

IMPE ~~La~~T_EX System

User Manual

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English reference edition

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1 Introduction

The IMPE $\text{\LaTeX}$ System is a modular $\text{Xe}\text{\LaTeX}$ framework for reusable layouts, font routing, multilingual typesetting, and optional document features.

IMPE addresses this by separating the system into reusable parts. From the user’s point of view, the most important distinction is between *layouts*, *fonts*, and *features*. A layout describes the principal visual organization of a document. Font families provide global or local font behavior, including script-aware routing where necessary. Features provide optional functionality such as mathematics, hyperlinks, citations, tables, or images. These parts can be selected independently or combined through one unified template interface.

The normal use of IMPE is intentionally short. A wrapper class can establish a sensible document layout and a default global font setup, after which a user loads only the additional families or features required by the document. When more explicit control is wanted, the same components can be declared in a single `\UseTemplateSet` call.

$\text{Xe}\text{\LaTeX}$ is the primary document engine for IMPE. This choice allows the system to rely on Unicode text, OpenType fonts, `fontspec`, and $\text{Xe}\text{\LaTeX}$ ’s inter-character mechanisms while retaining the familiar $\text{\LaTeX}$ document model. Some specialized internal routes may invoke other engines where a particular script or renderer requires them, but ordinary IMPE documents are intended to be compiled with $\text{Xe}\text{\LaTeX}$.

This manual is a user-oriented introduction rather than an exhaustive API reference. Detailed subsystem documentation is maintained separately in the repository under `docs/`. In particular, the font, layout, feature, and system documents describe registration fields and implementation details that would be unnecessarily repetitive here. This English manual is the reference edition: translated manuals should follow its structure and technical content.

A visual survey of the system is available in the project showcase at the current IMPE showcase PDF. The edition frozen with this manual is available from the version tag. That canonical repository PDF is also reproduced in Appendix B. It is intended to demonstrate the range of scripts, writing directions, layouts, and feature combinations that motivated the system.

2 Installation

2.1 Distribution forms

IMPE is prepared in three distribution forms, each intended for a different use case.

The *CTAN-oriented distribution* contains the portable runtime and public documentation without the private or locally maintained font library. This is the `impe-framework.zip` archive, rooted at `impe-framework/`, and is intended for standard $\text{\TeX}$ distribution. It contains only canonical `impe*` entries. The *core distribution* contains the same system logic for users who prefer to install IMPE directly from a release and manage fonts separately. The *full distribution* may add a prepared local font library, subject to the redistribution status of the individual fonts.

The distinction is deliberate. IMPE itself is a document system; a large font collection is not part of the logical core of the package. Keeping the two separate makes the runtime portable and allows different machines or users to supply different font libraries without modifying the framework.

2.2 Installed location

A direct installation places the package in the user's $\text{\TeX}$ MF tree under

```
tex/latex/impe/
```

so that the package and wrapper classes are available through the normal $\text{\TeX}$ search path. The canonical public entries are

```
impe.sty
impeart.cls
impebook.cls
impereport.cls
impebeamer.cls
```

with corresponding `_zh` wrapper classes for Chinese-oriented document defaults. Direct GitHub full and core releases also install the earlier `next*` compatibility entries; the CTAN `impe-framework` distribution contains only the canonical entries and no compatibility files. See Section 9.

When using a direct IMPE release, the supplied installer can be used to copy the runtime into the user TEXMF tree. A release archive may provide the usual Windows entry point

```
install.bat
```

The launcher delegates to `install.ps1`; advanced callers may invoke that script with their host’s normal script runner.

Users installing through a T_EX distribution do not need the repository-side installer; package discovery is handled by the T_EX distribution in the usual way.

2.3 Font resources and local configuration

The source repository does not track the full local font library. In a local or full installation, catalogued font files are normally resolved below an `assets/fonts/` root. A different location can be selected without editing the package itself.

The preferred persistent mechanism is `impe.local.tex`. A local setup may, for example, contain

```
\SetCatalogFontRoot{D:/Fonts/IMPE}
```

with the path adjusted to the local machine. The same command can also be used from a document when a one-off override is more appropriate. Core and CTAN installations remain usable without a private font collection; only document features that request unavailable local font files will, naturally, require those resources to be supplied.

2.4 A quick installation check

After installation, the following file should compile with X_YL^AT_EX on a system with Libertinus available:

```
\documentclass{impeart}  
\UseFont{libertinus}
```

```

\begin{document}
\LIB{IMPE is ready.}
\end{document}

```

If this succeeds, the canonical wrapper class, package entry, and automatic font-loading interface are visible to $\text{\TeX}$.

3 Quick Start

The simplest IMPE workflow is to choose a wrapper class, select any desired font family or feature, and write the document normally. IMPE does not replace ordinary $\text{\LaTeX}$ document structure; it provides a reusable setup layer around it.

A small article can therefore look like this:

```

\documentclass[11pt]{impeart}

\UseFont{libertinus}
\UseFeatures{math,hyperlinks}

\title{A Sample Document}
\subtitle{Typeset with IMPE}
\author{Author Name}

\begin{document}

\maketitle

\section{Introduction}
\LIB{Hello, world.}

\end{document}

```

The class already supplies the normal English article layout and base font. The mode-free `\UseFont{libertinus}` call follows that family’s registered automatic behavior, applying its global stack and making its local `\LIB` command available, while `\UseFeatures` activates two optional feature modules. The rest is ordinary $\text{\LaTeX}$.

For a document whose setup is better expressed as a single declaration, the same idea can be written through `\UseTemplateSet`:

```
\documentclass{impeart}

\UseTemplateSet{
  fonts = {libertinus},
  features = {math,hyperlinks}
}
```

A template set may also choose a layout and additional font families. In practice, wrapper classes already supply a suitable default layout, so most documents only state the settings that differ from those defaults.

IMPE can also be loaded as a package underneath a standard $\text{\LaTeX}$ class:

```
\documentclass{article}
\usepackage{impe}

\UseTemplateSet{
  layout = en_doc,
  fonts = {cmu,libertinus},
  features = {hyperlinks}
}
```

This form is useful when the underlying class must remain explicit or when every IMPE component should be selected manually. The wrapper classes and the raw package use the same underlying system.

4 Ready-to-use Templates

The repository includes a small collection of starter projects under `templates/`. These are intended for actual writing rather than for regression testing or internal demonstration.

The current starter templates are:

article_en/ English article starter using `impeart`.

article_zh/ Chinese article starter using `impeart_zh`.

book_en/ English book starter using `impebook`.

book_zh/ Chinese book starter using `impebook_zh`.

beamer_en/ English presentation starter using `impebeamer`.

beamer_zh/ Chinese presentation starter using `impebeamer_zh`.

Each template follows the installed-package style and contains realistic metadata, sectioning, and body structure, together with representative table, figure, or slide material where appropriate. A new project can therefore begin by copying the nearest template directory and editing the document contents instead of reconstructing a preamble from scratch.

The templates deliberately use the canonical `impe*` entry points and show normal user-facing practice. Development-only fixtures live under `tests/`.

5 Document Classes and Public Entry Points

5.1 Wrapper classes

IMPE provides wrapper classes for the four principal document forms used by the system:

impeart English-oriented article wrapper. Its normal layout is `en_doc` and its default global family is `cmu`.

impebook English-oriented book wrapper. Its normal layout is `en_book` and its default global family is `cmu`.

impereport English-oriented report wrapper. It uses the `en_doc` layout and `cmu` by default.

impebeamer Presentation wrapper. It selects the `beamer` layout and `cmu` by default.

Chinese-oriented counterparts are provided as `impeart_zh`, `impebook_zh`, `impereport_zh`, and `impebeamer_zh`. These select the corresponding Chinese document settings and include `shanggu` in the default global font configuration alongside `cmu`. The distinction is a default configuration, not a restriction on what languages may appear in the document.

Unknown class options are passed through to the underlying standard class. A normal option such as

```
\documentclass[12pt,twoside]{impeart}
```

therefore continues to control the underlying `article` class in the usual way.

5.2 Using `impe.sty` directly

The wrapper classes are conveniences rather than separate implementations. A user may instead keep a standard class and load

```
\usepackage{impe}
```

followed by an explicit layout, font, and feature configuration. This is the recommended route when the document class is supplied by a journal, publisher, or another package and should not be replaced by an IMPE wrapper.

5.3 Titles and subtitles

IMPE supports `\subtitle{...}` alongside the standard `\title` and `\author` commands. Wrapper classes apply their own title-block defaults, while the ordinary $\TeX$ title mechanism remains recognizable. A typical preamble is simply

```
\title{Main Title}
\subtitle{A More Specific Description}
\author{Author Name}
```

followed by `\maketitle` in the document body.

6 The Template Model

6.1 Four setup keys

The principal unified command is `\UseTemplateSet`. Its public setup model is intentionally small:

```
\UseTemplateSet{
  layout = <preset>,
  fonts = {<families>},
  globalfonts = {<families>},
  features = {<features>}
}
```

The four keys have different roles.

layout selects a public layout preset appropriate to the active document class.

fonts loads families through their registered automatic behavior. This is the normal choice: a family may define a local command, apply a document-wide font, or install range-specific routing.

globalfonts explicitly forces the listed families through their global mode or global routing path.

features loads optional functional modules.

mainfonts is accepted as an alias of **globalfonts**; both keys are explicit global overrides rather than the normal automatic interface.

The template interface is not a requirement that every document declare all four keys. Its purpose is to provide one predictable place where a complete configuration *can* be expressed. Wrapper classes already apply their own layout and global-font defaults; specifying only an additional feature list is therefore perfectly normal.

6.2 Single-purpose shortcuts

For documents that do not need a full template declaration, IMPE provides public shortcuts corresponding to the individual subsystems:

```
\UseLayout{en_doc}
```

```
\UseLayouts{...}
```

```
\UseFont{libertinus}
```

```
\UseFonts{arabic,tibetan}
```

```
\UseFont{libertinus}[global]
```

```
\UseLocalFonts{arabic,tibetan} % explicit local override
```

```
\UseGlobalFonts{libertinus}    % explicit global override
```

```
\UseFeature{hyperlinks}
```

```
\UseFeatures{math,hyperlinks,tables}
```

The mode-free font forms are the recommended shortcuts for ordinary use. The local and global aliases remain useful when a document intentionally overrides a family's registered

behavior. The unified and single-purpose interfaces are two views of the same public model rather than competing configuration systems.

6.3 Composition instead of monolithic templates

An IMPE template is deliberately not one indivisible style file. A layout can be reused with different font choices, the same feature set can be used in an article or book, and a script-specific font family can be added without changing unrelated document functionality. This composition is the central design principle behind the public interface.

For example, the following declarations describe two quite different documents without requiring two unrelated preamble templates:

```
% English article
\UseTemplateSet{
  layout = en_doc,
  fonts = {libertinus},
  features = {math,hyperlinks}
}

% Chinese book with additional script support
\UseTemplateSet{
  layout = zh_book,
  fonts = {cmu,shanggu,sanskrit,tibetan},
  features = {citations,index,hyperlinks}
}
```

The second example only states the families and features it needs; the internal font and layout subsystems remain responsible for the implementation details.

7 Fonts, Script Routing, and Multilingual Typesetting

7.1 Font families as registered capabilities

IMPE does not treat a font name as merely a replacement for `\rmfamily`. Font families are registered in a central catalog with the information needed to use them correctly: available faces, paths or system font names, OpenType script and language settings, local command

metadata, global routing behavior, and, where necessary, a specialized layout or rendering route.

This model allows a simple Latin family and a complex-script family to share the same public loading interface even when their internal requirements are very different. The common abstraction is the *registered family*, not a claim that every writing system is implemented identically.

7.2 Automatic, global, and local loading

For ordinary use, load a family without a mode. IMPE then follows the family’s registered behavior, which may be local, global, or range-specific. The `fonts` template key applies the same automatic rule to a list.

A *global* family participates in document-wide font selection. For a normal Latin family this can mean replacing the main roman, sans-serif, and monospaced channels. For a script-specific family it can instead mean taking responsibility only for selected Unicode ranges while leaving Latin, Han, and other scripts untouched.

A *local* family is loaded for explicit use. Local selection is useful when a particular passage requires a specific script font, a regional glyph form, or an editorially chosen typeface without changing the document-wide routing.

Families are loaded through, for example,

```
\UseFont{libertinus}
\UseFonts{sanskrit,tibetan,arabic}

\UseFont{libertinus}[global]    % deliberate global override
\UseLocalFonts{sanskrit}       % deliberate local override
```

or through the corresponding keys in `\UseTemplateSet`. The `\UseGlobalFont(s)` and `\UseLocalFont(s)` aliases are explicit overrides, not the default recommendation. Public commands created for individual local families are defined by their catalog registrations; the complete list belongs in the font reference rather than in this introductory manual.

When an explicit local font command is active, it takes precedence over the automatic global range router within that scope. Leaving the local scope restores the global routing state. This makes explicit authorial choice predictable even in a document with extensive automatic script selection.

7.3 Unicode-range routing

Some global families are intentionally range-limited. A Devanagari family, for example, need not become the Latin main font simply because it is loaded globally. IMPE can assign such a family only to the Unicode blocks for which it is responsible. Multiple registered families can therefore coexist in one document without continually replacing one another's text.

This routing is most useful for genuinely multilingual prose: the author writes Unicode text normally, while IMPE selects the active registered family when the text enters a configured script range. Range routing is an aid to font selection; shaping remains the responsibility of $\text{\TeX}$, `fontspec`, and the OpenType data associated with the selected family.

7.4 CJK handling

CJK fonts require a somewhat different route from ordinary Unicode-range switching. IMPE uses the `xeCJK` path for CJK global families, allowing the main, sans-serif, and monospaced CJK channels to be managed as CJK fonts rather than as a collection of isolated character switches.

Shared Han ideographs create an additional problem: Unicode alone does not say whether a Han character in a particular context should use Chinese, Japanese, or Korean regional glyph conventions. Automatic routing therefore gives language-specific scripts such as kana and Hangul their own claims while leaving shared Han characters on the document CJK family. When an explicitly Japanese or Korean Han form is required, a local family command can be used to make that choice directly.

This distinction is intentional. Automatic routing should make the common case convenient without pretending that ambiguous Han characters contain language information which Unicode does not provide.

