In a scenario with a likely increase
of the potential demand of these services due to the ageing population\footnote{The proportion of people
with at least one difficulty has increase from 16.4\% at
age 65 to almost 50\% at age 85 \cite{age2017}}
and shifts from the informal to the formal supply\footnote{Informal non paid care
is the most common provision of long term care. Yet societal changes such as different living habits and family
challenge this situation and involve a shift between informal to formal paid
care provision in care homes \citep{kaschowitz2017health, groenou2016}}
preserving a good level of quality is important.
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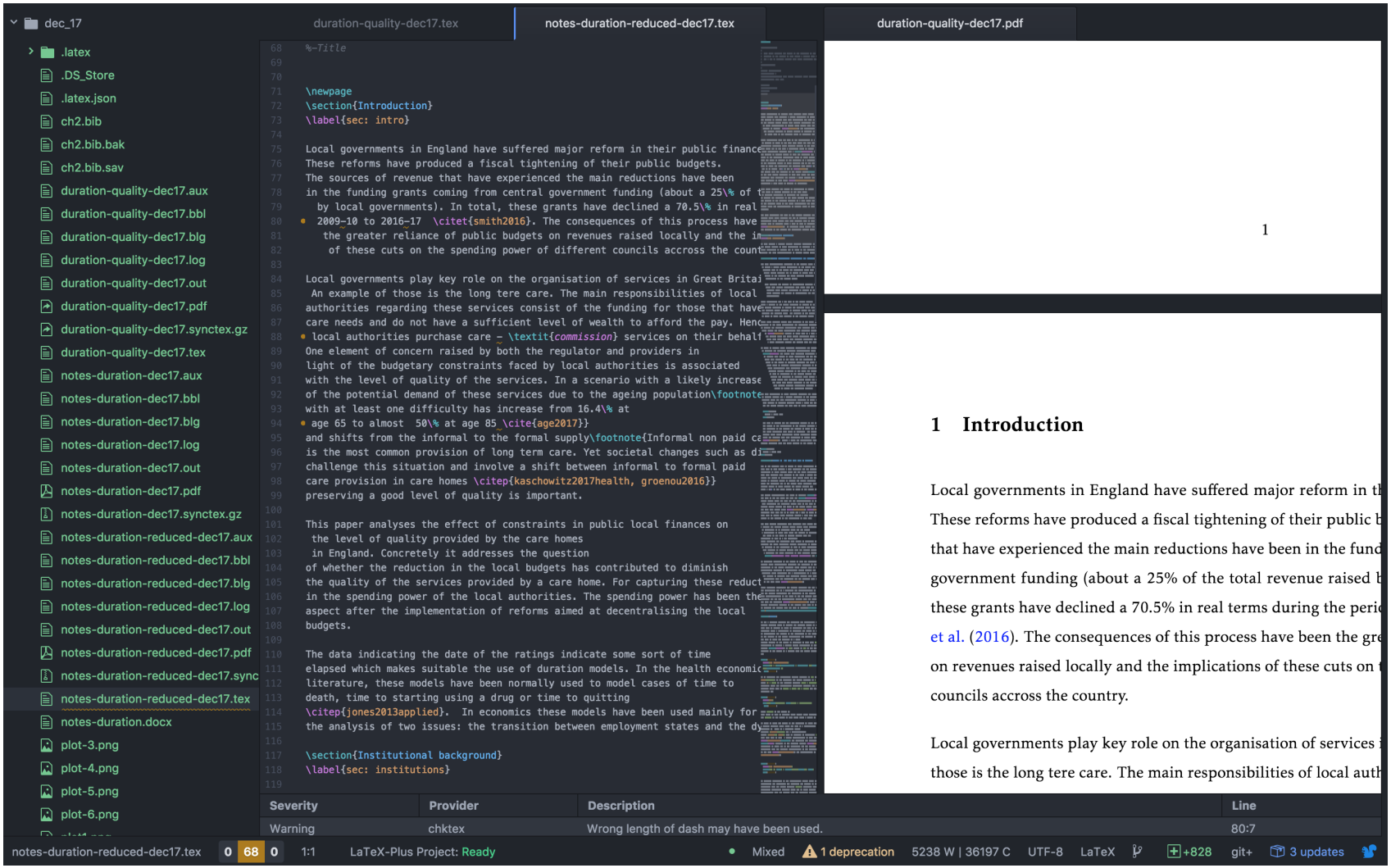
Page 1 of 24
Local governments in England have suffered major reform in their public finances since 2010. These reforms have produced a fiscal tightening of their public budgets. The sources of revenue that have experienced the main reductions have been in the funding grants coming from central government funding (about a 25% of the total revenue raised by local governments). In total, these grants have declined a 70.5% in real terms during the period of 2009-10 to 2016-17 Smith et al. (2016). The consequences of this process have been the greater reliance of public budgets on revenues raised locally and the implications of these cuts on the spending power of different councils accross the country.
Local governments play key role on the organisation of services in Great Britain. An example of those is the long tere care. The main responsibilities of local authorities regarding these services consist of the funding for those that have care needs and do not have a sufficient level of wealth to afford the pay. Hence, local authorities purchase care - commission services on their behalf. One element of concern raised by both the regulator and providers in light of the budgetary constraints faced by local authorities is associated with the level of quality of the services. In a scenario with a likely increase of the potential demand of these services due to the ageing population[1] and shifts from the informal to the formal supply[2] preserving a good level of quality is important.
This paper analyses the effect of constraints in public local finances on the level of quality provided by the care homes in England. Concretely it addresses the question of whether the reduction in the local budgets has contributed to diminish the quality of the services provided by a care home. For capturing these reductions we use the variation in the spending power of the local authorities. The spending power has been the most affected aspect after the implementation of reforms aimed at decentralising the local budgets.
The data indicating the date of the ratings indicate some sort of time elapsed which makes suitable the use of duration models. In the health economics literature, these models have been normally
[1]The proportion of people with at least one difficulty has increase from 16.4% at age 65 to almost 50% at age 85 AGEUK (2017)
[2]Informal non paid care is the most common provision of long term care. Yet societal changes such as different living habits and family structures may challenge this situation and involve a shift between informal to formal paid care provision in care homes (Kaschowitz and Brandt, 2017; van Groenou and Boer, 2016)
2
used to model cases of time to death, time to starting using a drug or time to quitting (Jones et al., 2013). In economics these models have been used mainly for the analysis of two issues: the transition between employment states and the dynamics of the market.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\section{Institutional background}
\label{sec: institutions}
1
1 Introduction
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The goods and bads of LaTeX

