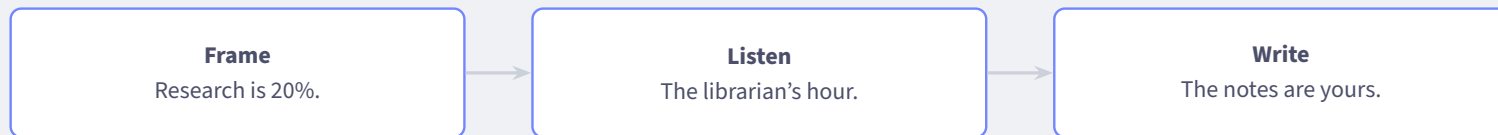


LaTeX and writing mathematics

Week 8. The paper starts here.



This hour

The subject librarian, on finding and judging sources.

Your own time

The LaTeX notes, and the two guides to writing mathematics.

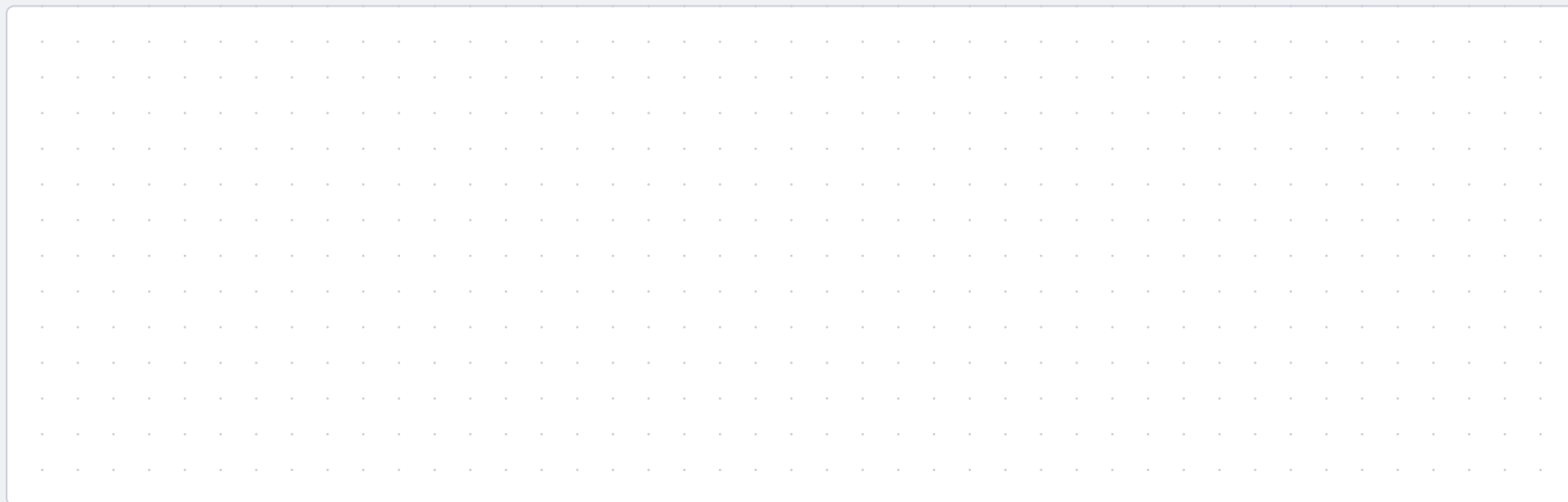
The two halves fit together. The notes teach you how to cite.
This hour is about **what is worth citing**.

State of the field. How does your library compare with the tools that already exist?

References. Is everything that should be cited actually cited, in the text, properly?

Four references the paper argues with beat twenty in a bibliography the body never mentions.

Name three tools that already do something like what your library will do. For each one, say what yours does differently.



‘There is nothing else like it’ is almost never true, and it is the answer that scores worst.

LaTeX

Structure, mathematics, figures, tables, bibliographies.

Modularisation of code

One function doing one thing, and importing a file.

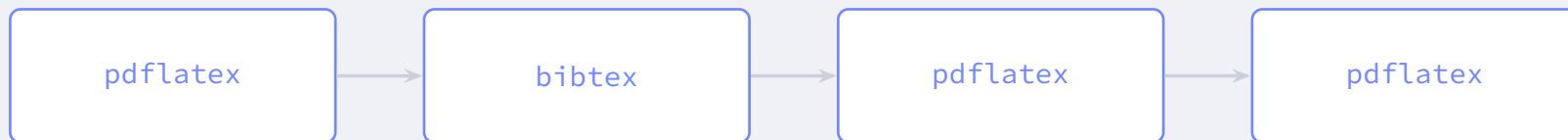
You read these **on your own**. The next five slides are the parts that catch people.

```
\documentclass{article}
\title{A library for ...}
\author{Our group}
\date{\today}
\begin{document}
  Our library solves ...
\end{document}
```

This compiles without an error, and the title is nowhere on the page. Why?



The preamble says what the title is. `\maketitle` is what puts it on the page.



You ran `pdflatex` once and the paper says [?]. Which of these four have you not done?

A large rectangular area with a light gray border, containing a grid of small dots for taking notes.

Overleaf does all four for you. A local build does not. Cross references need the second `pdflatex` too.

`$x^2$`

`\(x^2\)`

“in the picture below”

“in Figure `\ref{tour}`”

The second one is not a matter of taste. What goes wrong?

A figure is a float. LaTeX puts it where it fits, which may not be below anything.

```
def add_tip_and_get_bill_share(total, tip_proportion, number_of_payers):
    tip_amount = tip_proportion * total
    return (total + tip_amount) / number_of_payers
```

You cannot. So how many functions is this, and what are they called?

Small enough to test on its own, and nameable without 'and'. A better rule than counting lines.

```
# tsp.py
```

```
def get_cost(tour, matrix):
```

• • •

```
tour = get_tour(25)
```

```
plot_tour(x, y, tour)
```

Another group types `import tsp` and a figure appears. What

Importing a file runs everything at its top level. Your library holds functions. The code that uses them lives elsewhere, or under `if __name__ == "__main__":`

Week 8 adds a box

Project progress

What has been written, tested or
decided since the last meeting

Rotate the roles

A new **chair** and a new **secretary**
Two meeting weeks have gone. Three are left

Meet this week. Bring the Week 8 minutes to the next session. The third of the five that I is counted from.