Introduction to writing with LaTeX

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Outline

- Morning lecture
  - What is LaTeX
  - Motivating LaTeX
  - LaTeX software environment
  - Basics of writing LaTeX documents
  - BibTeX reference management
  - Scientific documents with journal LaTeX templates
  - LaTeX for slides and posters
  - Collaborative writing and versioning of LaTeX documents
- Afternoon hands-on
  - Develop your LaTeX manuscript
  - Style your manuscript with journal templates
  - Revise your manuscript tracking changes
  - Create slides and a poster to present your work
  - Collaborative writing with your co-authors

Schedule

10.00 - 11.30	Lecture
11.30 - 12.30	*Lunch*
12.30 - 13.15	Hands-on I
13.15 - 13.30	*Break*
13.30 - 14.15	Hands-on II
14.15 - 14.45	*Coffee break*
14.45 - 15.30	Hands-on III
15.30 - 15.45	*Break*
15.45 - 16.30	Hands-on IV
16.30 - 17.00	Closing

About me

- Postdoc with PANGAEA at MARUM
- PhD in environmental informatics at University of Eastern Finland
- MSc in informatics at University of Zurich
- MSc in environmental science at University of Eastern Finland *(soon)*
- My history with LaTeX goes back to 2001 when ...

What is LaTeX

- Document preparation system
- Authored by Leslie Lamport, first released in 1985
- Most often used for technical or scientific documents
- Separate presentation from content
- Worry less about style and more about content
- Write plain text rather than formatted text
- Leave document design to designers
- Free software
- Available for Windows, Mac OS, Linux, Online

`https://www.latex-project.org`

What is LaTeX

- **Markup tagging** is central to writing with LaTeX
- Label parts of the document using tags, e.g. `\textit{}`
- It is used to do things like
  - Define document structure, e.g. chapters, sections
  - Style text, e.g. italic, symbols, tables
  - Cite, footnote, cross-reference, ...
- Anyone familiar with HTML?

Markup tagging

```
\textit{Example}
markup
\underline{tagging}
```

Example markup <u>tagging</u>

Markup tagging

```
\begin{itemize}
\item Eggs
\item Milk
\item Cheese
\item Carrots
\end{itemize}
```

- Eggs
- Milk
- Cheese
- Carrots

Markup tagging

```
$ E = mc^2 $
```

$E = mc^2$

Why LaTeX: Advantages

- High typographic quality
- Excels at difficult typesetting tasks, e.g. mathematical text
- Makes things easy, e.g. citation, cross-reference, table of content
- Great engineering, fast and stable
- Even with long and complex documents
- No corrupt files, content loss, etc.
- Truly portable across systems

Why *not* LaTeX: Disadvantages

- Learning curve, somewhat difficult to learn
- Though, basics are *really* easy
- Surely requires some time
- Not WYSIWYG
- More difficult in collaborative writing
- Less support for tracking changes

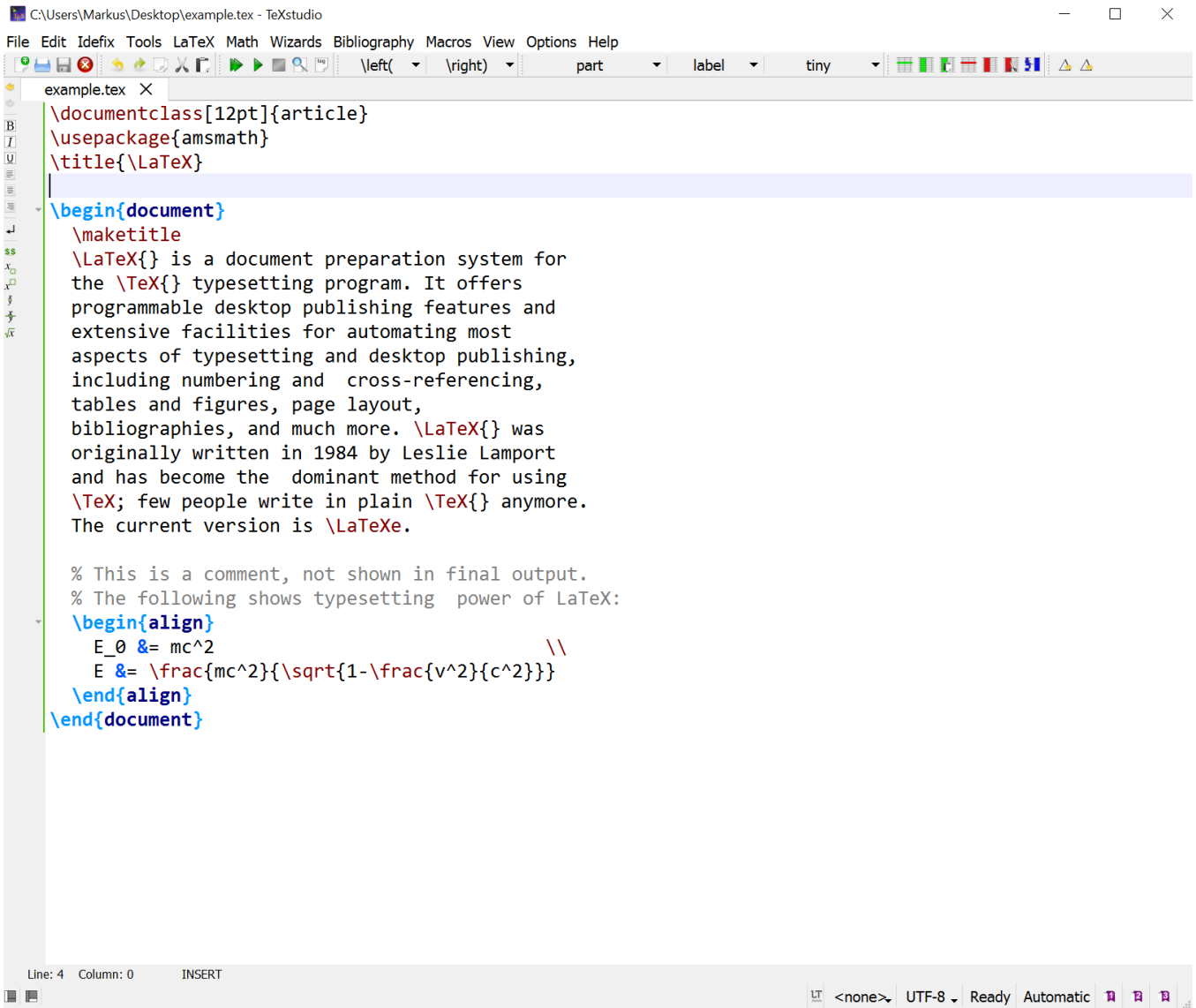
Working with LaTeX

- You need a distribution
  - Most likely TeX Live (`http://www.tug.org/texlive/`)
  - Or MiKTeX on Windows (`https://miktex.org/`)
  - Possibly MacTeX (`http://www.tug.org/mactex/`)
- Some kind of editor
- If you like Notepad, Vim, Emacs, ...
- Preferably,
  - TeXstudio (`http://texstudio.org/`)
  - Texmaker (`http://www.xm1math.net/texmaker/`)
  - TeXnicCenter on Windows (`http://www.texniccenter.org/`)
  - TeXShop on Mac OS (`http://pages.uoregon.edu/koch/texshop/`)
  - Among others ...
- Make use of packages, of which there are several thousands