7.5 Shaping and line breaking

OpenType shaping for ordinary complex scripts is expressed through the registered script, language, and feature settings of a family. Indic, Arabic, and other shaping-sensitive scripts therefore remain ordinary Unicode text at the document level; IMPE supplies the font configuration needed for the text engine to shape them correctly.

Some scripts also need line-breaking behavior that is not adequately described by ordinary spaces. IMPE includes script-aware handling for cases such as Sanskrit in Devanagari, Tibetan, and Thai. The purpose is not to replace the language's orthography with manual

break markers, but to let the font and behavior layers provide appropriate opportunities while preserving clusters or script-specific punctuation rules.

Right-to-left behavior is likewise attached to families that require it. The public font model remains the same even though the underlying paragraph or inline behavior differs from a left-to-right Latin family.

7.6 Vertical and externalized rendering

A small number of writing systems need more than standard horizontal OpenType shaping. IMPE therefore includes a built-in vertical layout route used by registered vertical families, and it provides an externalized rendering path for cases where a fragment is more reliably produced as a small auxiliary $\text{\TeX}$ document and reinserted as PDF.

Externalized rendering is implemented through a portable `texlua` helper. The helper resolves the requested $\text{\TeX}$ engine from the system PATH, renders into an IMPE cache directory, and returns the resulting PDF to the main document. The mechanism is kept behind the font registration layer so that a normal document does not need to manage temporary files or engine paths manually.

These specialized routes are exceptions at the implementation level, not at the user-interface level. They exist precisely so that the public font model can remain coherent when a script cannot be handled by a simple `\newfontfamily` declaration.

7.7 Where to find the complete font reference

The detailed family catalog, registration syntax, style fallback rules, global routing model, vertical parameters, externalized backend, and script-specific notes are maintained in `docs/FONTS.md`. Users adding a new family or investigating font-routing behavior should treat that document as the technical reference.

8 Layouts and Features

8.1 Layout presets

Layouts describe document-level presentation. A public layout preset is a structured bundle of page geometry, text spacing, header behavior, book behavior, or slide behavior. The individual low-level components are internal; normal documents select the public preset as a whole.

The public presets in IMPE 1.0.1 are:

en_doc English article/report layout.

zh_doc Chinese article/report layout.

en_book English book/report layout with book-oriented page and running-head behavior.

zh_book Chinese book/report counterpart.

beamer presentation layout for Beamer documents.

Presets declare which underlying document classes they support. IMPE checks that compatibility before applying the preset, so a slide layout is not silently applied to an article or vice versa.

Wrapper classes select the corresponding layout automatically. Explicit selection is useful with raw standard classes or when a report should use a book-oriented preset:

```
\UseLayout{en_book}
```

The exact component values and geometry are documented in `docs/LAYOUTS.md`.

8.2 Feature modules

Features are flat, composable modules. Unlike layouts, they do not have a second preset layer. A feature id simply loads the corresponding optional functionality the first time it is requested; repeated requests are ignored.

The public feature set currently consists of:

math standard mathematics packages, theorem environments, and optional math-font selection.

hyperlinks hyperlinks, PDF bookmarks, stable destinations, and repository hyperlink defaults.

citations biblatex/biber citation support with selectable citation-style presets.

index index generation and IMPE term/index helpers.

tables table packages, reusable column types, and table environments.

image figure, image, and multi-panel helpers.

lists_envs reusable example-block formatting.

headers configurable running heads for article-, report-, and book-like documents.

A document loads any combination it requires:

```
\UseFeatures{math,hyperlinks,tables,image}
```

or

```
\UseTemplateSet{
  features = {citations,index,hyperlinks}
}
```

8.3 Mathematics

The `math` feature loads the standard AMS-oriented mathematics stack and defines theorem-like environments including `theorem`, `lemma`, `proposition`, `corollary`, `definition`, `example`, and `remark`. Loading a text family does not by itself force a new math alphabet: Computer Modern mathematics remains the default unless an explicit math route is selected.

A different math family can be selected before the feature is loaded. For example,

```
\UseMathFont{libertinus}
\UseFeature{math}
```

uses Libertinus Math through `unicode-math`. Other supported routes and the exact package stack are listed in `docs/FEATURES.md`.

8.4 Citations, indexes, tables, and figures

The feature modules are designed to provide useful defaults without hiding the underlying $\text{\LaTeX}$ ecosystem. The `citations` feature, for example, uses `biblatex` and `biber`; documents still use ordinary commands such as `\addbibresource`, `\textcite`, and `\printbibliography`. Citation presets such as APA, GB/T 7714, numeric, or author–year may be selected before the feature is loaded.

The `index` feature builds on `imakeidx` and adds the `\Term` helper for typesetting and indexing a term together. The `tables` and `image` features similarly provide convenient higher-level environments while leaving native `booktabs`, `graphicx`, and related commands available.

This is the intended balance throughout the feature system: IMPE should reduce repetitive setup, not create a private replacement language for ordinary $\text{\LaTeX}$.

8.5 Headers and hyperlinks

The `headers` feature supplies running heads through `fancyhdr`. By default it derives a fixed running title from the first line of `\title`; `\HeaderTitle{...}` can be used when a shorter form is preferable. Article-like documents use section information for the moving head, while report- and book-like documents use chapter information.

The `hyperlinks` feature loads `hyperref` and `bookmark` with Unicode-aware PDF settings, hidden link borders, linked table-of-contents structures, and stable destinations. Documents may still use ordinary `\label`, `\ref`, `\href`, and `\url` commands.

For the full list of feature-specific commands and environments, consult `docs/FEATURES.md` rather than treating this section as an API catalog.

9 Compatibility and Migration

IMPE 1.0.1 establishes the `impe*` names as the canonical public interface. New documents should therefore use `impe.sty`, `impeart`, `impebook`, `impereport`, `impebeamer`, and their Chinese variants.

Earlier development releases used the `next*` naming scheme. Those entry points remain supported compatibility wrappers in 1.0.1; they are not deprecated in this release. Existing documents that load the `nextart` class or `nextsystem` package continue to compile against the same underlying implementation. The compatibility layer exists to preserve old documents, not to define a parallel set of APIs for new work.

The direct installer also recognizes a managed installation from the 0.1.x series under `tex/latex/nextsystem/`. During migration it installs the canonical runtime under `tex/latex/impe/`, migrates recognized local override files when appropriate, removes files known to belong to the old managed runtime, and leaves unrelated user-created files or subdirectories in place.

A legacy `nextsystem.local.tex` can therefore survive migration without requiring the old generic runtime filenames to remain visible in the TEXMF tree. New local configuration should use `impe.local.tex`.

No source-level conversion is required merely because a document was written with the old wrapper names. Authors may update those names when convenient, but compatibility is intentionally a runtime concern rather than a forced migration of every existing document.

10 Package Structure and Extension Points

The repository separates public entry points, stable mechanisms, registrations, specialized implementations, and local resources:

package/	public package and class entry points
core/	stable subsystem mechanisms
catalog/	public ids and registration data
modules/	extendable or specialized implementations
assets/	local runtime resources such as fonts
scripts/	installation and release tooling
manual/	manual sources
docs/	detailed subsystem documentation

10.1 The stable core

The `core/` layer contains the framework that should not have to change whenever a new font family, layout preset, or feature is added. It implements the font registry and routing machinery, the layout registry and compatibility checks, the feature loader, and related shared behavior.

This distinction matters for maintenance. If adding one ordinary OpenType font requires editing the font-routing engine, or adding one feature requires changing the generic feature loader, the extension model has failed. The core is therefore intentionally separated from the growing catalog of concrete resources.

10.2 Catalogs

The `catalog/` layer assigns public ids and metadata. It contains the central registrations for fonts, layouts, and features. For many extensions, this is the correct place to begin.

An ordinary font family that needs only standard `fontspec` shaping can usually be expressed entirely as a catalog registration. Likewise, a public layout preset is assembled from existing internal components, and a feature id maps to its implementation module. Keeping those declarations centralized makes the public surface auditable without searching through the entire source tree.

10.3 Modules

The `modules/` layer is reserved for functionality that genuinely needs its own implementation: feature modules, specialized script support, or reusable internal layout components. A new module should therefore represent a real behavioral extension rather than merely a convenient place to put a font name.

This rule is particularly important for multilingual support. Most scripts should use ordinary OpenType shaping and catalog metadata. Specialized modules are appropriate only when the writing system or rendering strategy requires behavior that the generic core cannot express cleanly.

10.4 Extending IMPE

The detailed registration interfaces are intentionally outside the scope of this user manual. Developers extending the system should begin with `docs/SYSTEM.md` and then consult the relevant subsystem document: `docs/FONTS.md`, `docs/LAYOUTS.md`, or `docs/FEATURES.md`.

The general rule is simple: prefer a registration over a new mechanism, and prefer a specialized module over a change to the stable core when the behavior is genuinely exceptional.

11 Further Documentation and Feedback

This manual is the normal starting point for using IMPE. The repository contains more detailed technical documentation for users who need a complete reference or who want to extend the system.

`docs/SYSTEM.md` architecture, public entry layers, template setup, release model, and extension boundaries.

`docs/FONTS.md` family registration, local and global modes, routing, fallback, shaping, writing behavior, vertical support, and externalized rendering.

`docs/LAYOUTS.md` public layout presets, compatibility targets, and the component model from which presets are built.

`docs/FEATURES.md` public feature ids and the commands, environments, package stacks, and compilation requirements supplied by each module.

CHANGELOG.md changes in published versions.

Showcase the full visual showcase is available from the project repository.

The project repository is available at

`github.com/KelvinYangBK67/IMPE-LaTeX-System`

Bug reports, feature requests, documentation corrections, portability reports, and other concrete feedback are welcome through GitHub Issues:

`github.com/KelvinYangBK67/IMPE-LaTeX-System/issues`

When reporting a typesetting problem, it is useful to include a minimal source file, the $\TeX$ engine and $\TeX$ Live version, the IMPE version, and the relevant font information. Reports concerning a local or privately supplied font should also distinguish between a font-coverage problem and an IMPE routing problem where possible.

The English manual is the authoritative manual text. Other language editions may adapt prose and terminology to their own technical conventions, but their commands, examples, and description of IMPE behavior should remain synchronized with this edition.

A Quick Reference

This appendix summarizes the documented public interface of IMPE 1.0.1. It is intended for lookup rather than as a replacement for the explanations in the main text or the detailed subsystem documentation under docs/. Internal implementation commands, in particular commands beginning with `\Next...`, are not part of this reference.

A.1 Recommended font-loading model

For ordinary use, prefer `fonts = {...}` inside `\UseTemplateSet` or use `\UseFont{...}` directly. With no explicit mode, IMPE follows the registered behavior of the family: it may define a local command, activate a document-wide font, or install script- or range-specific automatic routing as appropriate.

Use an explicit mode only when that automatic behavior is not what the document needs:

```
\UseFont{sanskrit}           % recommended: registered automatic behavior
```

```

\UseFont{sanskrit}[local]    % explicitly local only
\UseFont{sanskrit}[global]  % explicitly global/range-global

\UseTemplateSet{
  fonts = {sanskrit,tibetan,arabic},
  features = {math,hyperlinks}
}

```

The convenience commands `\UseGlobalFont(s)` and `\UseLocalFont(s)` express the same explicit distinction. The `globalfonts` and `mainfonts` template keys are likewise explicit global overrides; they are not the normal replacement for `fonts`.

A.2 Document classes and package entry points

Entry point	Purpose
<code>impeart</code>	English article wrapper; defaults to <code>en_doc</code> with CMU as the base global font.
<code>impeart_zh</code>	Chinese article wrapper; defaults to <code>zh_doc</code> with CMU and Shanggu.
<code>impereport</code>	English report wrapper; defaults to <code>en_doc</code> .
<code>impereport_zh</code>	Chinese report wrapper; defaults to <code>zh_doc</code> .
<code>impebook</code>	English book wrapper; defaults to <code>en_book</code> .
<code>impebook_zh</code>	Chinese book wrapper; defaults to <code>zh_book</code> .
<code>impebeamer</code>	English Beamer wrapper; defaults to the beamer layout.
<code>impebeamer_zh</code>	Chinese Beamer wrapper; defaults to the beamer layout with CMU and Shanggu.
<code>impe.sty</code>	Loads IMPE under an ordinary $\LaTeX$ class when no wrapper class is desired.

The legacy `next*` package and class names remain compatibility aliases in version 1.0.1, but new documents should use the canonical `impe*` entry points.

A.3 Core setup commands

Command	Purpose
<code>\UseTemplateSet{...}</code>	Configure layout, fonts, and features in one declaration.
<code>\UseFont{id}[mode]</code>	Load one registered font family; omit <code>mode</code> for the recommended automatic behavior, or use <code>local/global</code> explicitly.
<code>\UseFonts{ids}[mode]</code>	Load several registered font families with the same optional mode.
<code>\UseGlobalFont{id}</code>	Explicitly request the global mode of one family.
<code>\UseGlobalFonts{ids}</code>	Explicitly request the global mode of several families.
<code>\UseMainFont{id}</code>	Alias of <code>\UseGlobalFont</code> ; retained as a document-oriented name.
<code>\UseMainFonts{ids}</code>	Alias of <code>\UseGlobalFonts</code> .
<code>\UseLocalFont{id}</code>	Explicitly request the local mode of one family.
<code>\UseLocalFonts{ids}</code>	Explicitly request the local mode of several families.
<code>\UseLayout{id}</code>	Load one registered layout preset.
<code>\UseLayouts{ids}</code>	Load several registered layout presets.
<code>\UseFeature{id}</code>	Load one optional feature module.
<code>\UseFeatures{ids}</code>	Load several optional feature modules.
<code>\SetCatalogFontRoot{path}</code>	Override the root directory from which catalogued font files are resolved.
<code>\subtitle{text}</code>	Set the document subtitle used by the IMPE title block.
<code>\HeaderTitle{text}</code>	Override the fixed title used by the <code>headers</code> feature.
<code>\HeaderStyle{style}</code>	Choose the header style; documented values are <code>running</code> and <code>title</code> .

A.4 Template-set keys

Key	Meaning
layout	Select one public layout preset.
fonts	Load one or more registered families using their automatic registered behavior; this is the recommended key for normal font loading.
globalfonts	Explicitly force the listed families through their global mode or global routing path.
mainfonts	Alias of globalfonts.
features	Load one or more optional feature modules.

