

# **Beautiframe**

Beautiful Theorem-Like Environments for Typst

Version 0.1.0

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# 1 Introduction

**Beautiframe** is a Typst package for creating beautiful theorem-like environments (theorems, definitions, lemmas, proofs, etc.) with multiple visual styles.

## 1.1 Features

- **7 distinct styles:** classic, modern, elegant, colorful, boxed, minimal, academic
- **6 variants per style:** prominent, standard, subtle, accent, minimal, inline
- **Flexible mapping:** Assign any variant to any environment type
- **Independent counters:** Each environment type has its own counter
- **Customizable labels:** Change “Theorem” to “Théorème”, “Satz”, etc.
- **QED symbol presets:**  $\square$ ,  $\blacksquare$ ,  $\blacksquare$ , CQFD,
- **Color themes:** Pre-built themes (ocean, forest, sunset, lavender)
- **Language presets:** French, German, Spanish
- **Print-friendly modes:** color, grayscale, black & white

## 1.2 Quick Start

```
#import "@local/beautiframe:0.1.0": *

#theorem(name: "Pythagorean")[
    In a right triangle: $a^2 + b^2 = c^2$
]

#defineinition[
    A *limit* is the value that a function approaches.
]

#proof[
    The proof is left as an exercise.
]
```

## 2 Environments

### 2.1 Available Environments

Beautiframe provides 8 environment types:

Environment	Default Variant	Counter	Usage
theorem	prominent	Optional	Main results
definition	standard	Optional	Foundational concepts
lemma	standard	Optional	Supporting results
proposition	standard	Optional	Secondary results
corollary	standard	Optional	Consequences
remark	subtle	Optional	Commentary
example	accent	Optional	Illustrations
proof	(special)	No	Demonstrations

### 2.2 Basic Usage

Each environment function accepts:

- **name**: Optional name (e.g., “Pythagorean”)
- **number**: `auto` (default), `none`, or custom value
- **body**: The content

```
#theorem(name: "Fermat's Last")[
    There are no positive integers $a$, $b$, $c$ such that
    $a^n + b^n = c^n$ for $n > 2$.
]
```

**Theorem 1** | There are no positive integers  $a, b, c$  such that  $a^n + b^n = c^n$  for  $n > 2$ .  
*Fermat's Last*

### 2.3 Numbering Control

#### 2.3.1 Automatic Numbering (default)

```
#theorem[First theorem] // Theorem 1
#theorem[Second theorem] // Theorem 2
```

#### 2.3.2 No Numbering

```
#theorem(number: none)[Unnumbered theorem]
#defineition(number: none)[Unnumbered definition]
```

**Theorem** | This theorem has no number.

*Example*

#### 2.3.3 Custom Numbering

```
#theorem(number: "A")[Special theorem A]
#theorem(number: "★")[Starred theorem]
```

**Theorem A** | Special theorem A

#### 2.3.4 Numbered Remarks

By default, remarks have no number. To number them:

```
#remark(number: auto)[This remark will be numbered.]
```

Remark 1 | This remark is numbered.

Remark | This remark is not numbered (default).

### 2.3.5 Counter Reset

Reset all counters manually:

```
#beautiframe-reset()
```

## 3 Styles

Beautiframe includes 7 visual styles. Each style provides 6 variants.

### 3.1 Classic Style

Traditional textbook layout with badge on the left and content with left border. Based on the exercise-bank pattern.

```
#beautiframe-setup(style: "classic")
#theorem(name: "Classic")[In a right triangle: $a^2 + b^2 = c^2$]
#defineinition[A continuous function preserves limits.]
#remark[This is the default style.]
```

**Theorem 1** | In a right triangle:  $a^2 + b^2 = c^2$

*Classic*

**Definition 1** | A continuous function preserves limits.

Remark | This is the default style.

### 3.2 Modern Style

Contemporary design with thick accent bars and rule separators.

```
#beautiframe-setup(style: "modern")
#theorem(name: "Modern")[In a right triangle: $a^2 + b^2 = c^2$]
#defineinition[A continuous function preserves limits.]
```

**Theorem 1** — *Modern*

---

In a right triangle:  $a^2 + b^2 = c^2$

### Definition 1

---

A continuous function preserves limits.

