

The `moveproofs` Package

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1 Package Overview

Welcome to the `moveproofs` package, which will let you write your proofs inline with your document, then automatically move them to the appendix. To use the package:

1. Write down and label theorems:

```
\begin{theorem}\label{my_theorem}
  The world is flat.
\end{theorem}
```

2. Prove your theorems using the `\makeproof` command:

```
\makeproof{my_theorem}{
  My worldview does not permit a round Earth.
  Therefore, the world is flat.
}
```

3. Include the `moveproofs` package (`\usepackage{moveproofs}`) and alter its options to choose how proofs are displayed:

- `location = [inline | appendix]`. Controls whether proofs are displayed inline (where you wrote the `\makeproof` command) or in the appendix of the document. This option is required.
- `appendixsectionname = NAME`. Customizes the name of the appendix section in which proofs are displayed ('Proofs' by default).
- `prependtoappendix = [true | false]`. Controls whether proofs are inserted before existing appendix sections or after them (false by default: proofs are inserted at the end of the appendix).
- `manual = [true | false]`. If this option is set to `true` and `location = appendix`, proofs will not automatically be inserted in the appendix. Rather, you can control where proofs are inserted with two commands:
 - `\appendixproofsection{Section Name}`: creates a section in the appendix that appears only if `location = appendix`.
 - `\appendixproof{theorem_label}`: Inserts the proof you wrote inside `\makeproof{theorem_label}` (again, only if `location = appendix`).

4. Use the `\appendixproofnotice[MESSAGE]` command to notify readers that proofs will appear in the appendix. Default text (or the replacement text given in the optional MESSAGE argument) will appear only if `location = appendix`.
5. If you don't want to autowrap each call to `\makeproof` in a proof environment (for example, because you want to state a helper lemma before proving the theorem), use `\makeproof*` and `\appendixproof*` instead of `\makeproof` and `\appendixproof`. Remember, this means you are responsible for inserting `\begin{proof}` and `\end{proof}` commands.

2 Demonstration

The remainder of this document demonstrates the functionality of the `moveproofs` package. Feel free to modify the source to see how the options affect the document's appearance.

First, we use the `\appendixproofnotice` command to notify readers that proofs will appear in the appendix. If `location = appendix`, the notification will appear in bold in the following sentence of this paragraph (boldface is for emphasis, not provided by the command). **Proofs are all in the appendix.**

Now, let's prove some theorems! The `location` package option controls whether the proofs appear inline or in the appendix.

Theorem 1 *For any $\delta \in (0, 1)$, with probability $1 - \delta$, proofs are useful.*

We can also use the `moveproofs` package to prove statements that aren't theorems. Note the reference to the corollary when this proof is moved to the appendix (thanks to the `cleveref` package).

Corollary 2 *For any $\delta \in (0, 1)$, with probability $1 - \delta$, corollaries are useful.*

A Existing Appendix

The `moveproofs` package won't alter existing appendix material. Toggle the `prependtoappendix` option to choose whether proofs are placed before or after the existing appendix. Alternatively, set `manual = true` to turn off automatic proof insertion into the appendix and use the `\appendixproofsection{Section Name}` and `\appendixproof{theorem_label}` commands to manually specify where the proofs should go.

B Our Proofs

B.1 Proof of Theorem 1

Proofs are great! Therefore, we have our result.

B.2 Proof of Theorem 2

Introduction before the actual proof. First, we prove the following lemma:

Lemma 3 *Corollaries apply theorems.*

Proof Corollaries follow theorems, and make claims based on them. ■

Now we are ready to prove our main result: Corollary 2.

Proof By lemma 3, Corollaries apply theorems, and demonstrate new knowledge. Therefore, we have our result. ■