A.5 Public layout identifiers

ID	Purpose
en_doc	English article/report layout with A4 geometry and English text spacing.
zh_doc	Chinese article/report layout with A4 geometry and Chinese text spacing.
report	Report-only compatibility preset with the same page and text components as zh_doc.
en_book	English book/report layout with book geometry, running heads, and right-hand chapter openings.
zh_book	Chinese book/report layout with book geometry, Chinese text spacing, running heads, and right-hand chapter openings.
beamer	Presentation layout with the IMPE Beamer typography and navigation setup.

A.6 Public feature identifiers

ID	Purpose
math	Load the IMPE mathematics stack and theorem environments.

ID	Purpose
<code>hyperlinks</code>	Load hyperlinking, PDF bookmarks, linked headings, and bidirectional footnote links.
<code>citations</code>	Load biblatex/csquotes citation support and IMPE citation-style helpers.
<code>index</code>	Load index support and the <code>\Term</code> helper.
<code>tables</code>	Load the table stack, column types, and IMPE table environments.
<code>image</code>	Load image, caption, and panel-figure helpers.
<code>lists_envs</code>	Load the ExampleBlock display environment.
<code>headers</code>	Load configurable running heads for article-, report-, and book-like documents.
<code>bib, header</code>	Compatibility aliases for citations and headers.

A.7 Feature-specific commands and values

Command or setting	Purpose / documented values
<code>\UseMathFont{value}</code>	Choose the mathematics font route before loading math: <code>auto</code> , <code>libertinus</code> , <code>newcm</code> , <code>mlmodern</code> , or another font name passed to <code>\setmathfont</code> .
<code>\UseCitationStyle{value}</code>	Choose a citation preset before loading citations: <code>APA</code> , <code>GB</code> , <code>numeric</code> , or <code>author-year</code> .
<code>\SetCitationBiblatexOptions{...}</code>	Replace the effective biblatex option list before loading citations.
<code>\HeaderTitle{text}</code>	Set a short fixed title for running heads.
<code>\HeaderStyle{value}</code>	Select <code>running</code> or <code>title</code> .
<code>\IndexTitle</code>	Optional index-title override, defined before loading index.

Command or setting	Purpose / documented values
<code>\Term[options]{display}[description]</code>	Print a bold term and index its first occurrence; options include <code>sort</code> , <code>key</code> , and <code>parentheses</code> .
<code>\TablesSetup</code>	Apply or re-apply the IMPE table setup.
<code>\Panel</code>	Insert one panel inside <code>PanelFigure</code> or <code>PanelFigure*</code> .
<code>\TemplateFigurePaths</code>	Configure the default search paths used by the image feature.
<code>\OneImageDefaultWidth</code>	Set the default width for <code>OneImage</code> .
<code>\OneImageMaxHeight</code>	Set the maximum default image height for <code>OneImage</code> .
<code>\OneImageDefaultPlacement</code>	Set the default float placement for <code>OneImage</code> .
<code>\PanelDefaultCols</code>	Set the default number of columns used by panel figures.
<code>\PanelDefaultHeight</code>	Set the default panel height.
<code>\PanelDefaultMode</code>	Set the default panel layout mode.
<code>\PanelDefaultPlacement</code>	Set the default float placement for panel figures.

Standard commands provided directly by packages loaded by a feature—for example `\addbibresource`, `\printbibliography`, `\printindex`, or the `booktabs` rule commands—retain their normal package syntax and are not redefined by IMPE.

A.8 Public environments and table column types

Name	Purpose
<code>theorem</code> , <code>lemma</code> , <code>proposition</code> , <code>corollary</code>	Numbered theorem-like environments provided by the <code>math</code> feature.

Name	Purpose
definition, example, remark	Additional theorem-style environments provided by the math feature.
TableInlineFit	Compact table environment intended to fit an inline table to the available width.
TableLong	Long-table environment for material that may span pages.
TableBook, TableBookX	Book-style table environments.
TableBookNotes	Book-style table environment with notes.
NiceBooktable, NiceBooktableX, NiceBooktableNotes	Alternative book-style table helpers provided by the tables feature.
L, C, R	Ragged-right, centered, and ragged-left tabularx columns.
P{w}, M{w}, B{w}	Fixed-width paragraph columns with ragged-right, centered, and ragged-left alignment.
OneImage	Single-image figure; becomes inline rather than floating under Beamer.
OneImageInline	Centered non-floating image.
PanelFigure	Captioned multi-panel figure with subcaptions outside Beamer.
PanelFigure*	Uncaptioned multi-panel figure.
ExampleBlock	Indented italic display block for examples, quotations, linguistic data, or teaching material.

A.9 Registered font-family identifiers

The table below lists the font-family IDs accepted by `\UseFont` in IMPE 1.0.1. The **Auto** column summarizes what a mode-less `\UseFont{id}` normally activates:

G document-global family;

L local family/command;

L+G local access plus full document-global activation;

L+R local access plus automatic script- or range-limited global routing.

The automatic route is the recommended interface. An explicit [local] or [global] request deliberately bypasses part of that automatic decision and should therefore be used only when required.

Family ID	Auto	Local mand	com- Typical role
cmu	G	—	Computer Modern Unicode base family.
noto	L+G	\NOT	General Noto Latin family.
times	L+G	\TIM	Times/Arial/Consolas system-family route.
gentium	L+G	\GEN	Gentium Plus.
charis	L+G	\CHA	Charis SIL.
libertinus	L+G	\LIB	Libertinus serif/sans/mono family.
mlmodern	L	\MLM	Latin Modern / MLModern local route.
anatolian	L	\CA	Carian / Anatolian script material.
coptic	L	\CO	Coptic.
bopomofo	L	\ZY	Bopomofo.
cuneiform	L	\CU	Cuneiform.
glagolitic	L	\GL	Glagolitic.
italic	L	\OI	Old Italic.
hungarian	L	\OH	Old Hungarian.
runic	L	\RU	Runic.
armenian	L	\HY	Armenian.
georgian	L	\KA	Georgian.

Family ID	Auto	Local mand	com- mand	Typical role
hindi	L+R	\HI		Hindi Devanagari with registered range routing.
sanskrit	L+R	\SA		Sanskrit Devanagari with Sanskrit-aware routing.
devanagari	L	\DEV		Generic Devanagari without language-specific behavior.
tamil	L	\TA		Tamil.
brahmi	L	\BR		Brahmi.
tibetan	L+R	\TI		Tibetan with tsheg-aware line-breaking behavior.
segoe	L	\SEG		Segoe Historic local route.
thai	L	\TH		Thai.
arabic	L	\AR		Arabic; serif/sans and alternate stylistic faces.
urdu	L	\UR		Urdu Nastaliq.
aramaic	L	\IA		Imperial Aramaic.
nabataean	L	\NB		Nabataean.
hebrew	L	\HE		Hebrew.
syriac	L	\SY		Syriac.
syriac_eastern	L+R	\SYE		Eastern Syriac with registered range routing.
kharosthi	L	\KH		Kharosthi.
khitan_small	L	\KHS		Khitan Small Script with its specialized composer.
pahlavi_parthian	L+R	\PAR		Inscriptional Parthian.
pahlavi_inscriptional	L+R	\PAH		Inscriptional Pahlavi.
pahlavi_psalter	L	\PSP		Psalter Pahlavi with specialized support.

Family ID	Auto	Local mand	com- Typical role
avestan	L	\AV	Avestan.
manichaeen	L	\MA	Manichaeen.
phoenician	L	\PH	Phoenician.
samaritan	L	\SM	Samaritan.
sogdian	L	\SG	Sogdian.
sogdian_old	L+R	\SG0	Old Sogdian with registered range routing.
chinese_simplified	L+R	\SC	Simplified Chinese CJK family.
chinese_traditional	L+R	\TC	Traditional Chinese CJK family.
japanese	L+R	\JP	Japanese; automatic routing preserves shared Han priority.
wenjin	L+R	\WJ	WenJin Mincho with CJK fallback chain.
shanggu	G	—	Traditional-Chinese-oriented global CJK family.
sim	G	—	Simplified-Chinese-oriented system CJK family.
korean	L+R	\KR	Korean/Hangul family.
tangut	L+R	\TG	Tangut with CJK-aware automatic routing.
mongolian	L	\MO	Mongolian with built-in vertical layout route.
mongolian_baiti	L	\MOb	Mongolian Baiti with vertical layout route.
manchu	L	\MC	Manchu with vertical layout route.

Family ID	Auto	Local mand	com-	Typical role
turkic	L	\OT		Old Turkic.
uyghur	L	\UY		Old Uyghur with vertical/rotated layout route.
vietnamese_quocngu	L	\VI		Vietnamese Quốc Ngữ.
vietnamese_hannom	L	\HN		Vietnamese Hán-Nôm / CJK text.

A.10 Advanced extension interfaces

These commands are intended for extending IMPE rather than for ordinary document setup.

Command	Purpose
\FontRegisterFamily{...}	Register a new font family and its local/global meta-data.
\LayoutPresetRegister{...}	Register a structured layout preset from internal layout components.
\LayoutPresetDeclare{...}	Lower-level layout-preset declaration interface used when building the system.

For the full registration syntax and extension rules, see `docs/FONTS.md`, `docs/LAYOUTS.md`, and `docs/SYSTEM.md`.

B Showcase

The following pages reproduce the complete canonical IMPE showcase. The showcase is not a second reference manual; it is a visual companion demonstrating multilingual font routing, complex shaping, right-to-left scripts, vertical writing, CJK regional forms, and combinations of document features.

The latest showcase can be obtained from the current main branch; the edition belonging to this manual is preserved by the v1.0.1 tag.

IMPE $\text{\LaTeX}$ System

Canonical Multilingual and Feature Showcase

Kelvin Yang

v1.0.1

Abstract

This document is the canonical visual specimen for the current IMPE $\text{\LaTeX}$ System public interface. It combines a local-family style audit, a deliberately small Unicode-range routing regression, dense multilingual paragraph composition with explicit local overrides, right-to-left text, vertical writing, generic complex shaping, CJK and Han family selection, and the principal document features provided by IMPE. It is intended both as a public showcase and as a release-time visual regression specimen.¹

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¹The showcase is intentionally broader than the focused regression fixtures under `tests/`; those fixtures isolate individual failures.

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This section presents IMPE’s explicit local font commands and compares their available serif, bold, italic, and sans-serif styles. The complete font-family matrix appears on the following landscape page. Where a requested face is unavailable, IMPE falls back according to the family configuration rather than requiring special-case markup.

Multilingual composition (combined routing and local overrides) is tested here in two deliberately different ways. The main specimen is a dense paragraph in which explicit local families, right-to-left runs, complex shaping, shared Han choices, and inline vertical writing are allowed to interact. A later compact regression enables automatic Unicode-range ownership for only a small set of ordinary scripts.

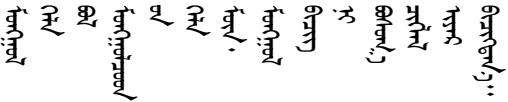
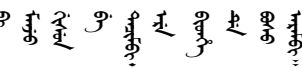
The following specimen is intentionally one TeX paragraph. It contains no English transition sentences: every script that appears contributes a complete sentence or clause. Armenian, Georgian, Coptic, Glagolitic, and Tamil are left as raw Unicode to exercise the small automatic-routing set; all other script families in the paragraph use explicit local overrides.

[illegible]

Family	Command	Regular	Bold	Italic	Bold italic	Sans	Sans bold	Sans italic	Sans bold italic
Latin and general-purpose families									
Noto	\NOT	Abg fi fl	Abg fi fl	<i>Abg fi fl</i>	<i>Abg fi fl</i>	Abg fi fl	Abg fi fl	<i>Abg fi fl</i>	<i>Abg fi fl</i>
Times	\TIM	Abg fi fl	Abg fi fl	<i>Abg fi fl</i>	<i>Abg fi fl</i>	Abg fi fl	Abg fi fl	<i>Abg fi fl</i>	<i>Abg fi fl</i>
Gentium Plus	\GEN	Ārya ṛ ṁ ḥ	Ārya ṛ ṁ ḥ	<i>Ārya ṛ ṁ ḥ</i>	<i>Ārya ṛ ṁ ḥ</i>	Ārya ṛ ṁ ḥ	Ārya ṛ ṁ ḥ	<i>Ārya ṛ ṁ ḥ</i>	<i>Ārya ṛ ṁ ḥ</i>
Charis SIL	\CHA	Ārya ṛ ṁ ḥ	Ārya ṛ ṁ ḥ	<i>Ārya ṛ ṁ ḥ</i>	<i>Ārya ṛ ṁ ḥ</i>	Ārya ṛ ṁ ḥ	Ārya ṛ ṁ ḥ	<i>Ārya ṛ ṁ ḥ</i>	<i>Ārya ṛ ṁ ḥ</i>
Libertinus	\LIB	Abg fi fl	Abg fi fl	<i>Abg fi fl</i>	<i>Abg fi fl</i>	Abg fi fl	Abg fi fl	<i>Abg fi fl</i>	<i>Abg fi fl</i>
European and ancient alphabetic scripts									
Carian	\CA	ΑΒΝ	ΑΒΝ	ΑΒΝ	ΑΒΝ	ΑΒΝ	ΑΒΝ	ΑΒΝ	ΑΒΝ
Coptic	\CO	Ⲛⲟⲩⲧⲉ	Ⲛⲟⲩⲧⲉ	Ⲛⲟⲩⲧⲉ	Ⲛⲟⲩⲧⲉ	Ⲛⲟⲩⲧⲉ	Ⲛⲟⲩⲧⲉ	Ⲛⲟⲩⲧⲉ	Ⲛⲟⲩⲧⲉ
Bopomofo	\ZY	ㄗ ㄨ ˊ ㄣ	ㄗ ㄨ ˊ ㄣ	ㄗ ㄨ ˊ ㄣ	ㄗ ㄨ ˊ ㄣ	ㄗ ㄨ ˊ ㄣ	ㄗ ㄨ ˊ ㄣ	ㄗ ㄨ ˊ ㄣ	ㄗ ㄨ ˊ ㄣ
Cuneiform	\CU	𐎶𐎵𐎶𐎵	𐎶𐎵𐎶𐎵	𐎶𐎵𐎶𐎵	𐎶𐎵𐎶𐎵	𐎶𐎵𐎶𐎵	𐎶𐎵𐎶𐎵	𐎶𐎵𐎶𐎵	𐎶𐎵𐎶𐎵
Glagolitic	\GL	ⱭⱭⱭⱭ	ⱭⱭⱭⱭ	ⱭⱭⱭⱭ	ⱭⱭⱭⱭ	ⱭⱭⱭⱭ	ⱭⱭⱭⱭ	ⱭⱭⱭⱭ	ⱭⱭⱭⱭ
Old Italic	\OI	𐌲𐌸𐌸	𐌲𐌸𐌸	𐌲𐌸𐌸	𐌲𐌸𐌸	𐌲𐌸𐌸	𐌲𐌸𐌸	𐌲𐌸𐌸	𐌲𐌸𐌸
Old Hungarian	\OH	ꞤꞤꞤ	ꞤꞤꞤ	ꞤꞤꞤ	ꞤꞤꞤ	ꞤꞤꞤ	ꞤꞤꞤ	ꞤꞤꞤ	ꞤꞤꞤ
Runic	\RU	ᚱᚱᚱ	ᚱᚱᚱ	ᚱᚱᚱ	ᚱᚱᚱ	ᚱᚱᚱ	ᚱᚱᚱ	ᚱᚱᚱ	ᚱᚱᚱ
South and Central Asian scripts									
Armenian	\HY	Հայերեն	Հայերեն	Հայերեն	Հայերեն	Հայերեն	Հայերեն	Հայերեն	Հայերեն
Hindi	\HI	हिन्दी	हिन्दी	हिन्दी	हिन्दी	हिन्दी	हिन्दी	हिन्दी	हिन्दी
Sanskrit	\SA	संस्कृतम्	संस्कृतम्	संस्कृतम्	संस्कृतम्	संस्कृतम्	संस्कृतम्	संस्कृतम्	संस्कृतम्
Devanagari	\DEV	देवनागरी	देवनागरी	देवनागरी	देवनागरी	देवनागरी	देवनागरी	देवनागरी	देवनागरी
Tamil	\TA	தமிழ்	தமிழ்	தமிழ்	தமிழ்	தமிழ்	தமிழ்	தமிழ்	தமிழ்
Brahmi	\BR	𑀧𑁆𑀭𑀸	𑀧𑁆𑀭𑀸	𑀧𑁆𑀭𑀸	𑀧𑁆𑀭𑀸	𑀧𑁆𑀭𑀸	𑀧𑁆𑀭𑀸	𑀧𑁆𑀭𑀸	𑀧𑁆𑀭𑀸
Georgian	\KA	ქართული	ქართული	ქართული	ქართული	ქართული	ქართული	ქართული	ქართული