Working with LaTeX

1. Install distribution and editor
2. Install required packages
3. Write LaTeX document using editor
4. Translate LaTeX document into PDF document
5. Iterate over points (2) and 3-4 until done

TeXstudio


C:\Users\Markus\Desktop\example.tex - TeXstudio
File Edit Idefix Tools LaTeX Math Wizards Bibliography Macros View Options Help
\left(\right) part label tiny
example.tex
\documentclass[12pt]{article}
\usepackage{amsmath}
\title{\LaTeX}
\begin{document}
\maketitle
\LaTeX{} is a document preparation system for
the \TeX{} typesetting program. It offers
programmable desktop publishing features and
extensive facilities for automating most
aspects of typesetting and desktop publishing,
including numbering and cross-referencing,
tables and figures, page layout,
bibliographies, and much more. \LaTeX{} was
originally written in 1984 by Leslie Lamport
and has become the dominant method for using
\TeX; few people write in plain \TeX{} anymore.
The current version is \LaTeXe.
% This is a comment, not shown in final output.
% The following shows typesetting power of LaTeX:
\begin{align}
E_0 &= mc^2 \\
E &= \frac{mc^2}{\sqrt{1-\frac{v^2}{c^2}}}
\end{align}
\end{document}
Line: 4 Column: 0 INSERT
<none> UTF-8 Ready Automatic

Writing LaTeX documents

- Start with minimal document
- Develop it gradually by introducing new elements
- Structural elements, e.g. title, sections
- Style text, e.g. font size, italic, bold
- Mathematical and chemical formulae, quantities and units
- Tables, graphics and figures
- Cross-references, footnotes, and index
- Citation and reference list
- Table of contents, list of figures and tables
- Tracking changes

Minimal document

```
\documentclass{article}

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

Minimal document

Hello World.

Minimal document

```
\documentclass{article}

% I am a comment
% This area is called the PREAMBLE
% Used to load packages and configure your document

\begin{document}

% This is the BODY of the document
% Document content goes here

\end{document}
```

Article title

```
\documentclass{article}

\title{Shine On You Crazy Diamond}
\author{Pink Floyd}
\date{1975}

\begin{document}
  \maketitle % Don't worry how it is displayed
             % It will look pretty good
\end{document}
```

Shine On You Crazy Diamond

Pink Floyd

1975

Article sections

```
\documentclass{article}

\title{Shine On You Crazy Diamond}
\author{Pink Floyd}
\date{1975}

\begin{document}
  \maketitle

  \section{Introduction}
  \section{History}
  \section{Lyrics}

\end{document}
```

Article sections

Shine On You Crazy Diamond

Pink Floyd

1975

Sectioning

```
% For article document class
\section{...}
\subsection{...}
\subsubsection{...}
\paragraph{...}
\subparagraph{...}

% Addtionally for book document class
\chapter{...}
```

Text styling

```
Remember \textbf{when} you \textit{were} young
    \underline{you} shone \texttt{like} the
   sun.

{\color{red}Now there's}     {\Huge{a}}
   \textbf{\underline{look in} your}
   eyes, like     {\tiny{``black holes
   {\Large{in the sky}}.''}}
```

Remember **when** you *were* young you shone `like` the sun.

Now there's **a** **look in** **your** eyes, like "black holes in the sky."

Mathematical formulae

```
\begin{displaymath}
  \lim_{n \to \infty}
  \sum_{k=1}^n
  \frac{1}{k^2}
\end{displaymath}

Math $a^2 + b^2 = c^2$ in text style.
```

$$\lim_{n \to \infty} \sum_{k=1}^{n} \frac{1}{k^2}$$

Math $a^2 + b^2 = c^2$ in text style.

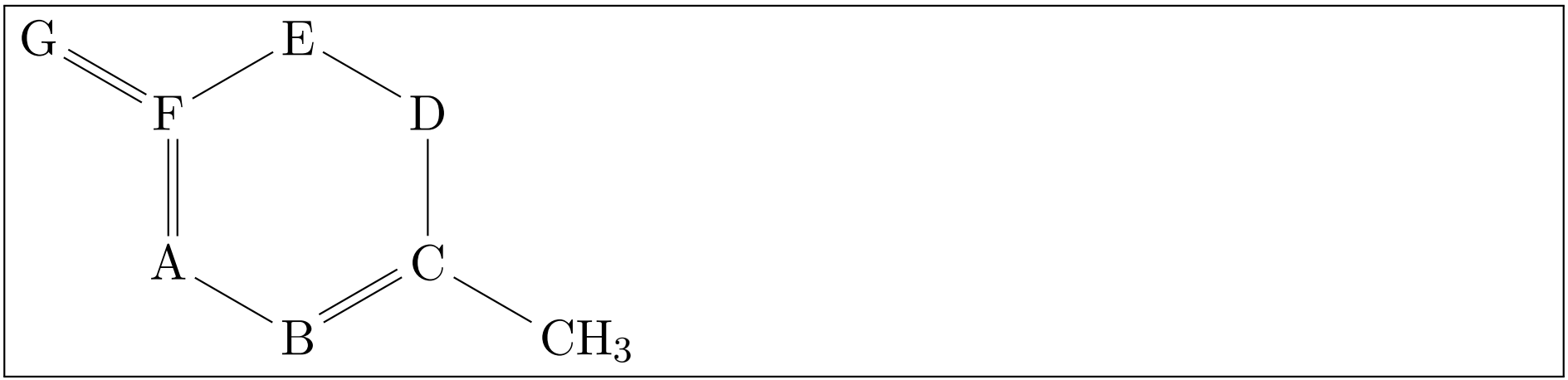
Chemical formulae

```
\ce{CO2}

\ce{CO2 + C -> 2 CO}

This is a \ce{H2O} molecule.

