

Fulcrum Package Usage Example

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1 Knowledge Entries

1.1 Color Block Representation

Axiom 1.1 An Axiom

This is a very important axiom.

In principle, there should be very few axioms.

Definition 1.1.1 A Definition

This is the content of the definition.

Property 1.1.1.1 A property of the [above definition](#)

This is a property of the [above definition](#).

Essentially, properties are also theorems. Generally, property entries follow the [definition entry](#) closely, describing properties that can be naturally deduced from the definition, while more important main theorems are represented by the [theorem entry](#).

Example 1.1.1 An Example

This is an example serving the [above definition](#).

Examples are usually added to help readers understand the content of definitions or theorems, and theoretically, removing them does not affect the construction of the main theoretical framework.

Lemma 1.1.2 A lemma serving the [theorem below](#)

This is a lemma prepared for the [theorem below](#).

In formalist practice, we generally do not encourage referencing content that appears after the current entry. But intuitively, this lemma is prepared for the [theorem below](#), so we reference it here.

Theorem 1.1.3 A Theorem

This is a very important theorem.

Proof:

This is a proof of the [above theorem](#).

Corollary 1.1.4 A corollary of the [above theorem](#)

This is a corollary of the [above theorem](#), but it is not independent or important enough to be written as a separate theorem.

Counter Example 1.1.1 A Counterexample

This is a counterexample serving the [above theorem](#).

Counterexamples are usually added to help readers understand why certain constraints must be added to a definition or theorem, and theoretically, removing them does not affect the construction of the main theoretical framework.

Remark 1.1.4.1 This is a remark, used to explain additional information about a certain entry in natural language.

We encourage writing semi-formal mathematical language within the main entries, while using remarks to provide intuitive explanations in natural language.

Problem 1 Write exercises here.

Solution:

Write solutions to the exercises here.

Problem 3 You can reset the exercise counter by providing an optional argument to the `pbm` environment.

2 Lean Language Support

2.1 Code Blocks

Definition 2.1.1 Definition of Cat

Fulcrum is a cat!

```
def Fulcrum : cat := some random cat
```

Use `#tm{...}` to color the declared definition/theorem name.

Theorem 2.1.2 Cat Cute Theorem

All cats are very cute!

```
theorem th_name : ∀ (x : cat), x is very cute! := by sorry
```