Family	Command	Regular	Bold	Italic	Bold italic	Sans	Sans bold	Sans italic	Sans bold italic
Tibetan	\TI	བསྐྱེད་པུ་	བསྐྱེད་པུ་	བསྐྱེད་པུ་	བསྐྱེད་པུ་	བསྐྱེད་པུ་	བསྐྱེད་པུ་	བསྐྱེད་པུ་	བསྐྱེད་པུ་
RTL and West Asian scripts									
Arabic	\AR	العربية	العربية	العربية	العربية	العربية	العربية	العربية	العربية
Urdu	\UR	اُردُو	اُردُو	اُردُو	اُردُو	اُردُو	اُردُو	اُردُو	اُردُو
Imperial Aramaic	\IA	ܐܪܡܝܐ	ܐܪܡܝܐ	ܐܪܡܝܐ	ܐܪܡܝܐ	ܐܪܡܝܐ	ܐܪܡܝܐ	ܐܪܡܝܐ	ܐܪܡܝܐ
Nabataean	\NB	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏
Hebrew	\HE	שָׁלוֹם	שָׁלוֹם	שָׁלוֹם	שָׁלוֹם	שָׁלוֹם	שָׁלוֹם	שָׁלוֹם	שָׁלוֹם
Syriac	\SY	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ
Eastern Syriac	\SYE	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ	ܡܠܟܐ
Kharoshthi	\KH	𑖀	𑖀	𑖀	𑖀	𑖀	𑖀	𑖀	𑖀
Iranian and other historical scripts									
Inscriptional Parthian	\PAR	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣
Inscriptional Pahlavi	\PAH	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣
Psalter Pahlavi	\PSP	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣
Avestan	\AV	𐬀𐬁𐬂𐬃	𐬀𐬁𐬂𐬃	𐬀𐬁𐬂𐬃	𐬀𐬁𐬂𐬃	𐬀𐬁𐬂𐬃	𐬀𐬁𐬂𐬃	𐬀𐬁𐬂𐬃	𐬀𐬁𐬂𐬃
Manichaean	\MA	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣	𐭠𐭡𐭣
Phoenician	\PH	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏
Samaritan	\SM	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏	𐤊𐤍𐤏
Sogdian	\SG	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃
Old Sogdian	\SGO	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃	𐰀𐰁𐰂𐰃
CJK and East Asian families									
Noto SC	\SC	汉字骨直	汉字骨直	汉字骨直	汉字骨直	汉字骨直	汉字骨直	汉字骨直	汉字骨直
Noto TC	\TC	漢字骨直	漢字骨直	漢字骨直	漢字骨直	漢字骨直	漢字骨直	漢字骨直	漢字骨直
Japanese	\JP	日本語漢字	日本語漢字	日本語漢字	日本語漢字	日本語漢字	日本語漢字	日本語漢字	日本語漢字

Family	Command	Regular	Bold	Italic	Bold italic	Sans	Sans bold	Sans italic	Sans bold italic
WenJin	\WJ	中國𠂇𠂇	中國𠂇𠂇	中國𠂇𠂇	中國𠂇𠂇	中國𠂇𠂇	中國𠂇𠂇	中國𠂇𠂇	中國𠂇𠂇
Korean	\KR	한국어漢字	한국어漢字	한국어漢字	한국어漢字	한국어漢字	한국어漢字	한국어漢字	한국어漢字
Tangut	\TG	𐞪𐞩𐞰	𐞪𐞩𐞰	𐞪𐞩𐞰	𐞪𐞩𐞰	𐞪𐞩𐞰	𐞪𐞩𐞰	𐞪𐞩𐞰	𐞪𐞩𐞰
Mongolian-family and other Asian scripts									
Khitan Small Script (linear)	\KHS	𐰆𐰇𐰏	𐰆𐰇𐰏	𐰆𐰇𐰏	𐰆𐰇𐰏	𐰆𐰇𐰏	𐰆𐰇𐰏	𐰆𐰇𐰏	𐰆𐰇𐰏
Mongolian	\MO	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ
Mongolian Baiti	\MOb	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ	ᠮᠣᠩᠭᠣᠯᠠᠨ
Manchu	\MC	ᠮᠠᠨᠴᠤ	ᠮᠠᠨᠴᠤ	ᠮᠠᠨᠴᠤ	ᠮᠠᠨᠴᠤ	ᠮᠠᠨᠴᠤ	ᠮᠠᠨᠴᠤ	ᠮᠠᠨᠴᠤ	ᠮᠠᠨᠴᠤ
Segoe Historic	\SEG	ᠮᠤᠯᠠᠩᠭᠣᠯᠠᠨ	ᠮᠤᠯᠠᠩᠭᠣᠯᠠᠨ	ᠮᠤᠯᠠᠩᠭᠣᠯᠠᠨ	ᠮᠤᠯᠠᠩᠭᠣᠯᠠᠨ	ᠮᠤᠯᠠᠩᠭᠣᠯᠠᠨ	ᠮᠤᠯᠠᠩᠭᠣᠯᠠᠨ	ᠮᠤᠯᠠᠩᠭᠣᠯᠠᠨ	ᠮᠤᠯᠠᠩᠭᠣᠯᠠᠨ
Thai	\TH	ภาษาไทย	ภาษาไทย	ภาษาไทย	ภาษาไทย	ภาษาไทย	ภาษาไทย	ภาษาไทย	ภาษาไทย
Old Turkic	\OT	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏
Old Uyghur	\UY	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏	𐰇𐰆𐰏𐰏
Vietnamese									
Quốc Ngữ	\VI	Tiếng Việt	Tiếng Việt	Tiếng Việt	Tiếng Việt	Tiếng Việt	Tiếng Việt	Tiếng Việt	Tiếng Việt
Hán-Nôm	\HN	𐤙𐤙𐤙𐤙	𐤙𐤙𐤙𐤙	𐤙𐤙𐤙𐤙	𐤙𐤙𐤙𐤙	𐤙𐤙𐤙𐤙	𐤙𐤙𐤙𐤙	𐤙𐤙𐤙𐤙	𐤙𐤙𐤙𐤙

前後不同文種保持在同一個段落中。  縦書き
 のモンゴル文字の直後にも日本語の完全な文章が続き、通常の横書き状態が回復したことを確認します。  두 번째 세로쓰기 구간 뒤에도 한국어의
 완전한 문장이 이어지며 문단의 방향과 글꼴 상태가 정상적으로 복원되는지를 확인합니다. 最後這個中文完整句子仍然留在同一個段落裡，用來確認兩次豎排 local override、
 數次 RTL 切換與複雜 shaping 之後，普通橫排行文與局部字體狀態全部恢復正常。

2.2 Minimal Automatic Unicode-Range Regression

Unicode-range routing (automatic font ownership) is exercised here only on a small representative set. This keeps the v1.0.1 showcase focused on routing correctness without turning the entire document into a large interchar transition graph. The specimen itself contains raw Unicode only.

Հայերեն այս ամբողջական նախադասությունը գրված է առանց տեղական տառատեսակի հրամանի: ეს სრული ქართული წინადადება ავტომატური Unicode დიაპაზონის მარშრუტიზაციას ამოწმებს. ΟΥΟΖ ΠΙΛΟΓΟΣ ΑΓΓΥΑΠΙ ΝΟΥΓΑΡΞ ΟΥΟΖ ΑΓΓΥΑΠΙ ΝΗΗΤΕΝ. ீ-ஐ Pஈஐஈஈஈ ஁஁஁஁஁ ஐஐஐஐஐ, ஐ ஐஐஐஐஐ ஁஁஁஁஁ ஁஁஁஁஁. தமிழில் எழுதப்பட்ட இந்த முழு வாக்கியம் தனி local font command இன்றி Unicode range owner மூலம் அமைக்கப்படுகிறது.

3 Right-to-Left Scripts

Right-to-left text (directional behavior) requires more than choosing a glyph source. This section therefore uses explicit local families throughout. Each specimen is long enough to form a genuine paragraph, allowing line breaking, inter-word spacing, punctuation, digits, bidirectional interaction, and OpenType shaping to be inspected without enabling overlapping automatic Arabic, Hebrew, or Syriac range owners.

3.1 Arabic

اَلْعَرَبِيَّةُ لُغَةٌ ذَاتُ تَارِيخٍ طَوِيلٍ، وَهِيَ تُكْتَبُ مِنَ الْيَمِينِ إِلَى الْبَسَارِ، وَتَتَّصِلُ حُرُوفُهَا بِأَشْكَالٍ مُخْتَلِفَةٍ بِحَسَبِ مَوْضِعِهَا فِي الْكَلِمَةِ. يَحْتَوِي هَذَا النَّصُّ عَلَى جُمْلٍ طَوِيلَةٍ وَعَلَامَاتٍ تَرْقِيمٍ مُتَنَوِّعَةٍ، وَتَتَغَيَّرُ أَطْوَالُ الْكَلِمَاتِ وَالْجُمْلِ حَتَّى يَظْهَرَ سُلُوكُ الْفَقْرَةِ عِنْدَ نِهَآيَةِ السَّطْرِ. وَعِنْدَمَا يَطْوُلُ السَّطْرُ يَجِبُ أَنْ يَنْتَقِلَ النَّصُّ إِلَى السَّطْرِ التَّالِي بِصُورَةٍ طَبِيعِيَّةٍ مِنْ غَيْرِ أَنْ تَنْقَطِعَ أَشْكَالُ الْحُرُوفِ أَوْ تَضْطَرِّبَ الْمَسَافَاتُ بَيْنَ الْكَلِمَاتِ. وَيُسْتَعْمَلُ هَذَا الْمَقْطَعُ لِلتَّأَكُّدِ مِنْ

Inline Arabic inside an English sentence: الترقية والكتابة في سطر واحد مع علامات الترقيم before returning to ordinary Latin text.

اُردو ایک ایسی زبان ہے جس کی تحریری روایت میں نستعلیق رسم الخط کو خاص اہمیت حاصل ہے۔ اس رسم الخط میں حروف صرف ایک دوسرے سے ملتے ہی نہیں بلکہ الفاظ کی مجموعی ساخت بھی سطر کی بصری صورت پر اثر ڈالتی ہے، اس لیے طویل عبارت مختصر نمونے سے کہیں زیادہ مفید آزمائش فراہم کرتی ہے۔ اس پیراگراف میں مختلف لمبائی کے الفاظ، مختلف رموزِ اوقاف، اور کئی مسلسل جملے شامل ہیں تاکہ دائیں سے بائیں بہاؤ، لفظی فاصلوں، اور سطر کے اختتام پر عبارت کی تقسیم کو واضح طور پر دیکھا جاسکے۔ جب عبارت ایک سطر میں پوری نہ آئے تو اگلی سطر میں منتقلی قدرتی ہونی چاہیے، الفاظ کی ترتیب برقرار رہنی چاہیے، اور نستعلیق کی تشکیل کسی غلط فونٹ یا غیر متعلقہ عربی طرز میں تبدیل نہیں ہونی چاہیے۔ یہ آخری جملہ خاص طور پر اس بات کی جانچ کرتا ہے کہ ایک مکمل اُردو پیراگراف کتنی سطروں میں تقسیم ہونے کے بعد بھی اپنی مقامی نستعلیق فیملی اور درست سمت برقرار رکھتا ہے۔

העברית נכתבת מימין לשמאל, ולכן פסקה ארוכה מאפשרת לבדוק לא רק את צורת האותיות אלא גם את התנהגות השורות, הרווחים וסימני הפיסוק. בטקסט הזה מופיעים משפטים באורכים שונים כדי לבדוק כיצד המערכת מתמודדת עם רצף עברי ארוך בתוך פסקה רגילה. כאשר השורה נעשית ארוכה מדי, המעבר לשורה הבאה צריך להתרחש במקום טבעי בלי לשנות את סדר המילים ובלי לפגוע במיקום הנקודות, הפסיקים והסוגריים. אפשר גם לכתוב מילים מנוקדות כמו שָׁלוֹם, עִבְרִית וְכֻתִּיבָה בתוך אותה פסקה, וכך לבדוק שהניקוד נשאר מחובר לאות הנכונה גם לאחר שבירת שורה. המשפט האחרון נועד לוודא שהפסקה כולה נשארת יציבה בתוך מסמך רב־לשוני ולאחריה חוזר הטקסט הסובב להתנהגות הרגילה.

