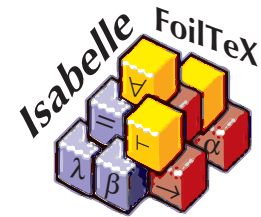


Simple slides with FoilTeX

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Abstract

Isabelle is a formal document preparation system. This example shows how to use it together with FoilT_EX to produce slides in L^AT_EX. See <https://ctan.org/pkg/foiltex> for further information.

Introduction

Some slide

Point 1: ABC

- something
- to say . . .

Point 2: XYZ

- more
- to say . . .

Another slide

Key definitions:

Informal bla bla.

definition $foo = True$ — side remark on $Document.foo$

definition $bar = False$ — side remark on $Document.bar$

lemma foo $\langle proof \rangle$

Application: Cantor's theorem

Informal notes

Cantor's Theorem states that there is no surjection from a set to its powerset. The proof works by diagonalization. E.g. see

- <http://mathworld.wolfram.com/CantorDiagonalMethod.html>
- https://en.wikipedia.org/wiki/Cantor's_diagonal_argument

Formal proof

theorem *Cantor*: $\nexists f :: 'a \Rightarrow 'a \text{ set}. \forall A. \exists x. A = f x$

proof

assume $\exists f :: 'a \Rightarrow 'a \text{ set}. \forall A. \exists x. A = f x$

then obtain $f :: 'a \Rightarrow 'a \text{ set}$ **where** $*$: $\forall A. \exists x. A = f x$..

let $?D = \{x. x \notin f x\}$

from $*$ **obtain** a **where** $?D = f a$ **by** *blast*

moreover have $a \in ?D \longleftrightarrow a \notin f a$ **by** *blast*

ultimately show *False* **by** *blast*

qed

Conclusion

Lorem ipsum dolor

- Lorem ipsum dolor sit amet, consectetur adipiscing elit.
- Donec id ipsum sapien.
- Vivamus malesuada enim nibh, a tristique nisi sodales ac.
- Praesent ut sem consectetur, interdum tellus ac, sodales nulla.