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.
}{Proof title}
```

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.

Also, you can use the callback \appendixprelim to call before the appendix will start.

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 Proofs of the Theorems, Lemmas, and Propositions stated in the paper

B.1 This is the proof of Theorem 1

Proofs are great! Therefore, we have our result.

B.2 Proof of corollary

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. ■