על פי חוק, כל מי שיש לו זכויות בעלות על נדלן, חייב לשלם מס על הנדלן. מס הנדלן הוא מס שנת, כלומר, הוא משולם כל שנה. מס הנדלן הוא מס שישלם על ידי הבעלים של הנדלן, והוא משולם על ידי הבעלים של הנדלן, והוא משולם על ידי הבעלים של הנדלן.

הנהגתו של השר לא תהיה נכונה. השר לא צריך להנהיג את הממשלה. השר צריך להנהיג את הממשלה.

Eastern Syriac stylistic family:

[illegible]

4 Vertical Writing

Vertical writing (horizontal-layout-compatible vertical embedding) is currently implemented as a compatibility mode inside an otherwise horizontal document layout. IMPE does not yet provide a fully vertical page or paragraph flow. Instead, the text is divided at word boundaries, and each word is typeset vertically while the resulting word-sized units continue to participate in ordinary horizontal paragraph layout. Spaces therefore become natural break opportunities between vertical words.

This design keeps genuinely vertical glyph orientation while allowing the text to wrap within normal horizontal pages, with relatively compact line spacing and without requiring a separate vertical document model. The specimens below are deliberately long enough to test this compatibility strategy under realistic paragraph conditions: word segmentation, inter-word spacing, line breaking, line spacing, punctuation, ordering, and recovery of the surrounding horizontal layout.

4.1 Mongolian

Horizontal

[illegible]

Vertical

[illegible]

4.2 Manchu

Horizontal

ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ
 ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ
 ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ
 ᡤᡠᡵᡠ ᡤᡠᡵᡠ

Vertical

ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ
 ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ
 ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ

4.3 Old Uyghur

The Old Uyghur sample is deliberately extended so that several successive vertical columns must be produced. It is used as a layout stress string rather than as a continuous philological quotation.

Horizontal

ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ
 ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ
 ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ

Vertical

ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ
 ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ ᡤᡠᡵᡠ

5 Complex Shaping and Stacked Sequences

OpenType shaping (generic complex shaping) is tested here through explicit local families. This deliberately separates shaping from Unicode-range ownership: if a local specimen is wrong, the failure belongs to the selected family or shaping path rather than to an automatic range transition. Egyptian Hieroglyphs remain outside this showcase, and Khitan Small Script is recorded only in its current linear fallback form.

5.1 Devanagari

The Sanskrit local family exercises conjuncts, virama behavior, pre-base and post-base vowel signs, and longer clusters without enabling a document-wide Devanagari owner.

A longer local specimen:

धर्मक्षेत्रे कुरुक्षेत्रे समवेता युयुत्सवः । संस्कृतवाक्यानि देवनागर्या लिखितानि सन्ति ।

Table 2: Devanagari shaping specimens

Sequence	Specimen
kṣa	क्ष
jña	ज्ञ
śra	श्र
stra	स्त्र
ddhya	द्ध्य
dharma	धर्म
dharmakṣetre	धर्मक्षेत्रे
saṃskṛtam	संस्कृतम्
om	ॐ

5.2 Tibetan

Tibetan provides a visible example of generic vertical stacking inside one local shaping run.

Table 3: Tibetan stack specimens

Type	Specimen
stack	བསྐྱབས་
stack	བརྒྱད་
stack	བཟླ་
stack	རྒྱལ་
stack	དབྱངས་

A longer local paragraph exercises Tibetan shaping and line breaking under ordinary document width:

བོད་ཡིག་ནི་བོད་ཀྱི་སྐད་ཡིག་འབྲི་བའི་ཡི་གེའི་མ་ལག་ཅིག་ཡིན་ཞིང་། ཆོག་དང་ཆོག་གི་བར་ལ་ཆོག་གིས་
མཚམས་འབྲེད་པ་དང་། ཡི་གེ་མང་པོ་ཞིག་མགོ་ཅན་དང་འདོགས་ཅན་དུ་སྒྱར་ནས་ཆོག་བར་གཅིག་གི་ནང་དུ་སྤངས་ཏེ་
འབྲི་དགོས། དཔེར་ན་བསྐྱབས་པ་དང་། བརྒྱད་པ། བཟླ་པ། རྒྱལ་ཁབ། དབྱངས་ཅན་ལྟ་བུའི་ཆོག་ནང་དུ་ཡི་གེ་མང་པོ་
སྒྱར་ཡོད་པས། ཡིག་གཟུགས་ཀྱི་སྤངས་སྤངས་དང་ཆོག་བར་གྱི་བར་ཐག་གཉིས་ཀ་ཡང་དག་པར་སྟོན་དགོས། ཆོག་ཕྱིང་
རིང་པོ་ཞིག་ཤོག་ངོས་ཀྱི་ཞིང་ཆད་ལས་བཀལ་བའི་སྐབས་སུ། ཆོག་གི་རྗེས་སུ་རང་བཞིན་གྱིས་ཕྱིང་བ་གསར་པར་འགོ་
ཐུབ་པ་དང་། སྔ་ཕྱིའི་ཡི་གེའི་སྤངས་སྤངས་དང་ཆོག་གི་གོ་རིམ་མི་འབྲུག་པ་གལ་ཆེ། དེའི་ཕྱིར་ཆོག་ཕྱིང་རིང་པོ་འདིས་
བོད་ཡིག་གི་གཟུགས་སྒྱུར་དང་། ཆོག་བར། ཕྱིང་བར། ཤད་དང་ཉིས་ཤད་ཀྱི་གནས་སྤངས། དེ་བཞིན་དུ་ཕྱིང་བ་བརྗེ་བའི་
སྐབས་ཀྱི་སྤྱིའི་སྒྲིག་སྤངས་བཅས་ལ་ཆོད་ལྟ་བུ་བྱེད་ཐུབ།

5.3 Brahmi, Kharoshthi, and Thai

Brahmi is provided through two local families. The redistributable Noto family provides broad Brahmi coverage, but in the current IMPE/X_YTeX setup it does not produce the expected stacked forms for all conjunct sequences. Segoe UI Historic is therefore exposed through \SEG as an alternative reference family and produces the intended stacking in these cases. Because Segoe UI Historic is a Microsoft Windows font, its font binary is not distributed with IMPE; the local command is available only when the user supplies or already has access to the font.

