

# XeLaTeX Multilingual Test Document

LaTeX Compiler Workflow

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## 1 Introduction

This document tests XeLaTeX compilation with multiple languages and Unicode support. The workflow automatically detected the need for XeLaTeX based on the `% !TeX program = xelatex` directive.

## 2 European Languages

### 2.1 English

Hello World! This is a test of the XeLaTeX compiler with modern Unicode fonts.

### 2.2 French

Bonjour le monde! Voici un test avec des caractères accentués: é, è, ê, à, ù, ç, œ.

### 2.3 German

Guten Tag! Test mit deutschen Umlauten: ä, ö, ü, ß.

### 2.4 Spanish

¡Hola mundo! Prueba con caracteres especiales: ñ, á, é, í, ó, ú, ¿, ¡.

### 2.5 Portuguese

Olá mundo! Teste com acentuação: ã, õ, â, ê, ô, à, ç.

### 2.6 Italian

Ciao mondo! Test con caratteri accentati: à, è, é, ì, ò, ù.

## 2.7 Russian

Привет мир! Это тест кириллицы: а, б, в, г, д, е, ё, ж, з, и, й, к.

## 2.8 Greek

Γεια σου κόσμε! Ελληνικά γράμματα: α, β, γ, δ, ε, ζ, η, θ, λ, μ, π, σ, ω.

# 3 Middle Eastern Languages

## 3.1 Arabic

العربية. اللغة اختبار هذا بالعالم! مرحبا  
Arabic (right-to-left): العربية

# 4 East Asian Languages

## 4.1 Chinese (Simplified)

你好世界！这是中文测试。汉字：一 二 三 四 五 六 七 八 九 十。

## 4.2 Chinese (Traditional)

你好世界！這是中文測試。漢字：一 二 三 四 五 六 七 八 九 十。

## 4.3 Japanese

こんにちは世界！日本語のテストです。ひらがな、カタカナ、漢字。

## 4.4 Korean

안녕하세요 세계! 한국어 테스트입니다. 한글 문자 테스트.

# 5 Special Characters and Symbols

## 5.1 Mathematical Symbols

Mathematical symbols work naturally:  $x \in \mathbb{R}$ ,  $y \in \mathbb{C}$ ,  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$ ,  $\epsilon$ ,  $\zeta$ ,  $\eta$ ,  $\theta$ ,  $\lambda$ ,  $\mu$ ,  $\pi$ ,  $\sigma$ ,  $\tau$ ,  $\varphi$ ,  $\chi$ ,  $\psi$ ,  $\omega$   
Greek letters:  $\alpha$ ,  $\beta$ ,  $\gamma$ ,  $\delta$ ,  $\epsilon$ ,  $\zeta$ ,  $\eta$ ,  $\theta$ ,  $\lambda$ ,  $\mu$ ,  $\pi$ ,  $\sigma$ ,  $\tau$ ,  $\varphi$ ,  $\chi$ ,  $\psi$ ,  $\omega$

## 5.2 Currency Symbols

Currency symbols: \$, €, £, ¥, ₹, ₪, ₩, ₮

## 5.3 Arrows and Operators

Arrows:  $\rightarrow$ ,  $\leftarrow$ ,  $\leftrightarrow$ ,  $\Rightarrow$ ,  $\Leftarrow$ ,  $\Uparrow$ ,  $\Downarrow$

Operators:  $\neq$ ,  $\approx$ ,  $\pm$ ,  $\times$ ,  $\div$ ,  $\propto$ ,  $\%$

## 5.4 Geometric and Misc Symbols

Shapes:  $\square$ ,  $\triangle$ ,  $\diamond$ ,  $\circ$ ,  $\bullet$ ,  $\star$ ,  $\heartsuit$ ,  $\clubsuit$

Stars:  $\star$ ,  $\star$ ,  $\star$ ,  $\star$

Punctuation:  $\bullet$ ,  $\cdot$ ,  $\triangleright$ ,  $-$

# 6 Typography Features

## 6.1 Ligatures

XeLaTeX handles ligatures automatically:  $\mathrm{fi}$ ,  $\mathrm{fl}$ ,  $\mathrm{ff}$ ,  $\mathrm{ffi}$ ,  $\mathrm{ffl}$ ,  $\mathrm{fj}$

The word "office" shows the  $\mathrm{ffi}$  ligature.

## 6.2 Quotation Marks

Different quotation mark styles:

English: "double quotes" and 'single quotes'

French: « guillemets français »

German: „deutsche Anführungszeichen“

## 6.3 Dashes

Different dash types:

Hyphen: word-word

En-dash: pages 10–20

Em-dash: A sentence—with emphasis

## 6.4 Spacing

Ellipsis: dots... versus proper ellipsis...

Non-breaking space: Mr. Smith (no line break)

# 7 Font Styles

## 7.1 Weight and Style

**Bold text** demonstrates font weight.

*Italic text* shows slanted characters.

***Bold italic*** combines both styles.

## 7.2 Sans Serif

This is sans-serif text using Noto Sans.  
**Bold sans-serif** and *italic sans-serif*.

## 7.3 Monospace

This is monospace text using Noto Sans Mono.  
Code example: `if (x == 0) { return true; }`

## 8 Color Support

XeLaTeX with xcolor package:  
**Red text**, **blue text**, **green text**.  
**Orange**, **purple**, **cyan**.  
Combined: **bold red text** and *italic blue text*.

## 9 Mixed Scripts in One Line

English, Français, Deutsch, Español all together.  
Latin with Greek: The symbol  $\pi$  (pi) represents 3.14159...  
Numbers in different scripts: 123 (Western), 一二三 (Chinese)

## 10 Conclusion

If this document compiled successfully, it demonstrates:

1. **Compiler Detection:** The workflow detected XeLaTeX from the % !TeX program directive
2. **Font Installation:** Noto fonts were automatically installed
3. **Unicode Support:** Full Unicode character rendering works
4. **Multilingual:** Latin, Cyrillic, Greek, Arabic, and CJK scripts all render correctly
5. **Typography:** Ligatures, proper dashes, and quotation marks function properly
6. **OpenType Features:** Modern font features are available

**Success!** The LaTeX compiler workflow correctly handled:

- Multi-document support with smart change detection
- Automatic compiler detection (pdflatex/xelatex/lualatex)

- On-demand installation of compilers and fonts
- Efficient caching for subsequent runs

This test document validates that the workflow is production-ready for complex multilingual documents.