I can do charges \ce{CrO4^2-} and much more.
```

CO_2
$CO_2 + C \longrightarrow 2CO$
This is a H_2O molecule.
I can do charges CrO_4^{2-} and much more.

Chemical formulae

```
\chemfig{A*6(-B=C(-CH_3)-D-E-F(=G)=)}
```



Quantities and units

```
\num{.3e45}

\numlist{10;30;50;70}

\numrange{10}{30}

\si{\kilo\gram\metre\per\square\second}

\SI{1.25}{\metre\per\second}
```

0.3×10^{45}
10, 30, 50 and 70
10 to 30
$\mathrm{kg\,m\,s^{-2}}$
$1.25\,\mathrm{m\,s^{-1}}$

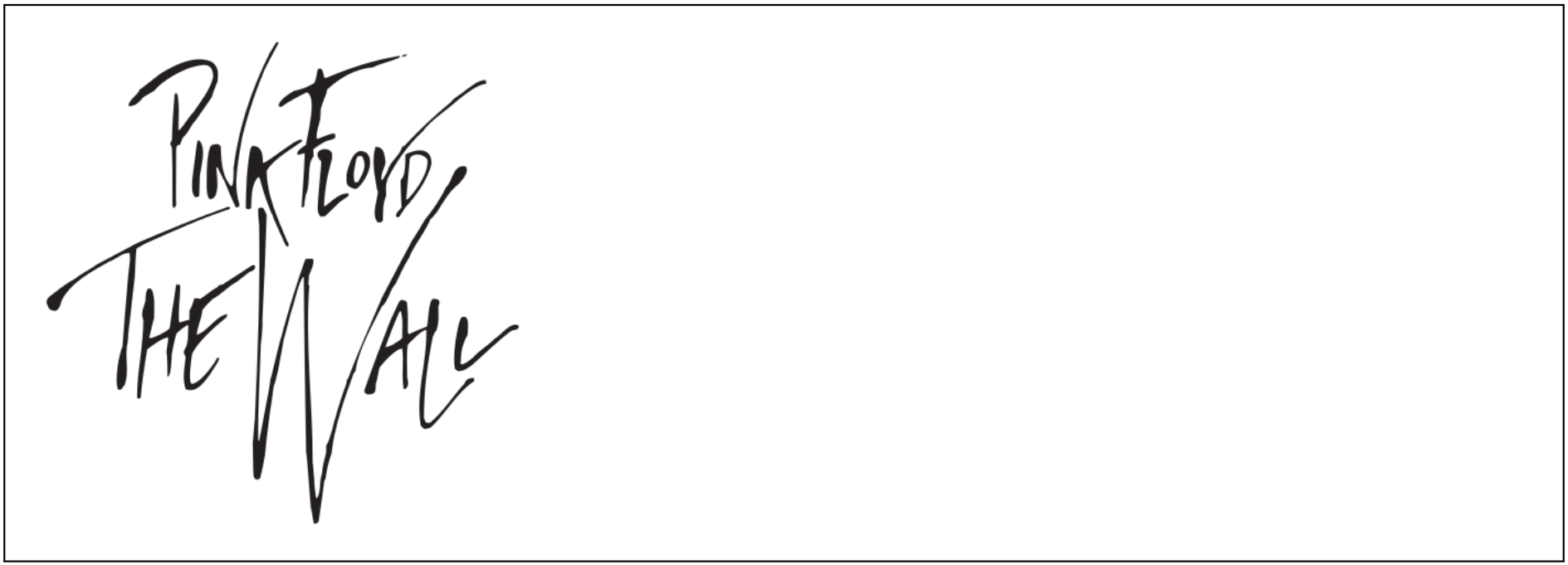
Tables

```
\begin{tabular}{|l|c|}
  \hline
  Year & Title \\
  \hline
  1973 & The Dark Side of the Moon \\
  1975 & Wish You Were Here \\
  1979 & The Wall \\
  \hline
\end{tabular}
```

Year	Title
1973	The Dark Side of the Moon
1975	Wish You Were Here
1979	The Wall

Graphics

```
\includegraphics[scale=0.6]{thewall.png}
```



Note: You can include PDFs!

Note: Graphics remain independent files

Figures and captions

```
\begin{figure}
  \centering
  \includegraphics[scale=0.4]{thewall.png}
  \caption{The Wall album cover}
\end{figure}
```

Figure: The Wall album cover

Cross-references

```
\begin{equation}\label{eq}
E = mc^2
\end{equation}

As shown in Equation \ref{eq}, ...
```

$$E = mc^2 \tag{1}$$

As shown in Equation 1, ...

Note: Same approach is used for figures, tables, sections, ...

Footnotes

```
Remember when you were young,
  you shone like the sun.

Shine
on\footnote{Read as if a comma is placed here}
you crazy
diamond\footnote{The crazy diamond is Syd Barrett}.

Now there's a look in your eyes,
  like black holes in the sky.
```

Footnotes

Remember when you were young, you shone like the sun.
Shine on[1] you crazy diamond[2].
Now there's a look in your eyes, like black holes in the sky.

[1] Read as if a comma is placed here
[2] Syd Barrett is the crazy diamond

Index

```
\documentclass{article}

\usepackage{makeidx}

\makeindex

\begin{document}

  Shine\index{Sun} on you crazy\newpage
  diamond\index{Diamond}\index{Diamond!Syd}.

  \printindex

\end{document}
```

Index

Citation

```
\documentclass{article}

\begin{document}

  Shine on you crazy diamond \cite{pf}.

  \bibliographystyle{plain}
  \bibliography{bibliography.bib}

\end{document}
```

Reference list

Shine on you crazy diamond [1].

References

[1] Pink Floyd. Wish you where here. LP, September 1975.

Table of contents, list of figures and tables

```
\documentclass{article}

\begin{document}

  \tableofcontents  % Write out the Table of Contents
  \listoffigures  % Write out the List of Figures
  \listoftables  % Write out the List of Tables

\end{document}
```

Table of contents

```
\documentclass{article}

\title{Shine On You Crazy Diamond}
\author{Pink Floyd}
\date{1975}

\begin{document}
  \maketitle
  \tableofcontents
  \section{Introduction}
  Lorem ipsum dolor sit amet, consectetur adipiscing elit.
  \section{History}
  Morbi sagittis enim lorem, a pulvinar orci fringilla ac.
\end{document}
```

Table of contents

Shine On You Crazy Diamond

Pink Floyd

1975

Contents

1 Introduction

Lorem ipsum dolor sit amet, consectetur adipiscing elit.

2 History

Morbi sagittis enim lorem, a pulvinar orci fringilla ac.

Tracking changes