Table 4: Additional generic-shaping specimens

Script / family	Specimen
Brahmi / Noto	𑀀𑀁𑀂 𑀃𑀄, Dīṣṣ 𑀅𑀆.
Brahmi / Segoe Historic	𑀇𑀈 𑀉𑀊, Dīṣṣ 𑀋𑀌.
Kharoshthi	𑖀 𑖁 𑖂 𑖃 𑖄 𑖅 𑖆 𑖇 𑖈 𑖉 𑖊 𑖋 𑖌 𑖍 𑖎 𑖏 𑖐 𑖑 𑖒 𑖓 𑖔 𑖕 𑖖 𑖗 𑖘 𑖙 𑖚 𑖛 𑖜 𑖝 𑖞 𑖟 𑖠 𑖡 𑖢 𑖣 𑖤 𑖥 𑖦 𑖧 𑖨 𑖩 𑖪 𑖫 𑖬 𑖭 𑖮 𑖯 𑖰 𑖱 𑖲 𑖳 𑖴 𑖵 𑖶 𑖷 𑖸 𑖹 𑖺 𑖻 𑖼 𑖽 𑖾 𑖿 𑗀 𑗁 𑗂 𑗃 𑗄 𑗅 𑗆 𑗇 𑗈 𑗉 𑗊 𑗋 𑗌 𑗍 𑗎 𑗏 𑗐 𑗑 𑗒 𑗓 𑗔 𑗕 𑗖 𑗗 𑗘 𑗙 𑗚 𑗛 𑗜 𑗝 𑗞 𑗟 𑗠 𑗡 𑗢 𑗣 𑗤 𑗥 𑗦 𑗧 𑗨 𑗩 𑗪 𑗫 𑗬 𑗭 𑗮 𑗯 𑗰 𑗱 𑗲 𑗳 𑗴 𑗵 𑗶 𑗷 𑗸 𑗹 𑗺 𑗻 𑗼 𑗽 𑗾 𑗿 𑘀 𑘁 𑘂 𑘃 𑘄 𑘅 𑘆 𑘇 𑘈 𑘉 𑘊 𑘋 𑘌 𑘍 𑘎 𑘏 𑘐 𑘑 𑘒 𑘓 𑘔 𑘕 𑘖 𑘗 𑘘 𑘙 𑘚 𑘛 𑘜 𑘝 𑘞 𑘟 𑘠 𑘡 𑘢 𑘣 𑘤 𑘥 𑘦 𑘧 𑘨 𑘩 𑘪 𑘫 𑘬 𑘭 𑘮 𑘯 𑘰 𑘱 𑘲 𑘳 𑘴 𑘵 𑘶 𑘷 𑘸 𑘹 𑘺 𑘻 𑘼 𑘽 𑘾 𑘿 𑙀 𑙁 𑙂 𑙃 𑙄 𑙅 𑙆 𑙇 𑙈 𑙉 𑙊 𑙋 𑙌 𑙍 𑙎 𑙏 𑙐 𑙑 𑙒 𑙓 𑙔 𑙕 𑙖 𑙗 𑙘 𑙙 𑙚 𑙛 𑙜 𑙝 𑙞 𑙟 𑙠 𑙡 𑙢 𑙣 𑙤 𑙥 𑙦 𑙧 𑙨 𑙩 𑙪 𑙫 𑙬 𑙭 𑙮 𑙯 𑙰 𑙱 𑙲 𑙳 𑙴 𑙵 𑙶 𑙷 𑙸 𑙹 𑙺 𑙻 𑙼 𑙽 𑙾 𑙿 𑚀 𑚁 𑚂 𑚃 𑚄 𑚅 𑚆 𑚇 𑚈 𑚉 𑚊 𑚋 𑚌 𑚍 𑚎 𑚏 𑚐 𑚑 𑚒 𑚓 𑚔 𑚕 𑚖 𑚗 𑚘 𑚙 𑚚 𑚛 𑚜 𑚝 𑚞 𑚟 𑚠 𑚡 𑚢 𑚣 𑚤 𑚥 𑚦 𑚧 𑚨 𑚩 𑚪 𑚫 𑚬 𑚭 𑚮 𑚯 𑚰 𑚱 𑚲 𑚳 𑚴 𑚵 𑚶 𑚷 𑚸 𑚹 𑚺 𑚻 𑚼 𑚽 𑚾 𑚿 𑛀 𑛁 𑛂 𑛃 𑛄 𑛅 𑛆 𑛇 𑛈 𑛉 𑛊 𑛋 𑛌 𑛍 𑛎 𑛏 𑛐 𑛑 𑛒 𑛓 𑛔 𑛕 𑛖 𑛗 𑛘 𑛙 𑛚 𑛛 𑛜 𑛝 𑛞 𑛟 𑛠 𑛡 𑛢 𑛣 𑛤 𑛥 𑛦 𑛧 𑛨 𑛩 𑛪 𑛫 𑛬 𑛭 𑛮 𑛯 𑛰 𑛱 𑛲 𑛳 𑛴 𑛵 𑛶 𑛷 𑛸 𑛹 𑛺 𑛻 𑛼 𑛽 𑛾 𑛿 𑜀 𑜁 𑜂 𑜃 𑜄 𑜅 𑜆 𑜇 𑜈 𑜉 𑜊 𑜋 𑜌 𑜍 𑜎 𑜏 𑜐 𑜑 𑜒 𑜓 𑜔 𑜕 𑜖 𑜗 𑜘 𑜙 𑜚 𑜛 𑜜 𑜝 𑜞 𑜟 𑜠 𑜡 𑜢 𑜣 𑜤 𑜥 𑜦 𑜧 𑜨 𑜩 𑜪 𑜫 𑜬 𑜭 𑜮 𑜯 𑜰 𑜱 𑜲 𑜳 𑜴 𑜵 𑜶 𑜷 𑜸 𑜹 𑜺 𑜻 𑜼 𑜽 𑜾 𑜿 𑝀 𑝁 𑝂 𑝃 𑝄 𑝅 𑝆 𑝇 𑝈 𑝉 𑝊 𑝋 𑝌 𑝍 𑝎 𑝏 𑝐 𑝑 𑝒 𑝓 𑝔 𑝕 𑝖 𑝗 𑝘 𑝙 𑝚 𑝛 𑝜 𑝝 𑝞 𑝟 𑝠 𑝡 𑝢 𑝣 𑝤 𑝥 𑝦 𑝧 𑝨 𑝩 𑝪 𑝫 𑝬 𑝭 𑝮 𑝯 𑝰 𑝱 𑝲 𑝳 𑝴 𑝵 𑝶 𑝷 𑝸 𑝹 𑝺 𑝻 𑝼 𑝽 𑝾 𑝿 𑞀 𑞁 𑞂 𑞃 𑞄 𑞅 𑞆 𑞇 𑞈 𑞉 𑞊 𑞋 𑞌 𑞍 𑞎 𑞏 𑞐 𑞑 𑞒 𑞓 𑞔 𑞕 𑞖 𑞗 𑞘 𑞙 𑞚 𑞛 𑞜 𑞝 𑞞 𑞟 𑞠 𑞡 𑞢 𑞣 𑞤 𑞥 𑞦 𑞧 𑞨 𑞩 𑞪 𑞫 𑞬 𑞭 𑞮 𑞯 𑞰 𑞱 𑞲 𑞳 𑞴 𑞵 𑞶 𑞷 𑞸 𑞹 𑞺 𑞻 𑞼 𑞽 𑞾 𑞿 𑟀 𑟁 𑟂 𑟃 𑟄 𑟅 𑟆 𑟇 𑟈 𑟉 𑟊 𑟋 𑟌 𑟍 𑟎 𑟏 𑟐 𑟑 𑟒 𑟓 𑟔 𑟕 𑟖 𑟗 𑟘 𑟙 𑟚 𑟛 𑟜 𑟝 𑟞 𑟟 𑟠 𑟡 𑟢 𑟣 𑟤 𑟥 𑟦 𑟧 𑟨 𑟩 𑟪 𑟫 𑟬 𑟭 𑟮 𑟯 𑟰 𑟱 𑟲 𑟳 𑟴 𑟵 𑟶 𑟷 𑟸 𑟹 𑟺 𑟻 𑟼 𑟽 𑟾 𑟿 𑠀 𑠁 𑠂 𑠃 𑠄 𑠅 𑠆 𑠇 𑠈 𑠉 𑠊 𑠋 𑠌 𑠍 𑠎 𑠏 𑠐 𑠑 𑠒 𑠓 𑠔 𑠕 𑠖 𑠗 𑠘 𑠙 𑠚 𑠛 𑠜 𑠝 𑠞 𑠟 𑠠 𑠡 𑠢 𑠣 𑠤 𑠥 𑠦 𑠧 𑠨 𑠩 𑠪 𑠫 𑠬 𑠭 𑠮 𑠯 𑠰 𑠱 𑠲 𑠳 𑠴 𑠵 𑠶 𑠷 𑠸 𑠹 𑠺 𑠻 𑠼 𑠽 𑠾 𑠿 𑡀 𑡁 𑡂 𑡃 𑡄 𑡅 𑡆 𑡇 𑡈 𑡉 𑡊 𑡋 𑡌 𑡍 𑡎 𑡏 𑡐 𑡑 𑡒 𑡓 𑡔 𑡕 𑡖 𑡗 𑡘 𑡙 𑡚 𑡛 𑡜 𑡝 𑡞 𑡟 𑡠 𑡡 𑡢 𑡣 𑡤 𑡥 𑡦 𑡧 𑡨 𑡩 𑡪 𑡫 𑡬 𑡭 𑡮 𑡯 𑡰 𑡱 𑡲 𑡳 𑡴 𑡵 𑡶 𑡷 𑡸 𑡹 𑡺 𑡻 𑡼 𑡽 𑡾 𑡿 𑢀 𑢁 𑢂 𑢃 𑢄 𑢅 𑢆 𑢇 𑢈 𑢉 𑢊 𑢋 𑢌 𑢍 𑢎 𑢏 𑢐 𑢑 𑢒 𑢓 𑢔 𑢕 𑢖 𑢗 𑢘 𑢙 𑢚 𑢛 𑢜 𑢝 𑢞 𑢟 𑢠 𑢡 𑢢 𑢣 𑢤 𑢥 𑢦 𑢧 𑢨 𑢩 𑢪 𑢫 𑢬 𑢭 𑢮 𑢯 𑢰 𑢱 𑢲 𑢳 𑢴 𑢵 𑢶 𑢷 𑢸 𑢹 𑢺 𑢻 𑢼 𑢽 𑢾 𑢿 𑣀 𑣁 𑣂 𑣃 𑣄 𑣅 𑣆 𑣇 𑣈 𑣉 𑣊 𑣋 𑣌 𑣍 𑣎 𑣏 𑣐 𑣑 𑣒 𑣓 𑣔 𑣕 𑣖 𑣗 𑣘 𑣙 𑣚 𑣛 𑣜 𑣝 𑣞 𑣟 𑣠 𑣡 𑣢 𑣣 𑣤 𑣥 𑣦 𑣧 𑣨 𑣩 𑣪 𑣫 𑣬 𑣭 𑣮 𑣯 𑣰 𑣱 𑣲 𑣳 𑣴 𑣵 𑣶 𑣷 𑣸 𑣹 𑣺 𑣻 𑣼 𑣽 𑣾 𑣿 𑤀 𑤁 𑤂 𑤃 𑤄 𑤅 𑤆 𑤇 𑤈 𑤉 𑤊 𑤋 𑤌 𑤍 𑤎 𑤏 𑤐 𑤑 𑤒 𑤓 𑤔 𑤕 𑤖 𑤗 𑤘 𑤙 𑤚 𑤛 𑤜 𑤝 𑤞 𑤟 𑤠 𑤡 𑤢 𑤣 𑤤 𑤥 𑤦 𑤧 𑤨 𑤩 𑤪 𑤫 𑤬 𑤭 𑤮 𑤯 𑤰 𑤱 𑤲 𑤳 𑤴 𑤵 𑤶 𑤷 𑤸 𑤹 𑤺 𑤻 𑤼 𑤽 𑤾 𑤿 𑥀 𑥁 𑥂 𑥃 𑥄 𑥅 𑥆 𑥇 𑥈 𑥉 𑥊 𑥋 𑥌 𑥍 𑥎 𑥏 𑥐 𑥑 𑥒 𑥓 𑥔 𑥕 𑥖 𑥗 𑥘 𑥙 𑥚 𑥛 𑥜 𑥝 𑥞 𑥟 𑥠 𑥡 𑥢 𑥣 𑥤 𑥥 𑥦 𑥧 𑥨 𑥩 𑥪 𑥫 𑥬 𑥭 𑥮 𑥯 𑥰 𑥱 𑥲 𑥳 𑥴 𑥵 𑥶 𑥷 𑥸 𑥹 𑥺 𑥻 𑥼 𑥽 𑥾 𑥿 𑦀 𑦁 𑦂 𑦃 𑦄 𑦅 𑦆 𑦇 𑦈 𑦉 𑦊 𑦋 𑦌 𑦍 𑦎 𑦏 𑦐 𑦑 𑦒 𑦓 𑦔 𑦕 𑦖 𑦗 𑦘 𑦙 𑦚 𑦛 𑦜 𑦝 𑦞 𑦟 𑦠 𑦡 𑦢 𑦣 𑦤 𑦥 𑦦 𑦧 𑦨 𑦩 𑦪 𑦫 𑦬 𑦭 𑦮 𑦯 𑦰 𑦱 𑦲 𑦳 𑦴 𑦵 𑦶 𑦷 𑦸 𑦹 𑦺 𑦻 𑦼 𑦽 𑦾 𑦿 𑧀 𑧁 𑧂 𑧃 𑧄 𑧅 𑧆 𑧇 𑧈 𑧉 𑧊 𑧋 𑧌 𑧍 𑧎 𑧏 𑧐 𑧑 𑧒 𑧓 𑧔 𑧕 𑧖 𑧗 𑧘 𑧙 𑧚 𑧛 𑧜 𑧝 𑧞 𑧟 𑧠 𑧡 𑧢 𑧣 𑧤 𑧥 𑧦 𑧧 𑧨 𑧩 𑧪 𑧫 𑧬 𑧭 𑧮 𑧯 𑧰 𑧱 𑧲 𑧳 𑧴 𑧵 𑧶 𑧷 𑧸 𑧹 𑧺 𑧻 𑧼 𑧽 𑧾 𑧿 𑨀 𑨁 𑨂 𑨃 𑨄 𑨅 𑨆 𑨇 𑨈 𑨉 𑨊 𑨋 𑨌 𑨍 𑨎 𑨏 𑨐 𑨑 𑨒 𑨓 𑨔 𑨕 𑨖 𑨗 𑨘 𑨙 𑨚 𑨛 𑨜 𑨝 𑨞 𑨟 𑨠 𑨡 𑨢 𑨣 𑨤 𑨥 𑨦 𑨧 𑨨 𑨩 𑨪 𑨫 𑨬 𑨭 𑨮 𑨯 𑨰 𑨱 𑨲 𑨳 𑨴 𑨵 𑨶 𑨷 𑨸 𑨹 𑨺 𑨻 𑨼 𑨽 𑨾 𑨿 𑩀 𑩁 𑩂 𑩃 𑩄 𑩅 𑩆 𑩇 𑩈 𑩉 𑩊 𑩋 𑩌 𑩍 𑩎 𑩏 𑩐 𑩑 𑩒 𑩓 𑩔 𑩕 𑩖 𑩗 𑩘 𑩙 𑩚 𑩛 𑩜 𑩝 𑩞 𑩟 𑩠 𑩡 𑩢 𑩣 𑩤 𑩥 𑩦 𑩧 𑩨 𑩩 𑩪 𑩫 𑩬 𑩭 𑩮 𑩯 𑩰 𑩱 𑩲 𑩳 𑩴 𑩵 𑩶 𑩷 𑩸 𑩹 𑩺 𑩻 𑩼 𑩽 𑩾 𑩿 𑪀 𑪁 𑪂 𑪃 𑪄 𑪅 𑪆 𑪇 𑪈 𑪉 𑪊 𑪋 𑪌 𑪍 𑪎 𑪏 𑪐 𑪑 𑪒 𑪓 𑪔 𑪕 𑪖 𑪗 𑪘 𑪙 𑪚 𑪛 𑪜 𑪝 𑪞 𑪟 𑪠 𑪡 𑪢 𑪣 𑪤 𑪥 𑪦 𑪧 𑪨 𑪩 𑪪 𑪫 𑪬 𑪭 𑪮 𑪯 𑪰 𑪱 𑪲 𑪳 𑪴 𑪵 𑪶 𑪷 𑪸 𑪹 𑪺 𑪻 𑪼 𑪽 𑪾 𑪿 𑫀 𑫁 𑫂 𑫃 𑫄 𑫅 𑫆 𑫇 𑫈 𑫉 𑫊 𑫋 𑫌 𑫍 𑫎 𑫏 𑫐 𑫑 𑫒 𑫓 𑫔 𑫕 𑫖 𑫗 𑫘 𑫙 𑫚 𑫛 𑫜 𑫝 𑫞 𑫟 𑫠 𑫡 𑫢 𑫣 𑫤 𑫥 𑫦 𑫧 𑫨 𑫩 𑫪 𑫫 𑫬 𑫭 𑫮 𑫯 𑫰 𑫱 𑫲 𑫳 𑫴 𑫵 𑫶 𑫷 𑫸 𑫹 𑫺 𑫻 𑫼 𑫽 𑫾 𑫿 𑬀 𑬁 𑬂 𑬃 𑬄 𑬅 𑬆 𑬇 𑬈 𑬉 𑬊 𑬋 𑬌 𑬍 𑬎 𑬏 𑬐 𑬑 𑬒 𑬓 𑬔 𑬕 𑬖 𑬗 𑬘 𑬙 𑬚 𑬛 𑬜 𑬝 𑬞 𑬟 𑬠 𑬡 𑬢 𑬣 𑬤 𑬥 𑬦 𑬧 𑬨 𑬩 𑬪 𑬫 𑬬 𑬭 𑬮 𑬯 𑬰 𑬱 𑬲 𑬳 𑬴 𑬵 𑬶 𑬷 𑬸 𑬹 𑬺 𑬻 𑬼 𑬽 𑬾 𑬿 𑭀 𑭁 𑭂 𑭃 𑭄 𑭅 𑭆 𑭇 𑭈 𑭉 𑭊 𑭋 𑭌 𑭍 𑭎 𑭏 𑭐 𑭑 𑭒 𑭓 𑭔 𑭕 𑭖 𑭗 𑭘 𑭙 𑭚 𑭛 𑭜 𑭝 𑭞 𑭟 𑭠 𑭡 𑭢 𑭣 𑭤 𑭥 𑭦 𑭧 𑭨 𑭩 𑭪 𑭫 𑭬 𑭭 𑭮 𑭯 𑭰 𑭱 𑭲 𑭳 𑭴 𑭵 𑭶 𑭷 𑭸 𑭹 𑭺 𑭻 𑭼 𑭽 𑭾 𑭿 𑮀 𑮁 𑮂 𑮃 𑮄 𑮅 𑮆 𑮇 𑮈 𑮉 𑮊 𑮋 𑮌 𑮍 𑮎 𑮏 𑮐 𑮑 𑮒 𑮓 𑮔 𑮕 𑮖 𑮗 𑮘 𑮙 𑮚 𑮛 𑮜 𑮝 𑮞 𑮟 𑮠 𑮡 𑮢 𑮣 𑮤 𑮥 𑮦 𑮧 𑮨 𑮩 𑮪 𑮫 𑮬 𑮭 𑮮 𑮯 𑮰 𑮱 𑮲 𑮳 𑮴 𑮵 𑮶 𑮷 𑮸 𑮹 𑮺 𑮻 𑮼 𑮽 𑮾 𑮿 𑯀 𑯁 𑯂 𑯃 𑯄 𑯅 𑯆 𑯇 𑯈 𑯉 𑯊 𑯋 𑯌 𑯍 𑯎 𑯏 𑯐 𑯑 𑯒 𑯓 𑯔 𑯕 𑯖 𑯗 𑯘 𑯙 𑯚 𑯛 𑯜 𑯝 𑯞 𑯟 𑯠 𑯡 𑯢 𑯣 𑯤 𑯥 𑯦 𑯧 𑯨 𑯩 𑯪 𑯫 𑯬 𑯭 𑯮 𑯯 𑯰 𑯱 𑯲 𑯳 𑯴 𑯵 𑯶 𑯷 𑯸 𑯹 𑯺 𑯻 𑯼 𑯽 𑯾 𑯿 𑰀 𑰁 𑰂 𑰃 𑰄 𑰅 𑰆 𑰇 𑰈 𑰉 𑰊 𑰋 𑰌 𑰍 𑰎 𑰏 𑰐 𑰑 𑰒 𑰓 𑰔 𑰕 𑰖 𑰗 𑰘 𑰙 𑰚 𑰛 𑰜 𑰝 𑰞 𑰟 𑰠 𑰡 𑰢 𑰣 𑰤 𑰥 𑰦 𑰧 𑰨 𑰩 𑰪 𑰫 𑰬 𑰭 𑰮 𑰯 𑰰 𑰱 𑰲 𑰳 𑰴 𑰵 𑰶 𑰷 𑰸 𑰹 𑰺 𑰻 𑰼 𑰽 𑰾 𑰿 𑱀 𑱁 𑱂 𑱃 𑱄 𑱅 𑱆 𑱇 𑱈 𑱉 𑱊 𑱋 𑱌 𑱍 𑱎 𑱏 𑱐 𑱑 𑱒 𑱓 𑱔 𑱕 𑱖 𑱗 𑱘 𑱙 𑱚 𑱛 𑱜 𑱝 𑱞 𑱟 𑱠 𑱡 𑱢 𑱣 𑱤 𑱥 𑱦 𑱧 𑱨 𑱩 𑱪 𑱫 𑱬 𑱭 𑱮 𑱯 𑱰 𑱱 𑱲 𑱳 𑱴 𑱵 𑱶 𑱷 𑱸 𑱹 𑱺 𑱻 𑱼 𑱽 𑱾 𑱿 𑲀 𑲁 𑲂 𑲃 𑲄 𑲅 𑲆 𑲇 𑲈 𑲉 𑲊 𑲋 𑲌 𑲍 𑲎 𑲏 𑲐 𑲑 𑲒 𑲓 𑲔 𑲕 𑲖 𑲗 𑲘 𑲙 𑲚 𑲛 𑲜 𑲝 𑲞 𑲟 𑲠 𑲡 𑲢 𑲣 𑲤 𑲥 𑲦 𑲧 𑲨 𑲩 𑲪 𑲫 𑲬 𑲭 𑲮 𑲯 𑲰 𑲱 𑲲 𑲳 𑲴 𑲵 𑲶 𑲷 𑲸 𑲹 𑲺 𑲻 𑲼 𑲽 𑲾 𑲿 𑳀 𑳁 𑳂 𑳃 𑳄 𑳅 𑳆 𑳇 𑳈 𑳉 𑳊 𑳋 𑳌 𑳍 𑳎 𑳏 𑳐 𑳑 𑳒 𑳓 𑳔 𑳕 𑳖 𑳗 𑳘 𑳙 𑳚 𑳛 𑳜 𑳝 𑳞 𑳟 𑳠 𑳡 𑳢 𑳣 𑳤 𑳥 𑳦 𑳧 𑳨 𑳩 𑳪 𑳫 𑳬 𑳭 𑳮 𑳯 𑳰 𑳱 𑳲 𑳳 𑳴 𑳵 𑳶 𑳷 𑳸 𑳹 𑳺 𑳻 𑳼 𑳽 𑳾 𑳿 𑴀 𑴁 𑴂 𑴃 𑴄 𑴅 𑴆 𑴇 𑴈 𑴉 𑴊 𑴋 𑴌 𑴍 𑴎 𑴏 𑴐 𑴑 𑴒 𑴓 𑴔 𑴕 𑴖 𑴗 𑴘 𑴙 𑴚 𑴛 𑴜 𑴝 𑴞 𑴟 𑴠 𑴡 𑴢 𑴣 𑴤 𑴥 𑴦 𑴧 𑴨 𑴩 𑴪 𑴫 𑴬 𑴭 𑴮 𑴯 𑴰 𑴱 𑴲 𑴳 𑴴 𑴵 𑴶 𑴷 𑴸 𑴹 𑴺 𑴻 𑴼 𑴽 𑴾 𑴿 𑵀 𑵁 𑵂 𑵃 𑵄 𑵅 𑵆 𑵇 𑵈 𑵉 𑵊 𑵋 𑵌 𑵍 𑵎 𑵏 𑵐 𑵑 𑵒 𑵓 𑵔 𑵕 𑵖 𑵗 𑵘 𑵙 𑵚 𑵛 𑵜 𑵝 𑵞 𑵟 𑵠 𑵡 𑵢 𑵣 𑵤 𑵥 𑵦 𑵧 𑵨 𑵩 𑵪 𑵫 𑵬 𑵭 𑵮 𑵯 𑵰 𑵱 𑵲 𑵳 𑵴 𑵵 𑵶 𑵷 𑵸 𑵹 𑵺 𑵻 𑵼 𑵽 𑵾 𑵿 𑶀 𑶁 𑶂 𑶃 𑶄 𑶅 𑶆 𑶇 𑶈 𑶉 𑶊 𑶋 𑶌 𑶍 𑶎 𑶏 𑶐 𑶑 𑶒 𑶓 𑶔 𑶕 𑶖 𑶗 𑶘 𑶙 𑶚 𑶛 𑶜 𑶝 𑶞 𑶟 𑶠 𑶡 𑶢 𑶣 𑶤 𑶥 𑶦 𑶧 𑶨 𑶩 𑶪 𑶫 𑶬 𑶭 𑶮 𑶯 𑶰 𑶱 𑶲 𑶳 𑶴 𑶵 𑶶 𑶷 𑶸 𑶹 𑶺 𑶻 𑶼 𑶽 𑶾 𑶿 𑷀 𑷁 𑷂 𑷃 𑷄 𑷅 𑷆 𑷇 𑷈 𑷉 𑷊 𑷋 𑷌 𑷍 𑷎 𑷏 𑷐 𑷑 𑷒 𑷓 𑷔 𑷕 𑷖 𑷗 𑷘 𑷙 𑷚 𑷛 𑷜 𑷝 𑷞 𑷟 𑷠 𑷡 𑷢 𑷣 𑷤 𑷥 𑷦 𑷧 𑷨 𑷩 𑷪 𑷫 𑷬 𑷭 𑷮 𑷯 𑷰 𑷱 𑷲 𑷳 𑷴 𑷵 𑷶 𑷷 𑷸 𑷹 𑷺 𑷻 𑷼 𑷽 𑷾 𑷿 𑸀 𑸁 𑸂 𑸃 𑸄 𑸅 𑸆 𑸇 𑸈 𑸉 𑸊 𑸋 𑸌 𑸍 𑸎 𑸏 𑸐 𑸑 𑸒 𑸓 𑸔 𑸕 𑸖 𑸗 𑸘 𑸙 𑸚 𑸛 𑸜 𑸝 𑸞 𑸟 𑸠 𑸡 𑸢 𑸣 𑸤 𑸥 𑸦 𑸧 𑸨 𑸩 𑸪 𑸫 𑸬 𑸭 𑸮 𑸯 𑸰 𑸱 𑸲 𑸳 𑸴 𑸵 𑸶 𑸷 𑸸 𑸹 𑸺 𑸻 𑸼 𑸽 𑸾 𑸿 𑹀 𑹁 𑹂 𑹃 𑹄 𑹅 𑹆 𑹇 𑹈 𑹉 𑹊 𑹋 𑹌 𑹍 𑹎 𑹏 𑹐 𑹑 𑹒 𑹓 𑹔 𑹕 𑹖 𑹗 𑹘 𑹙 𑹚 𑹛 𑹜 𑹝 𑹞 𑹟 𑹠 𑹡 𑹢 𑹣 𑹤 𑹥 𑹦 𑹧 𑹨 𑹩 𑹪 𑹫 𑹬 𑹭 𑹮 𑹯 𑹰 𑹱 𑹲 𑹳 𑹴 𑹵 𑹶 𑹷 𑹸 𑹹 𑹺 𑹻 𑹼 𑹽 𑹾 𑹿 𑺀 𑺁 𑺂 𑺃 𑺄 𑺅 𑺆 𑺇 𑺈 𑺉 𑺊 𑺋 𑺌 𑺍 𑺎 𑺏 𑺐 𑺑 𑺒 𑺓 𑺔 𑺕 𑺖 𑺗 𑺘 𑺙 𑺚 𑺛 𑺜 𑺝 𑺞 𑺟 𑺠 𑺡 𑺢 𑺣 𑺤 𑺥 𑺦 𑺧 𑺨 𑺩 𑺪 𑺫 𑺬 𑺭 𑺮 𑺯 𑺰 𑺱 𑺲 𑺳 𑺴 𑺵 𑺶 𑺷 𑺸 𑺹 𑺺 𑺻 𑺼 𑺽 𑺾 𑺿 𑻀 𑻁 𑻂 𑻃 𑻄 𑻅 𑻆 𑻇 𑻈

