

Introduction to L^AT_EX

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Modelling for Combinatorial Optimisation (course 1DL451)
&
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What is \LaTeX ? [1]

- It is a macro package based on \TeX [2].
- Its purpose is to simplify \TeX typesetting, especially for documents containing mathematical formulae.
- Its document processing is essentially programming: you create a text file in \LaTeX markup and the \LaTeX compiler reads this in order to produce the final document.
- It is widely used in academia.

A First Document

```
\documentclass[12pt]{article}
\newcommand{\Editor}{\textbf{emacs}} % define macros!

\title{A Sample \LaTeX\ Report} % used by \maketitle
\author{Frej Knutar Lewander} % used by \maketitle
\date{\today} % used by \maketitle

\begin{document}
\maketitle % generates the title page

\section{Revisiting $n$-Queens}
I typed this file with a plain-text editor.
(I used \Editor.)

\end{document}
```

A First Document: Result of Compilation

A Sample L^AT_EX Report

Frej Knutar Lewander

August 23, 2021

1 Revisiting n -Queens

I typed this file with a plain-text editor. (I used **emacs**.)

A Table in \LaTeX (from the Demo Report)

```
\begin{tabular}{rrrrrrrrrrrr} % right [r] for decimal-point alignment  
  \input{res-M4CO.tex}  
\end{tabular}
```


A Table in L^AT_EX: Result of Compilation

Backend	Gecode		CP-SAT		Gurobi		Yuck		PicatSAT	
n	obj	time	obj	time	obj	time	obj	time	obj	time
3	20	422	20	954	20	1268	20	t/o	20	1262
4	34	372	34	680	34	1210	34	t/o	34	8297
5	26	68100	26	t/o	26	46645	36	t/o	27	t/o
6	—	t/o	—	t/o	26	65681	—	t/o	39	t/o

The Demo Report

- The course website has a \LaTeX demo source file with the imposed structure for the assignment & project reports, and with indications on how to proceed.
USE IT! It saves your time and our time.
- You focus on the **content** in order to generate a professional-looking document **without** thinking about formatting.
- We will **not** accept reports spread over multiple PDF files:
write into separate files and use `\input{filename}`.
- You can share-edit using Overleaf.

Online Resources

- Download \LaTeX : <https://www.latex-project.org/get>
- General help: <https://en.wikibooks.org/wiki/LaTeX>
- Detexify: \LaTeX handwritten symbol recognition
<https://detexify.kirelabs.org/classify.html>
- Two of the best websites to find answers to \LaTeX questions are
<https://tex.stackexchange.com> and
<https://stackoverflow.com/questions>
- Share editing: <https://www.overleaf.com>
- Demo source file:
<https://pierre-flener.github.io/courses/COCP/demoReport>

References

- [1] LaTeX. \LaTeX . <https://en.wikipedia.org/wiki/LaTeX>.
- [2] TeX. \TeX . <https://en.wikipedia.org/wiki/TeX>.

Questions?