### 3.3 Elegant Style

Sophisticated styling with centered headers and decorative ornaments.

```
#beautiframe-setup(style: "elegant")
#theorem(name: "Elegant")[In a right triangle: $a^2 + b^2 = c^2$]
#defineinition[A continuous function preserves limits.]
```

◇ **THEOREM 1** ◇

(*Elegant*)

In a right triangle:  $a^2 + b^2 = c^2$

• DEFINITION 1 •

A continuous function preserves limits.

### 3.4 Colorful Style

Each environment type has a distinct color for visual differentiation.

```
#beautiframe-setup(style: "colorful")
#theorem[Red for theorems.]
#defineinition[Blue for definitions.]
#example[Green for examples.]
```

#### Theorem 1

Red for theorems.

#### Definition 1

Blue for definitions.

#### Example 1

Green for examples.

### 3.5 Boxed Style

Full framed boxes with optional backgrounds and header bars.

```
#beautiframe-setup(style: "boxed", border-radius: 3pt)
#theorem(name: "Boxed")[In a right triangle: $a^2 + b^2 = c^2$]
#defineinition[A continuous function preserves limits.]
```

#### Theorem 1 (*Boxed*)

In a right triangle:  $a^2 + b^2 = c^2$

#### Definition 1

A continuous function preserves limits.

### 3.6 Minimal Style

Ultra-clean, print-friendly. Minimal ink usage.

```
#beautiframe-setup(style: "minimal")
#theorem(name: "Minimal")[In a right triangle: $a^2 + b^2 = c^2$]
#defineinition[A continuous function preserves limits.]
```

**Theorem 1** (*Minimal*).

In a right triangle:  $a^2 + b^2 = c^2$

**Definition 1.** A continuous function preserves limits.

### 3.7 Academic Style

Formal research paper style matching AMS/journal conventions.

```
#beautiframe-setup(style: "academic")
#theorem(name: "Academic")[In a right triangle: $a^2 + b^2 = c^2$]
#defineinition[A continuous function preserves limits.]
```

**THEOREM 1** (*Academic*).

*In a right triangle:*  $a^2 + b^2 = c^2$

**Definition 1.**

A continuous function preserves limits.

## 4 Variants

Each style provides variants that can be assigned to any environment type. The 6 core variants are available in all styles:

Variant	Description	Default for
prominent	Strongest visual emphasis, thick borders, bold colors	theorem
standard	Normal, balanced styling	definition, lemma, proposition, corollary
subtle	Lighter, less prominent, muted colors	remark
accent	Uses environment-specific color	example
minimal	Very light styling, minimal visual elements	—
inline	No structural elements, flows with text	—

**Boxed style** has 3 additional variants:

Variant	Description
titled	Label breaks the top border line (beautitled-style)
centered	Label centered at top, breaking the border
corner	L border (top + left sides)
corner2	Inverted L border (left + bottom sides)

### 4.1 Assigning Variants

Map any variant to any environment type:

```
#beautiframe-setup(
    theorem-variant: "prominent", // Theorems get maximum emphasis
    lemma-variant: "subtle",      // Lemmas are de-emphasized
    remark-variant: "inline",     // Remarks flow inline
    example-variant: "accent",   // Examples use their color
)
```

### 4.2 Visual Gallery: All Variants × All Styles

#### 4.2.1 Classic Style

**Prominent:**

**Theorem 1** | Sample text.

*Name*

**Subtle:**

**Theorem 3** | Sample text.

*Name*

**Minimal:**

**Theorem 5** Sample text.

*Name*

**Standard:**

**Theorem 2** | Sample text.

*Name*

**Accent:**

**Theorem 4** | Sample text.

*Name*

**Inline:**

**Theorem 6** (*Name*). Sample text.

## 4.2.2 Modern Style

Prominent:

**Theorem 1** — *Name*

---

Sample text.