```
\documentclass{article}

\usepackage{changes}

\definechangesauthor[name={John Doe}, color=blue]{JD}

\begin{document}

  \deleted{...}
  \replaced{...}{...}
  \added[id=JD]{...}

\end{document}
```

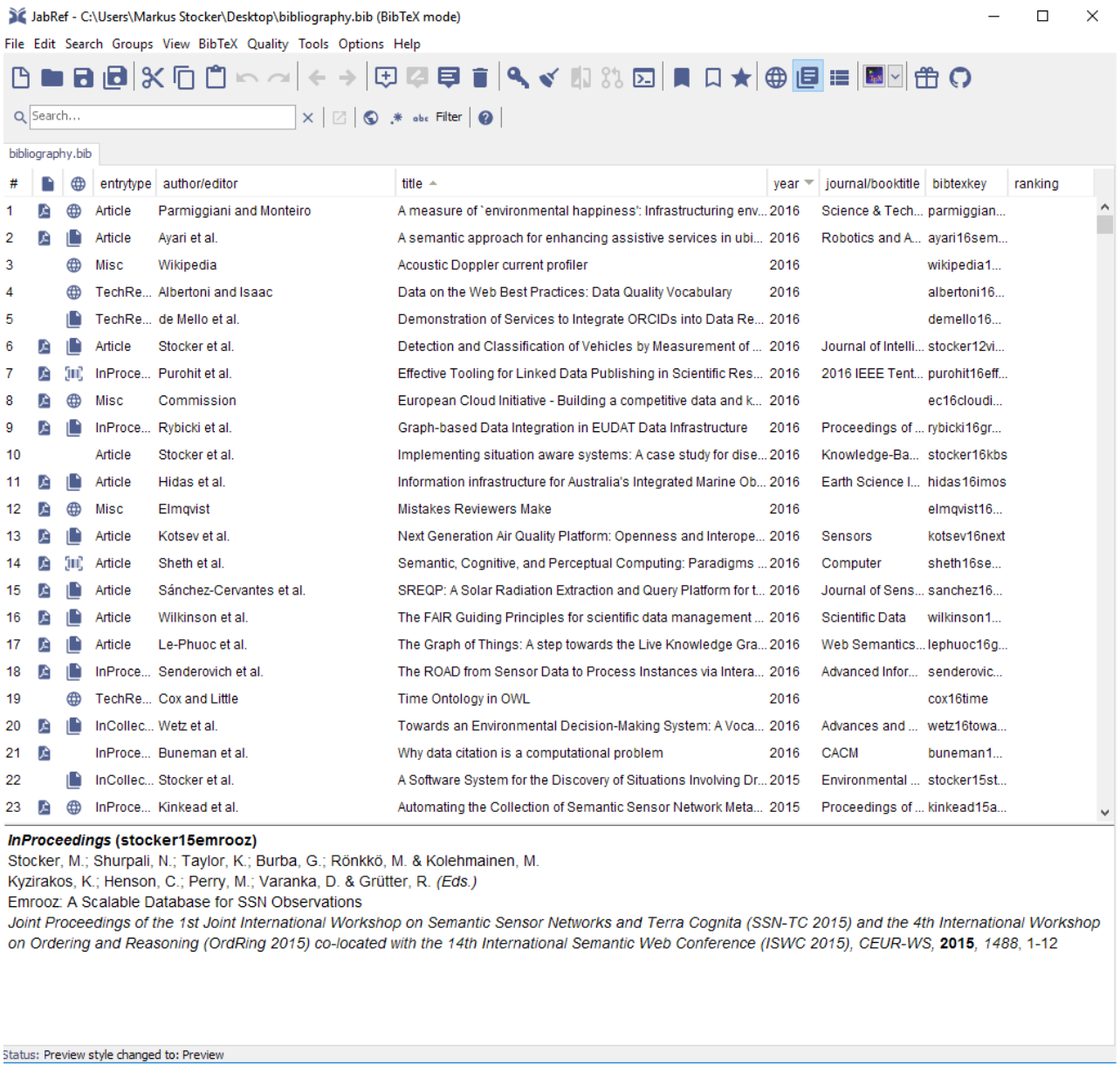
Tracking changes

Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. ~~Consetetur sadipscing elitr, sed diam nonumy eirmod tempor.~~[MS] Invidunt ut labore et dolore magna aliquyam erat.~~At vero eos et accusam et justo duo dolores et ea rebum.~~[JD] Lorem ipsum dolor sit amet.[MS] At vero eos et accusam et justo duo dolores et ea rebum.

Reference managers

- References should be managed, using some tool
- Many out there, Mendeley, EndNote, RefWorks, ...
- Make sure the one you choose supports BibTeX file format
- Here we will be using JabRef

JabRef


JabRef - C:\Users\Markus Stocker\Desktop\bibliography.bib (BibTeX mode)
File Edit Search Groups View BibTeX Quality Tools Options Help
Search...
Filter
bibliography.bib
entrytype author/editor title year journal/booktitle bibtexkey ranking
1 Article Parmiggiani and Monteiro A measure of `environmental happiness': Infrastructuring env... 2016 Science & Tech... parmiggian...
2 Article Ayari et al. A semantic approach for enhancing assistive services in ubi... 2016 Robotics and A... ayari16sem...
3 Misc Wikipedia Acoustic Doppler current profiler 2016 wikipedia1...
4 TechRe... Albertoni and Isaac Data on the Web Best Practices: Data Quality Vocabulary 2016 albertoni16...
5 TechRe... de Mello et al. Demonstration of Services to Integrate ORCIDs into Data Re... 2016 demello16...
6 Article Stocker et al. Detection and Classification of Vehicles by Measurement of ... 2016 Journal of Intelli... stocker12vi...
7 InProce... Purohit et al. Effective Tooling for Linked Data Publishing in Scientific Res... 2016 2016 IEEE Tent... purohit16eff...
8 Misc Commission European Cloud Initiative - Building a competitive data and k... 2016 ec16cloudi...
9 InProce... Rybicki et al. Graph-based Data Integration in EUDAT Data Infrastructure 2016 Proceedings of ... rybicki16gr...
10 Article Stocker et al. Implementing situation aware systems: A case study for dise... 2016 Knowledge-Ba... stocker16kbs
11 Article Hidas et al. Information infrastructure for Australia's Integrated Marine Ob... 2016 Earth Science I... hidas16imos
12 Misc Elmqvist Mistakes Reviewers Make 2016 elmqvist16...
13 Article Kotsev et al. Next Generation Air Quality Platform: Openness and Interope... 2016 Sensors kotsev16next
14 Article Sheth et al. Semantic, Cognitive, and Perceptual Computing: Paradigms ... 2016 Computer sheth16se...
15 Article Sánchez-Cervantes et al. SREQP: A Solar Radiation Extraction and Query Platform for t... 2016 Journal of Sens... sanchez16...
16 Article Wilkinson et al. The FAIR Guiding Principles for scientific data management ... 2016 Scientific Data wilkinson1...
17 Article Le-Phuoc et al. The Graph of Things: A step towards the Live Knowledge Gra... 2016 Web Semantics... lephuoc16g...
18 InProce... Senderovich et al. The ROAD from Sensor Data to Process Instances via Intera... 2016 Advanced Infor... senderovic...
19 TechRe... Cox and Little Time Ontology in OWL 2016 cox16time
20 InCollec... Wetz et al. Towards an Environmental Decision-Making System: A Voca... 2016 Advances and ... wetz16towa...
21 InProce... Buneman et al. Why data citation is a computational problem 2016 CACM buneman1...
22 InCollec... Stocker et al. A Software System for the Discovery of Situations Involving Dr... 2015 Environmental ... stocker15st...
23 InProce... Kinkead et al. Automating the Collection of Semantic Sensor Network Meta... 2015 Proceedings of ... kinkead15a...
InProceedings (stocker15emrooz)
Stocker, M.; Shurpali, N.; Taylor, K.; Burba, G.; Rönkkö, M. & Kolehmainen, M.
Kyzirakos, K.; Henson, C.; Perry, M.; Varanka, D. & Grütter, R. (Eds.)
Emrooz: A Scalable Database for SSN Observations
Joint Proceedings of the 1st Joint International Workshop on Semantic Sensor Networks and Terra Cognita (SSN-TC 2015) and the 4th International Workshop on Ordering and Reasoning (OrdRing 2015) co-located with the 14th International Semantic Web Conference (ISWC 2015), CEUR-WS, 2015, 1488, 1-12
Status: Preview style changed to: Preview

BibTeX citation

```
@InProceedings{stocker08sparql,
  title = {{SPARQL Basic Graph Pattern Optimization
            Using Selectivity Estimation}},
  author = {Stocker, M. and Seaborne, A.
            and Bernstein, A. and Kiefer, C.
            and Reynolds, D.},
  booktitle = {Proceeding of the 17th international
               conference on World Wide Web},
  pages = {595--604},
  year = {2008},
  url = {http://doi.acm.org/10.1145/1367497.1367578},
  doi = {10.1145/1367497.1367578},
  publisher = {ACM},
  isbn = {978-1-60558-085-2}
}
```

Obtain citations

Cite

```
\documentclass{article}

\begin{document}

  In \cite{stocker08sparql}, the authors show that ...