LaTeXis good at:

- Mathematical formulas
- Style vs content
- Structure of the document
- Figures and tables

LaTeXis bad at:

- Collaboration and reproducibility
- Track changes and typos
- Count words
- Learning curve in the beginning

beamer documents

- The easier way to start is by using a default beamer template.
- The basic structure is quite similar across all LaTeXdocuments. It is important to specify
  1. The type of document: beamer
  2. The slides: frames

```
\documentclass{beamer}
\begin{document}
\begin{frame}
\frametitle{Your title here}
Your content here....

\end{frame}
\end{document}
```

beamer documents: other issues in the presentation

- Presentations normally have a page for the title
- It has several components
  1. Title and subtitle
  2. Author
  3. Date
  4. Affiliation

```
\documentclass{beamer}
\title{My super presentation}
\subtitle{NERDS Group}
\author{Edu Gonzalo}
\institute{My nice department}
\date{15 December}
\begin{document}
\begin{frame}
\frametitle{Your title here}
Your content here....
\end{frame}
\end{document}
```

beamer documents: other issues in the presentation

- Presentations normally have a page for the title
- It has several components
  1. Title and subtitle
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- Use `titlepage` for creating the slide with the title elements

```
\documentclass{beamer}
\title{My super presentation}
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\date{15 December}
\begin{document}
\begin{frame}
\titlepage
\end{frame}
\begin{frame}
\frametitle{Your title here}
Your content here....
\end{frame}
```

Insert figures

- Support of many formats (.png, .pdf, .jpg)
- Customize the location of the image on the slide
- Use package `graphicx`
- Caveats
  1. Location of the images on the computer
  2. Use `figure` environment
- Use `includegraphics` for inserting the figure

```
\usepackage{graphicx}
\documentclass{beamer}
\begin{frame}
\frametitle{Slide with figures}
\begin{figure}[h]
\includegraphics[width=5cm]{my-figure

\end{figure}
\end{frame}
\end{document}
```

Figure example

```
\includegraphics[width=0.85]{merry-christmas.jpg}
```

Figure example

```
\begin{center}
\includegraphics[width=0.85]{merry-christmas.jpg}
\end{center}
```

Figure example

```
\begin{figure}[h!]
\centering
\includegraphics[width=0.85]{merry-christmas.jpg}
\caption{I wish you merry Christmas}
\end{figure}
```

Figure: I wish you merry Christmas

Columns

- Sometimes you want to place your content in several columns.
- `columns` environment.
- Specify the width of the column

```
\begin{frame}
\frametitle{Slide with
columns}
\begin{columns}
\begincolumn{0.5\textwidth}
Content column 1 ...
\endcolumn{0.5\textwidth}
\begincolumn{0.5\textwidth}
Content column 2 ...
\endcolumn{0.5\textwidth}
\end{columns}
\end{frame}
```

Tables

- There is not a "one fits all" formula
- Depends notably on the complexity of table
- Use `table` and `tabular`

	n	mean	sd	min	max
Positive change revenue spending power (yes = 1)	50037	0.30	0.46	0.00	1.00
No change revenue spending power (yes = 1)	50037	0.20	0.40	0.00	1.00
Negative change revenue spending power (yes = 1)	50037	0.50	0.50	0.00	1.00
Population 65+ (%)	50037	0.19	0.05	0.06	0.34
Job seekers (%)	50037	0.01	0.00	0.00	0.03
Pension credit claimants (%)	50037	0.03	0.01	0.01	0.06
Total specific and special grants	50037	226864	275815	0.00	1645212
District (london) (yes = 1)	50037	0.10	0.30	0.00	1.00

Table: Example

```
\begin{frame}
\frametitle{Table}
\begin{table}[h]
\centering
\begin{tabular}{lcrrrrr}
\hline \ n & mean & sd & min & max \\hline
 Positive change ... & 50037 & 0.30 & 0.46 & 0.00 & 1.00\
... & ... & .... & ... & ... & ...
\end{table}
\end{frame}
```

Sections and subsections

- LaTeXkeeps track of the sections (or chapters) and subsections of the document
- It does so for every type of document you have
  - `section`
  - `subsection`
- Sections can be numbered or not
  - `section{Introduction}`
  - `subsection*{hypotesis}`