Standard:

**Theorem 2** — *Name*

---

Sample text.

Subtle:

**Theorem 3** — *Name*

Sample text.

Accent:

**Theorem 4** — *Name*

---

Sample text.

Minimal:

**Theorem 5** — *Name*

Sample text.

Inline:

**Theorem 6** — *Name* — Sample text.

### 4.2.3 Elegant Style

Prominent:

Standard:

◊ THEOREM 1 ◊

(Name)

Sample text.

• THEOREM 2 •

(Name)

Sample text.

Subtle:

Accent:

Theorem 3 (Name). Sample text.

★ THEOREM 4 ★

(Name)

Sample text.

Minimal:

Inline:

THEOREM 5

THEOREM 6 (Name). Sample text.

(Name)

Sample text.

#### 4.2.4 Colorful Style

**Prominent:**

**Theorem 1** (*Name*)

Sample text.

**Standard:**

**Theorem 2** (*Name*)

Sample text.

**Subtle:**

**Theorem 3** (*Name*)

Sample text.

**Accent:**

**Theorem 4** (*Name*)

Sample text.

**Minimal:**

**Theorem 5** (*Name*)

Sample text.

**Inline:**

**Theorem 6** (*Name*). Sample text.

#### 4.2.5 Boxed Style

Prominent:

**Theorem 1 (Name)**

Sample text.

Standard:

**Theorem 2 (Name)**

Sample text.

Subtle:

**Theorem 3 (Name)**

Sample text.

Accent:

**Theorem 4 (Name)**

Sample text.

Minimal:

**Theorem 5 (Name)**

Sample text.

Inline:

[**Theorem 6: Name**] Sample text.

Titled:

**Theorem 7 (Name)**

Sample text.

Centered:

**Theorem 8 (Name)**

Sample text.

Corner:

**Theorem 9 (Name)**

Sample text.

Corner2:

**Theorem 10 (Name)**

Sample text.

#### 4.2.6 Minimal Style

**Prominent:**

**Theorem 1** (*Name*).

Sample text.

**Subtle:**

*Theorem 3* (*Name*). Sample text.

**Minimal:**

**Theorem 5.** Sample text.

**Standard:**

**Theorem 2** (*Name*). Sample text.

**Accent:**

**THEOREM 4** (*Name*). Sample text.

**Inline:**

(**Theorem 6:** *Name*) Sample text.

#### 4.2.7 Academic Style

##### Prominent:

**THEOREM 1** (*Name*).

*Sample text.*

##### Subtle:

*Theorem 3* (*Name*). Sample text.

##### Standard:

**Theorem 2** (*Name*).

Sample text.

##### Accent:

---

**THEOREM 4** (*Name*).

*Sample text.*

---

##### Minimal:

**Theorem 5.** Sample text.

##### Inline:

**Theorem 6** (*Name*): Sample text.

## 5 Proofs and QED Symbols

### 5.1 Basic Proof

```
#proof[
  By direct calculation, we have $2^2 = 4$.
]
```

**Proof.** By direct calculation, we have  $2^2 = 4$ . □

### 5.2 QED Symbol Presets

Beautiframe provides several QED symbol presets:

```
#qed-square()      // □ (default)
#qed-filled()     // ■
#qed-tombstone()  // ■
#qed-cqfd()       // CQFD (French)
#qed-slashes()    // //
#qed-text()        // Q.E.D.
#qed-none()        // (no symbol)
```

**Default (□):**

**Proof.** Hollow square.

**Filled (■):**

**Proof.** Filled square. ■

**Tombstone (■):**

CQFD:

**Proof.** Tombstone symbol.

**Proof.** French style. *CQFD*

**Slashes:**

Q.E.D.:

**Proof.** Double slash.

// **Proof.** Latin abbreviation. *Q.E.D.*

### 5.3 Custom QED Symbol

```
#beautiframe-setup(qed-symbol: text(fill: green, sym.checkmark))
```

**Proof.** Custom green checkmark. ✓

## 6 Colors and Themes

### 6.1 Global Colors

```
#beautiframe-setup(
    primary-color: rgb("#1a5276"),
    secondary-color: rgb("#7f8c8d"),
    accent-color: rgb("#2980b9"),
)
```