  \bibliographystyle{plain}
  \bibliography{bibliography.bib}

\end{document}
```

Journal templates

- LaTeX is pretty much the standard in publishing
- Most journal provide LaTeX templates
- In fact, they are typically by the publisher
- Selected publishers with LaTeX instructions
  - Elsevier, Springer, IOS Press, PLOS, Taylor & Francis, Wiley, SAGE, IEEE, MDPI, Nature Publishing Group, ...
- Simply search for "[PUBLISHER/JOURNAL] latex template"

Elsevier LaTeX instructions

ELSEVIER

SEARCH CART MENU

Home › Authors › Author schemas › Latex Instructions

LaTeX instructions

The guidelines on this page will help you to prepare and submit your LaTeX files. Please note that there are separate instructions available for CRC journal articles and IFAC meeting papers ↗ .

Preparing your manuscript

The Elsevier article class

The Elsevier article class helps you to format the frontmatter of your manuscript properly. It is part of the elsarticle package. This package is contained in most TeX distributions and is available on CTAN ↗ . The ↓ elsarticle documentation and some common templates and bibliographic styles are part of this package as well. You can download a set of files containing a template LaTeX manuscript, using the elsarticle class, plus associated BibTeX style files here. Although elsarticle.cls supports most journal styles, it is not possible to match the journal's layout exactly.

Elsevier reference styles

Some journals require a specific reference style. The relevant bibliographic styles for LaTeX are packed with the sample manuscript.

Elsarticle LaTeX document class

CTAN
Comprehensive TeX Archive Network

Login Join Settings Help

Cover Upload Browse Search

Location: CTAN tex-archive macros latex contrib elsarticle

Directory macros/latex/contrib/elsarticle

README

```
This is Elsevier's new document class for typeset journal articles,
elsarticle.cls.  It is now accepted for submitted articles, both in
Elsevier's electronic submission system and elsewhere.

Elsevier's previous document class for typeset articles, elsart.cls,
is now over 10 years old. It has been replaced with this newly written
document class elsarticle.cls, which has been developed for Elsevier
by the leading TeX developer River Valley Technologies.

elsarticle.cls is based upon the standard LaTeX document class
article.cls. It uses natbib.sty for bibliographical references.

Bugs and problems with elsarticle.cls may be reported to the
developers of the class via elsarticle@river-valley.com.

The file manifest.txt provides a list of the files in the elsarticle
bundle.  The following are the main files available:
- elsarticle.cls, the class file
- elsdoc.pdf, the user documentation
```

Download the contents of this package in one zip archive (995.1k).

elsarticle – Class for articles for submission to Elsevier journals

The class is for typeset journal articles, is accepted for submitted articles, both in Elsevier's electronic submission system and elsewhere.

Package	elsarticle
Version	1.20
License	The LaTeX Project Public License 1.2
Copyright	2007,2008,2009 Elsevier B.V., The Netherlands
Maintainer	Martin Ruck Simon Pepping
Contained in	TeX Live as elsarticle

LaTeX for slides

- LaTeX can be used to create slides
- In fact, these slides were done with LaTeX
- Obviously, for a LaTeX course!
- Widely used document class is called `beamer`

Slides with beamer document class

