

Submission Example

Gerwin Klein

April 18, 2024

Abstract

This is an example submission to the Archive of Formal Proofs. It shows submission requirements and explains the structure of a simple typical submission.

Contents

1	An Example Submission	1
2	Format of a submission	1
3	Proof styles	2
4	The anatomy of a submission	2

1 An Example Submission

```
theory Submission
  imports Main
begin
```

This is an example submission to the Archive of Formal Proofs.

The scope of the archive encompasses examples, textbook-style proofs, libraries and larger scientific developments.

2 Format of a submission

Submission should be via the web page <https://ci.isabelle.systems/afp-submission/>.

The tar file submission of the example you are reading is at <http://isa-afp.org/release/afp-Example-Submission-current.tar.gz>.

3 Proof styles

We accept proofs in **apply**-script style like the following.

```
lemma true: True
  apply blast
done
```

We encourage structured proofs with comments and explanations. The Isabelle document preparation tools support antiquotations like *True*, normal \LaTeX commands and BibTeX citations. See [1] and the Isabelle documentation for more information.

```
lemma very-true: True
proof —
  — a very roundabout way
  fix P have P  $\longrightarrow$  True by blast
  — to show True
  thus True by blast
qed
```

4 The anatomy of a submission

The directory structure of this example submission is the following

```
Example-Submission/
  document/
    root.tex
    root.bib
  ROOT
  Submission.thy
```

The document directory contains the \LaTeX master file `root.tex` and the bibliography `root.bib`. The \LaTeX part of your submission should contain title, abstract, author, and any further documentation you wish to provide.

`ROOT` controls which theories should be loaded. If you have one main theory that depends on all the others, you only need to include this one. You can also use the `ROOT` file to control the order in which theories are read.

The file `Submission.thy` is the Isabelle theory containing this text. A usual submission has more than one theory file. You can devise your own subdirectory structure if you have more theories and one directory becomes too crowded. You can also build on existing articles in the AFP by importing them. For example, if you build on theory `W` in the article `MiniML`, the way to import it is:

```
theory My_Theory
  imports MiniML.W
begin
```

end

References

- [1] T. Nipkow, L. Paulson, and M. Wenzel. *Isabelle/HOL — A Proof Assistant for Higher-Order Logic*, volume 2283. 2002. <http://www.in.tum.de/~nipkow/LNCS2283/>.