### 6.2 Per-Environment Colors

Used primarily by the colorful style:

```
#beautiframe-setup(
    theorem-color: rgb("#c0392b"),      // Red
    definition-color: rgb("#2980b9"),    // Blue
    lemma-color: rgb("#8e44ad"),        // Purple
    example-color: rgb("#27ae60"),        // Green
    remark-color: rgb("#7f8c8d"),        // Gray
)
```

### 6.3 Color Themes

Pre-built color schemes:

**Ocean Theme:**

**Theorem**

Blue tones throughout.

**Forest Theme:**

**Theorem**

Green tones throughout.

**Sunset Theme:**

**Theorem**

Warm red and orange tones.

**Lavender Theme:**

**Theorem**

Purple tones throughout.

### 6.4 Print-Friendly Modes

For B&W printing:

```
#beautiframe-setup(color-mode: "color")      // Full color (default)
#beautiframe-setup(color-mode: "grayscale")   // Grayscale
#beautiframe-setup(color-mode: "bw")           // Pure black and white
```

**Color mode:****Theorem**

Full color styling.

**Grayscale mode:****Theorem**

Grayscale for B&W printers.

**B&W mode:****Theorem**

Pure black and white.

## 7 Language Presets

### 7.1 French

```
#preset-french()
```

**Théorème 1** | Dans un triangle rectangle:  $a^2 + b^2 = c^2$

*Pythagore*

□

**Définition 1** | Une fonction continue préserve les limites.

**Preuve.** Immédiat.

### 7.2 German

```
#preset-german()
```

**Satz 1** | In einem rechtwinkligen Dreieck:  $a^2 + b^2 = c^2$

*Pythagoras*

□

**Definition 1** | Eine stetige Funktion erhält Grenzwerte.

**Beweis.** Offensichtlich.

### 7.3 Spanish

```
#preset-spanish()
```

**Teorema 1** | En un triángulo rectángulo:  $a^2 + b^2 = c^2$

*Pitágoras*

□

**Definición 1** | Una función continua preserva límites.

**Demostración.** Inmediato.

### 7.4 Custom Labels

```
#beautiframe-setup(
    theorem-label: "Théorème",
    definition-label: "Définition",
    proof-label: "Démonstration",
)
```

## 8 Layout Configuration

### 8.1 Classic Style Layout

The classic style uses a grid layout with configurable dimensions:

```
#beautiframe-setup(
    line-position: 2cm,      // Distance from left to vertical line
    label-extra: 1cm,        // Extension into left margin
    border-width: 1.5pt,     // Line thickness
)
```

### 8.2 Spacing

```
#beautiframe-setup(
    theorem-above: 1.2em,    // Space before theorems
    theorem-below: 1em,      // Space after theorems
    header-gap: 0.4em,       // Gap between label and body
)
```

### 8.3 Typography

Control label appearance:

```
#beautiframe-setup(
    label-weight: "bold",    // "bold", "regular", "semibold", etc.
    label-size: 11pt,         // Size of "Theorem", "Definition", etc.
    name-style: "italic",    // Style for theorem names: "italic" or "normal"
)
```

**Bold label (default):**

Teorema 1 (*Name*)

Sample text.

**Regular label:**

Teorema 2 (*Name*)

Sample text.

### 8.4 Boxed Style Options

```
#beautiframe-setup(
    inset: (x: 1em, y: 0.8em), // Padding inside boxes
    border-radius: 4pt,        // Rounded corners
    border-width: 1.5pt,       // Border thickness
)
```

## 9 Custom Environments

Create your own environment types with independent counters using `new-env`:

```
// Create custom environments
#let conjecture = new-env("Conjecture", base: "theorem")
#let propriete = new-env("Propriété", base: "definition", numbered: false)
#let formule = new-env("Formule", base: "lemma", color: green)
#let axiom = new-env("Axiom", base: "theorem", numbered: true)
```

```
// Use them like built-in environments
#conjecture[Every even number greater than 2 is the sum of two primes.]
#conjecture(name: "Goldbach") [Famous unsolved problem.]
#propriete[A property without number.]
#formule[The quadratic formula: $x = (-b \plus \minus \sqrt{b^2 - 4a c}) / (2a)$]
```

**Conjecture 1**

Every even number greater than 2 is the sum of two primes.