```
\documentclass{beamer}

\begin{document}

  \begin{frame}
    \frametitle{Outline}

    \begin{itemize}
      \item ...
    \end{itemize}
  \end{frame}

\end{document}
```

LaTeX for posters

- There are many document classes for posters
- a0poster, baposter, sciposter, beamerposter, tikzposter, Jacobs, ...
- As for slides, whether you use LaTeX for posters depends
  - Is there a corresponding LaTeX article?
  - Are you reusing content from the article in the poster?
  - Especially formulae, references, etc.
- Slides as PDF, not as PPTX (obviously)

Jacobs poster

Unnecessarily Complicated Research Title

John Smith, James Smith and Jane Smith
Department and University Name

Objectives

Lorem ipsum dolor sit amet, consectetur, nunc tellus pulvinar tortor, commodo eleifend risus arcu sed odio:

- Mollis dignissim, magna augue tincidunt dolor, interdum vestibulum urna
- Sed aliquet luctus lectus, eget aliquet leo ullamcorper consequat. Vivamus eros sem, iaculis ut euismod non, sollicitudin vel orci.
- Nascetur ridiculus mus.
- Euismod non erat. Nam ultricies pellentesque nunc, ultrices volutpat nisl ultrices a.

Introduction

Lorem ipsum dolor **sit amet**, consectetur adipiscing elit. Sed commodo molestie porta. Sed ultrices scelerisque sapien ac commodo. Donec ut volutpat elit. Sed laoreet accumsan mattis. Integer sapien tellus, auctor ac blandit eget, sollicitudin vitae lorem. Praesent dictum tempor pulvinar. Suspendisse potenti. Sed tincidunt varius ipsum, et porta nulla suscipit et. Etiam congue bibendum felis, ac dictum augue cursus a. **Donec** magna eros, iaculis sit amet placerat quis, laoreet id est. In ut orci purus, interdum ornare nibh. Pellentesque pulvinar, nibh ac malesuada accumsan, urna nunc convallis tortor, ac vehicula nulla tellus eget nulla. Nullam lectus tortor, *consequat tempor hendrerit* quis, vestibulum in diam. Maecenas sed diam augue. This statement requires citation [1].

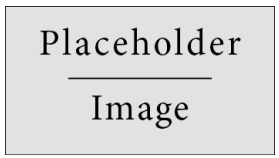


Figure 1: Figure caption

Materials

The following materials were required to complete the research:

- Curabitur pellentesque dignissim
- Eu facilisis est tempus quis
- Duis porta consequat lorem
- Eu facilisis est tempus quis

The materials were prepared according to the steps outlined below:

1. Curabitur pellentesque dignissim
2. Eu facilisis est tempus quis
3. Duis porta consequat lorem
4. Curabitur pellentesque dignissim

Methods

Lorem ipsum dolor **sit amet**, consectetur adipiscing elit. Sed laoreet accumsan mattis. Integer sapien tellus, auctor ac blandit eget, sollicitudin vitae lorem. Praesent dictum tempor pulvinar. Suspendisse potenti. Sed tincidunt varius ipsum, et porta nulla suscipit et. Etiam congue bibendum felis, ac dictum augue cursus a. **Donec** magna eros, iaculis sit amet placerat quis, laoreet id est. In ut orci purus, interdum ornare nibh. Pellentesque pulvinar, nibh ac malesuada accumsan, urna nunc convallis tortor, ac vehicula nulla tellus eget nulla. Nullam lectus tortor, *consequat tempor hendrerit* quis, vestibulum in diam. Maecenas sed diam augue.

Important Result

Lorem ipsum dolor **sit amet**, consectetur adipiscing elit. Sed commodo molestie porta. Sed ultrices scelerisque sapien ac commodo. Donec ut volutpat elit.

Mathematical Section

Nam quis odio enim, in molestie libero. Vivamus cursus mi at nulla elementum sollicitudin. Nam quis odio enim, in molestie libero. Vivamus cursus mi at nulla elementum sollicitudin.

$$E = mc^2 \tag{1}$$

Nam quis odio enim, in molestie libero. Vivamus cursus mi at nulla elementum sollicitudin. Nam quis odio enim, in molestie libero. Vivamus cursus mi at nulla elementum sollicitudin.

$$\cos^3\theta = \frac{1}{4}\cos\theta + \frac{3}{4}\cos 3\theta \tag{2}$$

Nam quis odio enim, in molestie libero. Vivamus cursus mi at nulla elementum sollicitudin. Nam quis odio enim, in molestie libero. Vivamus cursus mi at nulla elementum sollicitudin.

$$\kappa = \frac{\xi}{E_{\max}} \tag{3}$$

Results

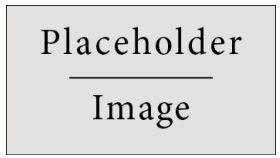


Figure 2: Figure caption

Nunc tempus venenatis facilisis. Curabitur suscipit consequat eros non porttitor. Sed a massa dolor, id ornare enim:

Treatments	Response 1	Response 2
Treatment 1	0.0003262	0.562
Treatment 2	0.0015681	0.910
Treatment 3	0.0009271	0.296

Table 1: Table caption

Conclusion

Nunc tempus venenatis facilisis. **Curabitur suscipit** consequat eros non porttitor. Sed a massa dolor, id ornare enim. Fusce quis massa dictum tortor **tincidunt mattis**. Donec quam est, lobortis quis pretium at, laoreet scelerisque lacus. Nam quis odio enim, in molestie libero. Vivamus cursus mi at *nulla elementum sollicitudin*.

Additional Information

Maecenas ultricies feugiat velit non mattis. Fusce tempus arcu id ligula varius dictum.

- Curabitur pellentesque dignissim
- Eu facilisis est tempus quis
- Duis porta consequat lorem

References

[1] J. M. Smith and A. B. Jones.
Book Title.
Publisher, 7th edition, 2012.

[2] A. B. Jones and J. M. Smith.
Article Title.
Journal title, 13(52):123–456, March 2013.

Acknowledgements

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Contact Information

- Web: http://www.university.edu/smithlab
- Email: john@smith.com
- Phone: +1 (000) 111 1111

PLACEHOLDER LOGO PLACEHOLDER LOGO

LaTeX for ...

- You can use LaTeX for a lot of things!
- Plenty of document classes and packages
- For instance, my CV is written in LaTeX
- LaTeX can create graphics, not just include them
- You can write music with LaTeX

Write music with LaTeX

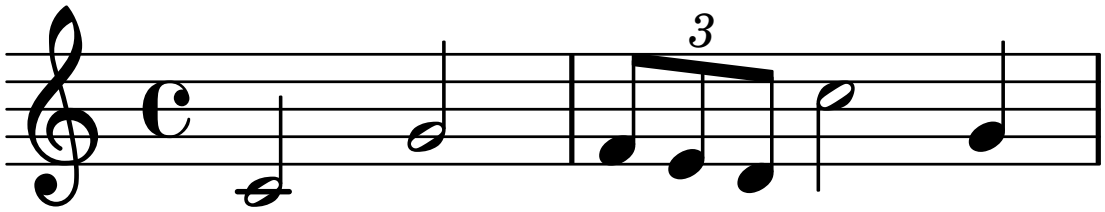
```
\documentclass{article}

\begin{document}

  \begin{lilypond}
    \relative c' {
      c2 g'2 \times 2/3 { f8 e d } c'2 g4
    }
  \end{lilypond}