The specimens in this section therefore use normal-width continuous text rather than isolated character strings. They exercise paragraph composition, line breaking, punctuation, regional glyph forms, Hangul composition, historical jamo, supplementary-plane ideographs, and mixed-script runs. A compact table at the end isolates shared Han codepoints for direct visual comparison.

6.1 Chinese

Mainland Simplified Chinese — Noto SC This paragraph uses the explicit Simplified Chinese family throughout.

现代中文排版并不只是把一个个汉字依次放进页面。一个真正的正文环境还需要同时处理标点、数字、书名号、引号、括号以及连续句子之间的换行关系，并且在较长的段落中保持稳定的字面和行距。对于共享的汉字码位，不同地区使用的字体还可能给出不同的字形，因此同一个“骨、直、令、具、角”在不同字体家族中会表现出细微而稳定的区域差异。这里使用一整段连续的简体中文来检查大陆简体字形、标点悬挂附近的布局、正常段落换行以及本地字体选择在长文本中是否能够始终保持有效，而不是只验证几个孤立字符能不能显示。

Mainland Traditional Chinese — Noto SC Traditional characters can also be deliberately typeset through the Mainland Chinese family. This separates character repertoire from regional glyph selection: traditional codepoints do not by themselves imply a Taiwan or Hong Kong font.

现代中文排版并不只是把一个个汉字依次放进页面。一个真正的正文环境还需要同时处理标点、数字、书名号、引号、括号以及连续句子之间的换行关系，并且在较长的段落中保持稳定的字面和行距。对于共享的汉字码位，不同地区使用的字体还可能给出不同的字形，因此同一个「骨、直、令、具、角」在不同字体家族中会表现出细微而稳定的区域差异。这里特意使用传统汉字而仍然选择大陆字体家族，以检查字符繁简与地域字形选择能否保持彼此独立，并观察长段落中共享汉字、繁体字和全角标点的连续排版。

Taiwan Traditional Chinese — Noto TC The Taiwan family is tested with continuous Taiwan Traditional Chinese rather than with a short regional-glyph sample.

正體中文的正文排版除了字符本身之外，也牽涉字型、標點、行距與段落節奏。當文件同時包含不同語言或不同地區的漢字時，程式不能僅依 Unicode 碼位猜測應採用哪一套地區字形，而應由明確的語言或字型選擇來決定。這個段落使用臺灣正體字型，

並刻意包含「骨、直、令、具、角、門、國、學、龍」等適合觀察地區字形差異的共享漢字，同時加入引號、頓號、逗號與句號，藉此確認較長的正體中文內容在正常欄寬中能自然換行，而且從段首到段末始終維持同一個本地 CJK family。

Document Traditional Chinese – Shanggu The following paragraph is deliberately left completely unwrapped. It therefore remains under the document CJK family, Shanggu, and provides the control against which the explicit Chinese, Japanese, and Korean families can be compared.

漢字進入現代數位排版之後，同一個編碼往往可以由許多不同的字體呈現，而字形的歷史層次、地域習慣和設計風格並不會因此消失。傳統中文尤其適合用來觀察這種情形：有些字在不同地區的正文中結構略異，有些字的筆形和部件位置不同，而另一些差別只有在一整段文字的灰度與節奏中才會顯現。這個段落不使用任何語言專用命令，使所有漢字直接落入文件的 Shanggu CJK family；因此它不只是檢查單字是否存在，也檢查文件級 CJK 選擇在較長的連續文本、標點和自動換行之間能否穩定維持。

6.2 Korean and Historical Hangul

Modern Korean – Hangul The first Korean specimen deliberately avoids Hanja. It tests ordinary modern Hangul composition, punctuation, word spacing, and paragraph wrapping.

한글로 쓰인 긴 문장은 여러 음절 블록이 끊임없이 이어지면서도 낱말 사이의 간격과 문장 부호의 위치가 자연스럽게 유지되어야 한다. 짧은 보기에서는 글꼴이 몇 글자를 제대로 보여 주는지만 확인할 수 있지만, 실제 문단에서는 줄 끝에서 낱말이 어떻게 배치되는지, 괄호와 따옴표가 앞뒤 글자와 어떻게 어울리는지, 여러 줄을 지나도 같은 글꼴 선택이 계속 유지되는지를 함께 살펴볼 수 있다. 이 문단은 완성형 한글이 이어지는 일반적인 한국어 본문을 충분히 길게 배치하여 문장 전체의 모양과 줄 간격을 확인하고, 뒤에 나오는 한자 혼용문과 옛한글 자료를 비교하기 위한 현대 한글 기준 표본으로 사용한다.

Modern Korean – mixed Hanja and Hangul The next paragraph keeps Hangul and Hanja inside a single explicit Korean family. Shared Han characters must therefore retain Korean regional forms without interrupting the surrounding Hangul text.

韓國語의 現代 文體는 오늘날 대체로 한글만으로 적지만, 歷史、言語、哲學、法律과 같은 분야에서는 漢字를 함께 적은 문헌을 어렵지 않게 만날 수 있다. 이런 漢字混用文을 조판할 때에는 한글 音節과 句讀點 사이에 들어가는 漢字가 갑자기 다른 地域 字形으로 바뀌지 않아야 하며, 韓國、朝鮮、漢字、文化、文字와 같은 어휘도 앞뒤의 한글 문맥과 한 family 안에서 자연스럽게 이어져야 한다. 이 문단은 國語의 읽기 흐름을 유지하면서 여

러 漢字語와 고유어를 섞어, 실제 문헌에서 볼 수 있는 긴 혼용문이 줄바꿈을 거처도 안정적으로 조판되는지를 시험한다.

Jeju language — corpus specimen Jeju is useful here because practical orthographies make active use of the arae-a and decomposed Hangul sequences that are rare in ordinary modern Korean. The following is a composite regression specimen assembled from short attested Jeju-language passages rather than a newly invented “standard” Jeju paragraph.

제주말 (濟州말) 은 제주섬서 글아지는 말이다. 제주말모음은 시간 지나명 여러 가지 변화가 이섯다. 제주섬은 한라산광 주깃디 오름덜록 일뤰진 섬이라. 옛적 화산활동으록 굼부리가 꺾성 곤데곤데 으라 오름이 하영 샷다. 낭 (木) 은 나무질로 뉘 줄기를 가지고 잇인 여러해살이 식물이다. 제주말 위키백과 또시는 제주어 위키백과는 제주말로 운영험신 위키백과 언어판이라.

Middle Korean and Old Hangul — historical corpus specimen The historical specimen deliberately retains decomposed jamo and tone marks. Rather than normalizing several sources into modern spelling, short genuine historical fragments are placed consecutively to form a paragraph-level shaping regression.