**Conjecture 2 (*Goldbach*)**

Famous unsolved problem in number theory.

**Axiom 1**

Two points determine a unique line.

## 9.1 Parameters

```
#let my-env = new-env(
  "Label",           // Display label (required)
  base: "theorem",   // Inherit style from: theorem, definition, lemma, etc.
  numbered: true,     // Auto-number by default
  color: none,        // Optional custom color
)
```

## 9.2 Plural Forms

All environments support a `plural` parameter. Default plurals are provided for English and all language presets:

```
#theorem(plural: true) [Multiple theorems grouped together.]
#defineinition(plural: true) [Several related definitions.]
```

**Conjecture 1**

A single theorem.

**Teoremas 2**

Multiple theorems can be grouped in one box.

Language presets automatically set the correct plural forms:

```
#preset-french() // Sets: Théorèmes, Définitions, Lemmes, etc.
#preset-german() // Sets: Sätze, Definitionen, Lemmata, etc.
#preset-spanish() // Sets: Teoremas, Definiciones, Lemas, etc.
```

Custom environments also support plurals:

```
#let conjecture = new-env("Conjecture", plural: "Conjectures", base: "theorem")
#conjecture(plural: true) [Two famous conjectures.]
```

### 9.3 Resetting Custom Counters

```
#reset-env("Conjecture") // Reset specific custom environment  
#beautiframe-reset()      // Reset all built-in counters
```

## 10 API Reference

### 10.1 Environment Functions

```
#theorem(name: none, number: auto)[body]
#definition(name: none, number: auto)[body]
#lemma(name: none, number: auto)[body]
#proposition(name: none, number: auto)[body]
#corollary(name: none, number: auto)[body]
#remark(name: none, number: none)[body]
#example(name: none, number: auto)[body]
#proof[body]
```

### 10.2 Setup Function

```
#beautiframe-setup(
    style: "classic",           // Style selection
    // Variant mapping
    theorem-variant: "prominent",
    definition-variant: "standard",
    lemma-variant: "standard",
    proposition-variant: "standard",
    corollary-variant: "standard",
    remark-variant: "subtle",
    example-variant: "accent",
    // Colors
    primary-color: rgb("#2c3e50"),
    secondary-color: rgb("#7f8c8d"),
    accent-color: rgb("#2980b9"),
    theorem-color: rgb("#c0392b"),
    definition-color: rgb("#2980b9"),
    // ... (more per-environment colors)
    // Typography
    label-size: 11pt,
    label-weight: bold,
    name-style: italic,
    // Spacing
    theorem-above: 1em,
    theorem-below: 0.8em,
    header-gap: 0.3em,
    // Layout
    inset: (x: 0.8em, y: 0.6em),
    border-width: 1pt,
    border-radius: 0pt,
    line-position: 2cm,
    label-extra: 1cm,
    // Numbering
    link-to-section: false,
    // Labels
    theorem-label: "Theorem",
    definition-label: "Definition",
    // ... (more labels)
    proof-label: "Proof",
    // QED
    qed-symbol: sym.square.stroked,
    // Advanced
    breakable: true,
    color-mode: "color",
)
```

### 10.3 Utility Functions

```
#beautiframe-reset()      // Reset all counters

// Language presets
#preset-french()
#preset-german()
#preset-spanish()
```

```
// Color themes
#theme-ocean()
#theme-forest()
#theme-sunset()
#theme-lavender()

// QED presets
#qed-square()      // □
#qed-filled()       // ■
#qed-tombstone()    // ■
#qed-cqfd()         // CQFD
#qed-slashes()      // //
#qed-text()          // Q.E.D.
#qed-none()          // (none)
```