\end{document}
```

Write music with LaTeX



https://martin-thoma.com/how-to-write-music-with-latex/

Some thoughts on collaborative writing

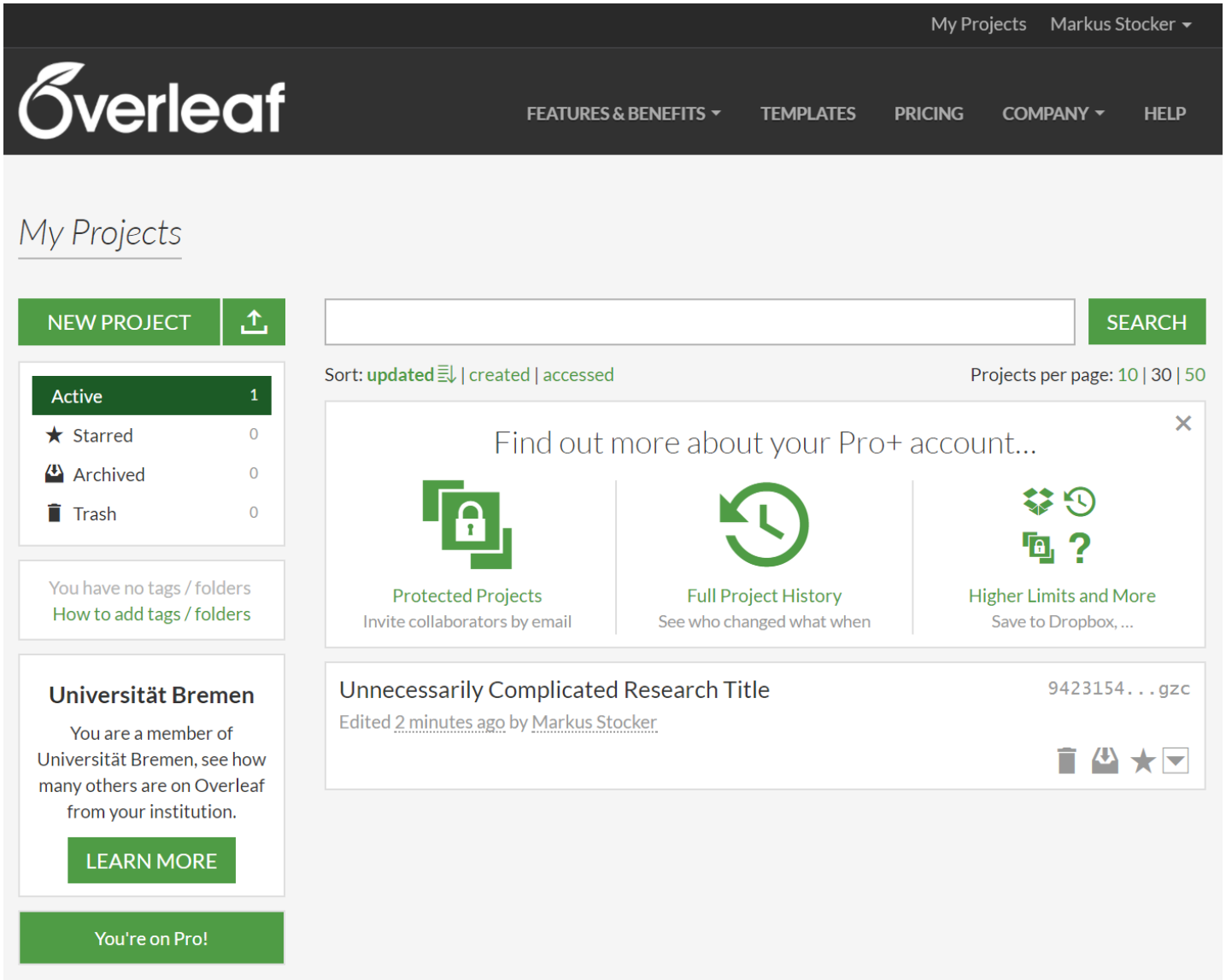
- Typically, we work collaboratively on manuscripts
- Collaborative writing is not entirely trivial
- Too often we send around files by email
- Google Docs has eased this considerably
- It is super convenient, also for editing
- However, not for complex documents
- Write locally and safe in Dropbox is also popular
- But Dropbox doesn't merge changes

Online LaTeX

- There exist a number of online platforms
- For instance Overleaf and ShareLaTeX
- Overleaf is an online LaTeX collaborative writing tool
- With a reasonable free plan
- How to work offline, e.g. on an airplane?

`https://www.overleaf.com/`

Overleaf


My Projects
Markus Stocker
Overleaf
FEATURES & BENEFITS
TEMPLATES
PRICING
COMPANY
HELP
My Projects
NEW PROJECT
SEARCH
Active 1
Starred 0
Archived 0
Trash 0
You have no tags / folders
How to add tags / folders
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You are a member of Universität Bremen, see how many others are on Overleaf from your institution.
LEARN MORE
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Projects per page: 10 | 30 | 50
Find out more about your Pro+ account...
Protected Projects
Invite collaborators by email
Full Project History
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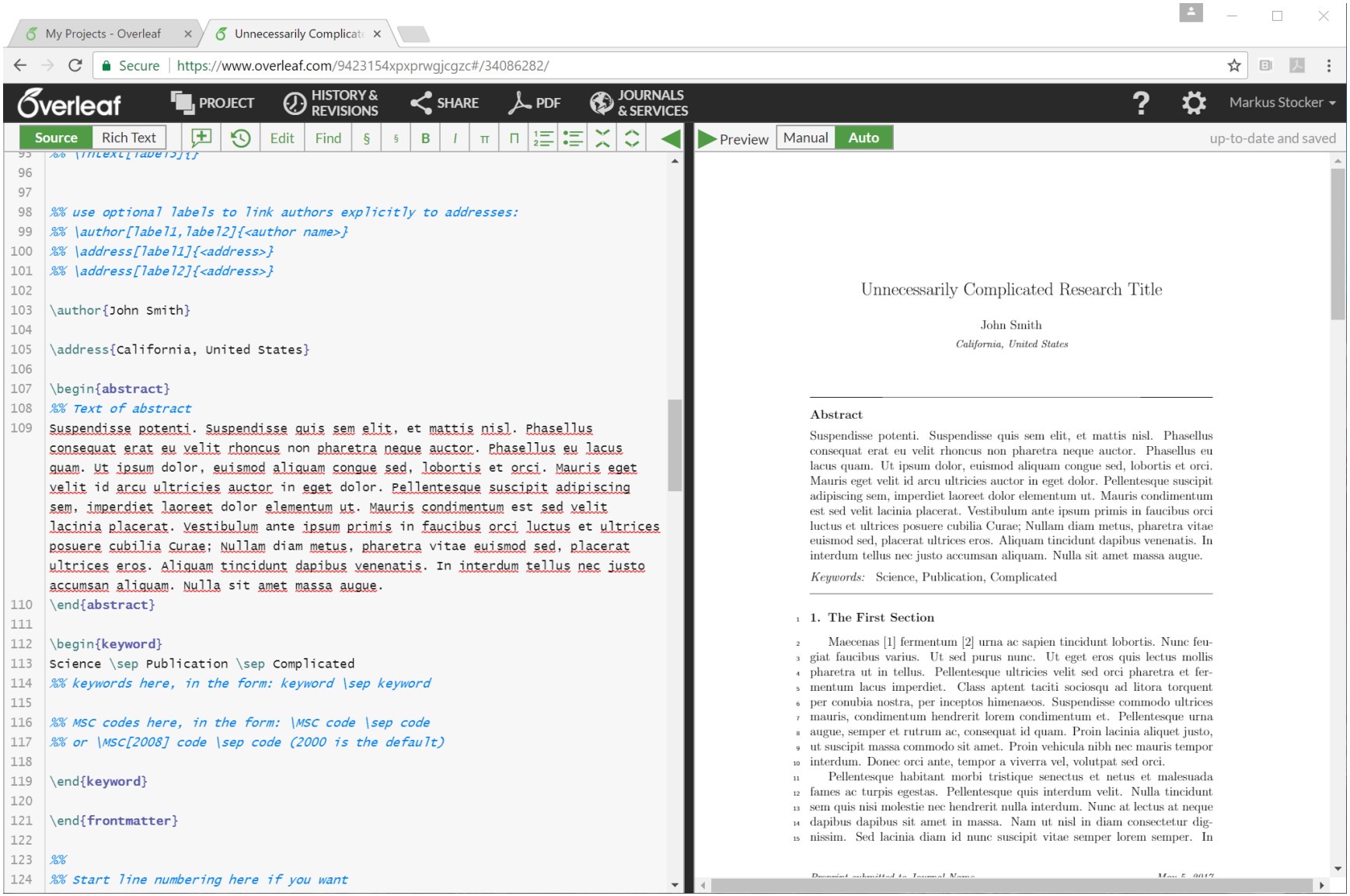
Overleaf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Markus Stocker
Source
Rich Text
Edit
Find
Preview
Manual
Auto
up-to-date and saved
%% use optional labels to link authors explicitly to addresses:
%% \author[label1,label2]{<author name>}
%% \address[label1]{<address>}
%% \address[label2]{<address>}
\author{John Smith}
\address{California, United States}
\begin{abstract}
%% Text of abstract
Suspendisse potenti. Suspendisse quis sem elit, et mattis nisl. Phasellus consequat erat eu velit rhoncus non pharetra neque auctor. Phasellus eu lacus quam. Ut ipsum dolor, euismod aliquam congue sed, lobortis et orci. Mauris eget velit id arcu ultricies auctor in eget dolor. Pellentesque suscipit adipiscing sem, imperdiet laoreet dolor elementum ut. Mauris condimentum est sed velit lacinia placerat. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Nullam diam metus, pharetra vitae euismod sed, placerat ultrices eros. Aliquam tincidunt dapibus venenatis. In interdum tellus nec justo accumsan aliquam. Nulla sit amet massa augue.
\end{abstract}
\begin{keyword}
Science \sep Publication \sep Complicated
%% keywords here, in the form: keyword \sep keyword
%% MSC codes here, in the form: \MSC code \sep code
%% or \MSC[2008] code \sep code (2000 is the default)
\end{keyword}
\end{frontmatter}
%%
%% Start line numbering here if you want
Unnecessarily Complicated Research Title
John Smith
California, United States
Abstract
Suspendisse potenti. Suspendisse quis sem elit, et mattis nisl. Phasellus consequat erat eu velit rhoncus non pharetra neque auctor. Phasellus eu lacus quam. Ut ipsum dolor, euismod aliquam congue sed, lobortis et orci. Mauris eget velit id arcu ultricies auctor in eget dolor. Pellentesque suscipit adipiscing sem, imperdiet laoreet dolor elementum ut. Mauris condimentum est sed velit lacinia placerat. Vestibulum ante ipsum primis in faucibus orci luctus et ultrices posuere cubilia Curae; Nullam diam metus, pharetra vitae euismod sed, placerat ultrices eros. Aliquam tincidunt dapibus venenatis. In interdum tellus nec justo accumsan aliquam. Nulla sit amet massa augue.
Keywords: Science, Publication, Complicated
1. The First Section
Maecenas [1] fermentum [2] urna ac sapien tincidunt lobortis. Nunc feugiat faucibus varius. Ut sed purus nunc. Ut eget eros quis lectus mollis pharetra ut in tellus. Pellentesque ultricies velit sed orci pharetra et fermentum lacus imperdiet. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Suspendisse commodo ultrices mauris, condimentum hendrerit lorem condimentum et. Pellentesque urna augue, semper et rutrum ac, consequat id quam. Proin lacinia aliquet justo, ut suscipit massa commodo sit amet. Proin vehicula nibh nec mauris tempor interdum. Donec orci ante, tempor a viverra vel, volutpat sed orci.
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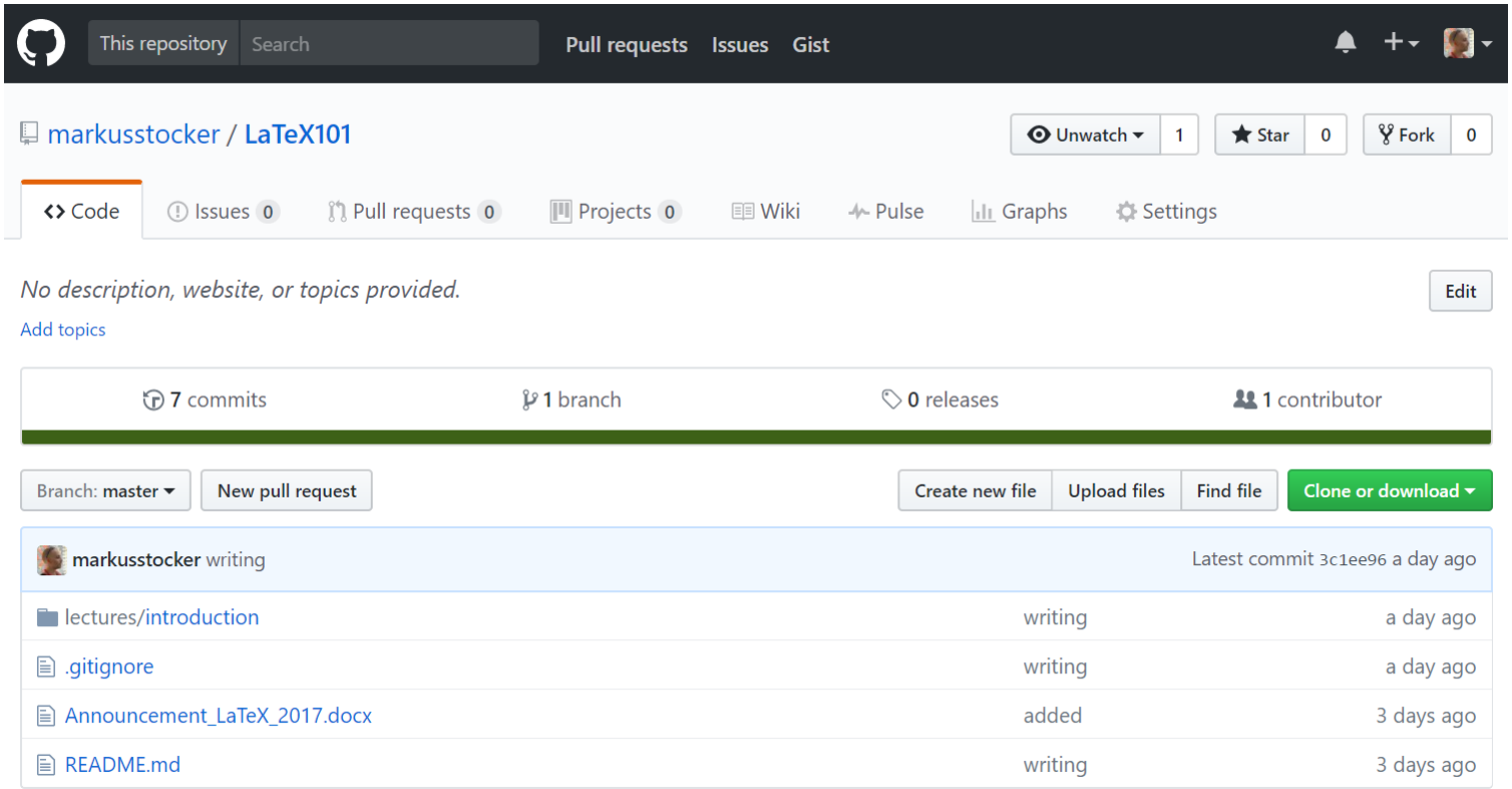
Git

- One of many version control systems
- Supports tracking changes and coordinating work on files
- Primarily used for software development
- Great for collaborative writing with LaTeX
- Choose an online Git repository, e.g. GitHub, Bitbucket
- Working against online repository
  - Enables collaborative writing
  - Ensures you have a backup
  - Facilitates work at the office, home, coffee shop, ...
- Very powerful approach
- As for LaTeX, basics are relatively easy, details more intricate

Git



https://github.com/markusstocker/LaTeX101

Basic Git commands

- `git clone`: Clone remote repository in local environment
- `git status`: Check what has changed
- `git add`: Add files to the local repository
- `git commit`: Record changes to local repository
- `git push`: Push changes to remote repository
- `git pull`: Fetch changes from remote repositorys

Take aways

- You need time to learn LaTeX and other presented tools
- Practice, the basics are relatively straightforward
- The optimal approach ultimately depends on your needs
- Needs are typically different between projects
- For most problems there is an answer online