나·랏·말·ㅈ·미·中·듀 。國·국·에 달·아문·쥬·와로서·르·스·뭇·디아·니·힐·썩 ·아기·빅·여·셔·과
굴·이·가·숨·알·파·주·글·뎡·허·거·든 두·들·겐 開·關·홀 켓·므·리 疏·通·호고·남·근 古·今·엿·남·기·섯
것·도·다 머·리·알·포·고·고·히·막·고 머·리·와·눈·괘·환·티·아·니·커·든 ·긔·운·이·우·호·로·울·아
머·리·알·포·미·뽻·리·는 ·뎡·거·든 녀·고·큰 天·造·스·이·에 다·솔·며 어·즈·러·우·민·들 엿·디·덜·덜·흔 數
| 리·오

The corpus paragraph above tests realistic historical material. The following synthetic boundary sequence has a different purpose: it explicitly crosses Hangul Jamo Extended-A, ordinary Jamo, and Extended-B while remaining inside one shaping run.

·맏

Modern decomposed control:

각

6.3 Japanese and Ryukyuan

Modern Japanese Modern Japanese combines kana, regional Han forms, punctuation, and frequent script changes inside the same sentence. The entire paragraph remains under the explicit Japanese family.

現代日本語の文章では、漢字、ひらがな、カタカナが一つの段落の中で何度も切り替わり、句読点や括弧、かぎ括弧も連続して現れる。短い文字列だけではフォントが表示できることしか分からないが、長い本文にすると、漢字と仮名の大きさの釣り合い、約物の位置、行末での折り返し、そして次の行へ移った後の字形の連続性まで確認できる。この段落では「日本語」「漢字」「文字」「学校」「文化」「骨」「直」「令」「具」「角」などを通常の文脈に入れ、日本語用の地域字形を保ったまま複数行の文章が安定して組版されるかを試している。

Historical kana orthography The opening sentence below is historical text; the continuation is a showcase-written regression passage that deliberately retains historical kana spellings such as ゐる, やう, and 言ふ. This keeps the specimen long enough for paragraph testing without presenting newly written material as an archival transcription.

真夏の宿屋は空虚であつた。窓の外には白い雲がゆつくり流れ、庭の木立では蟬が絶えず鳴いてゐる。旅人は古い椅子に腰をおろし、まだ來ない馬車の音を待ちながら、時計の針ばかりを眺めてゐた。誰も何も言はないので、午後の光だけが廊下を少しづつ移つて行くやうに見えた。かうして長い時間が過ぎても、玄關の戸は一度も開かず、遠くの道から聞えて來る物音だけが、時々静かな宿の空氣を動かしてゐるのであつた。

Japanese Kanbun The first sentence is taken from Rai San'yō's *Nihon Gaishi*; the remainder is a showcase-written Kanbun-style regression continuation. The purpose here is typographic: Japanese Han glyphs must remain selected even when no kana occur in the run.

外史氏曰、吾讀舊志、見鳥羽帝時數下制符。蓋日本文章之傳、漢籍之學與國史之記相因而久矣。昔之學者讀經史、作序記、論人物、述治亂、多用漢文而各成其體。今取其字列於一段、所以驗日本字形之連續、句讀之位置、長行之折返、以及共享漢字在無假名介入時亦不離其本地字體也。文字雖同出一碼、而骨直令具角門國學龍諸字之形、隨地域字體而微異、故尤宜以連續文章觀之。

Okinawan — corpus specimen Okinawan is represented by a composite specimen from the Wikimedia Okinawan test project. Its mixed use of kana and Han characters makes it a

useful additional Japanese-family regression, while the orthography should not be read as a claim that one universal Okinawan spelling standard exists.

沖縄口えー琉球諸語ぬてい壺ちやいびーん。うちなーぐちぬ首里那覇方言おー琉球国ぬじょーま言葉やびたん。琉球王國や、昔ジジ中心んかい存在さる王国やたん。王や首里天加那志とう言ん。首里城や、沖縄県ぬ城やん。琉球王朝ぬ王城っし、沖縄県ぬいっちゃん大さるぐしくやん。漢字えー、大昔唐ぬ国んかいそーじー現りーる文字ぬていーちやん。やまとう、高麗、るーちゅー、ベトナムおー、大昔唐ぬ国から漢字伝わていちゃん。

Ainu Ainu written in the modern katakana orthography makes extensive use of Katakana Phonetic Extensions for syllable-final consonants. The following specimen therefore exercises ordinary katakana together with characters such as ク, シ, ム, ラ, and the combining form プ inside continuous text.

イタクプリカ ソモネコロカ シサムモシリ モシリソカワ チヌムケニシパ
チヌムケ カッケマツ ウタペラリワ オカウシケタ クニネネワ アイヌイタク
アニ クイタクルウェ ネワネヤクン ラモッシワノ クヤイライケプ ネルウェ
タパンナ。エエパキタ カニアナクネ アイヌモシリ シシリムカ ニプタニコタ
ン コアパマカ クネルウェネ ウッチケクニプ ラカサッペ。

6.4 Vietnamese

The same constitutional passage is used throughout this subsection so that the specimens differ primarily in writing system or font selection rather than in linguistic content. Quốc Ngũ is first typeset with the document Latin family, Libertinus, and then with the dedicated Vietnamese family. The corresponding Hán-Nôm text uses the VinaWiki repertoire.

Quốc Ngũ – document Latin family The first specimen is deliberately unwrapped and therefore remains in the document Latin family, Libertinus. It tests Vietnamese diacritics without a language-specific font override.

Trải qua mấy nghìn năm lịch sử, Nhân dân Việt Nam lao động cần cù, sáng tạo, đấu tranh anh dũng để dựng nước và giữ nước, đã hun đúc nên truyền thống yêu nước, đoàn kết, nhân nghĩa, kiên cường, bất khuất và xây dựng nên nền văn hiến Việt Nam. Từ năm 1930, dưới sự lãnh đạo của Đảng Cộng sản Việt Nam do Chủ tịch Hồ Chí Minh sáng lập và rèn luyện, Nhân dân ta tiến hành cuộc đấu tranh lâu dài, đầy gian khổ, hy sinh vì độc lập, tự do của dân tộc, vì hạnh phúc của Nhân dân. Cách mạng tháng Tám thành công, ngày 2 tháng 9 năm 1945, Chủ

𪗇𪗈，𪗉𪗊𪗋𪗌𪗍𪗎𪗏𪗐，𪗑𪗒𪗓𪗔𪗕𪗖𪗗，𪗘𪗙𪗚𪗛𪗜𪗝𪗞，𪗟𪗠𪗡𪗢𪗣𪗤𪗥，𪗦𪗧𪗨𪗩𪗪𪗫𪗬𪗭𪗮𪗯𪗰𪗱𪗲𪗳𪗴𪗵𪗶𪗷𪗸𪗹𪗺𪗻𪗼𪗽𪗾𪗿。

6.6 WenJin Multi-Plane Coverage

WenJin is different from the language-specific families above. It is exposed as one public local family whose internal fallback configuration spans multiple CJK planes. The paragraph below is therefore intentionally a coverage stress test rather than a linguistic specimen: ordinary Han text is interleaved with supplementary-plane characters while the public command remains unchanged.

中國文字的編碼範圍遠遠超過基本多文種平面，因此只測試一二三天地玄黃這類常用字並不足以確認大型漢字字體的覆蓋是否正常。這一段先由普通漢字開始，隨後插入第二平面的𪗇、𪗈、𪗉、𪗊、𪗋、𪗌、𪗍、𪗎，再回到典籍文字與古今學術，之後繼續進入第三平面的𪗏、𪗐、𪗑、𪗒、𪗓、𪗔、𪗕、𪗖、𪗗。當不同平面的字符在同一個長段落中交錯出現時，使用者仍然只看見一個 \WJ family；Plane 0、Plane 2 和 Plane 3 的具體 fallback 應由內部配置完成，而不應要求正文作者為不同 Unicode plane 手動切換命令。

The following table complements the paragraph test with deterministic block coverage samples. For each CJK Unified Ideographs block, the first twenty encoded ideographs are shown. This makes missing coverage or an incorrect Plane 0, Plane 2, or Plane 3 fallback immediately visible and keeps the regression sample stable across releases.

6.7 Regional Forms of Shared Han Characters

The preceding specimens test normal paragraphs. Only here are shared codepoints deliberately isolated. Every cell below contains the same Unicode character; the visible difference should therefore come from the selected regional family rather than from different encoded variants.

7 Document Features

feature system (composable document modules) is demonstrated throughout this PDF, but this section gives each major public feature an explicit specimen as well. The showcase therefore tests not only isolated modules but also whether they coexist in a realistic document.

Table 5: WenJin CJK block coverage

Block	Range	Twenty-character specimen
CJK Unified Ideographs	U+4E00–U+9FFF	一丁丂七上丅丅万丈三上 下丅丅丅丅丅丅丅丅丅丅
Extension A	U+3400–U+4DBF	止因崑个牛×月𠂔𠂔𠂔𠂔 𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔
Extension B	U+20000–U+2A6DF	𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔 𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔
Extension C	U+2A700–U+2B73F	𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔 𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔
Extension D	U+2B740–U+2B81F	𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔 𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔
Extension E	U+2B820–U+2CEAF	𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔 𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔
Extension F	U+2CEB0–U+2EBEF	𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔 𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔
Extension I	U+2EBF0–U+2EE5F	𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔 𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔
Extension G	U+30000–U+3134F	𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔 𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔
Extension H	U+31350–U+323AF	𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔 𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔
Extension J	U+323B0–U+3347F	𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔 𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔𠂔

Table 6: Regional forms of shared Han codepoints

Character	Shanggu	Noto SC	Noto TC	Japanese	Korean
骨	骨	骨	骨	骨	骨
直	直	直	直	直	直
令	令	令	令	令	令
具	具	具	具	具	具
角	角	角	角	角	角
門	門	門	門	門	門
國	國	國	國	國	國
學	學	學	學	學	學
龍	龍	龍	龍	龍	龍

7.1 Mathematics

Mathematical font selection is deliberately left at IMPE's default setting. The following single display combines several common mathematical alphabets, operators, delimiters, accents, matrices, integrals, sums, limits, radicals, and nested scripts as a compact stress specimen.

$$\begin{aligned}
\mathcal{Z}_{\beta,\mu} &:= \text{Tr}_{\mathcal{H}} \exp \left[-\beta \left(\widehat{\mathbf{H}} - \mu \widehat{\mathbf{N}} \right) \right] \\
&= \sum_{n=0}^{\infty} \frac{1}{n!} \int_{\mathbb{R}^{3n}} \prod_{j=1}^n \frac{d^3 \mathbf{p}_j}{(2\pi\hbar)^3} \exp \left[-\sum_{j=1}^n \sqrt{m_j^2 c^4 + c^2 \|\mathbf{p}_j\|^2} \right] \\
&\quad \times \det \left(\begin{array}{ccc} \frac{\partial^2 \mathcal{L}}{\partial q^i \partial q^j} & \nabla_{\mu} F^{\mu\nu} & \langle \psi | \widehat{\mathbf{H}} | \phi \rangle \\ \sum_{k=1}^{\infty} \frac{(-1)^{k+1}}{k^2} & \sqrt[3]{1 + \sqrt{1 + \lambda^2}} & \frac{\mathbb{E}[X^4] - 3\mathbb{E}[X^2]^2}{\text{Var}(X)^2} \\ \oint_{|z|=1} \frac{\log(1+z)}{z^{r+1}} dz & \prod_{p \in \mathbb{P}} (1 - p^{-s})^{-1} & \lim_{\varepsilon \rightarrow 0^+} \frac{f(x+\varepsilon) - f(x-\varepsilon)}{2\varepsilon} \end{array} \right) \\
&\quad + \underbrace{\widetilde{\mathbf{A}}_{\mu}^{\dagger \nu} \overline{\mathbf{B}}_{\nu}^{\rho} \widehat{\mathbf{C}}_{\rho}^{\mu}}_{\text{accented tensor contraction}} + \frac{\Gamma(\frac{1}{2} + i\alpha) \zeta(2s)}{\sqrt{2\pi\sigma^2}} \\
&\quad + \begin{cases} e^{-1/x^2} \sin(\pi/x), & x \neq 0, \\ 0, & x = 0, \end{cases} \\
&\quad \xrightarrow[\alpha \rightarrow 0]{\beta \rightarrow \infty} \left(\bigoplus_{j=1}^r \mathbb{C}^{n_j} \right) \otimes \bigwedge^k V \\
&\quad \implies \mathbb{P}(|X - \mathbb{E}[X]| \geq t) \leq \frac{\text{Var}(X)}{t^2}, \quad t > 0, \\
&\quad \alpha, \beta, \gamma, \delta, \varepsilon, \theta, \vartheta, \lambda, \mu, \nu, \xi, \pi, \varpi, \rho, \varrho, \sigma, \phi, \varphi, \chi, \psi, \omega \in \mathbb{R}.
\end{aligned}$$

7.2 Tables

Table 7 uses the IMPE book-table environment rather than a raw `tabular` wrapper.

7.3 Lists and Example Blocks

A normal list remains ordinary $\text{\LaTeX}$:

1. automatic font ownership;

Table 7: Feature integration summary

Feature	Public route	Exercised here
Mathematics	<code>math</code>	yes
Tables	<code>tables</code>	yes
Images	<code>image</code>	yes
Citations	<code>citations</code>	yes
Index	<code>index</code>	yes
Hyperlinks	<code>hyperlinks</code>	yes
Running headers	<code>headers</code>	yes
List environments	<code>lists_envs</code>	yes

2. script-specific behavior where required;
3. reusable document features;
4. stable public interfaces.

The IMPE `ExampleBlock` environment provides a distinct indented specimen:

A canonical showcase should be readable as a document, useful as a visual regression specimen, and representative of the public interface that new documents are expected to use.

7.4 Images

The image feature is exercised with the standard $\text{\TeX}$ distribution’s example image when it is available. This keeps the canonical source self-contained without committing an otherwise meaningless binary illustration.

Figure 1 also exercises cross-reference hyperlinks.

7.5 Citations and Bibliography

Citation support is loaded through the feature system and configured before feature activation. A normal textual citation can therefore be written as Knuth (1984), while a parenthetical citation appears as (Knuth, 1984).

The bibliography is printed near the end of the document.

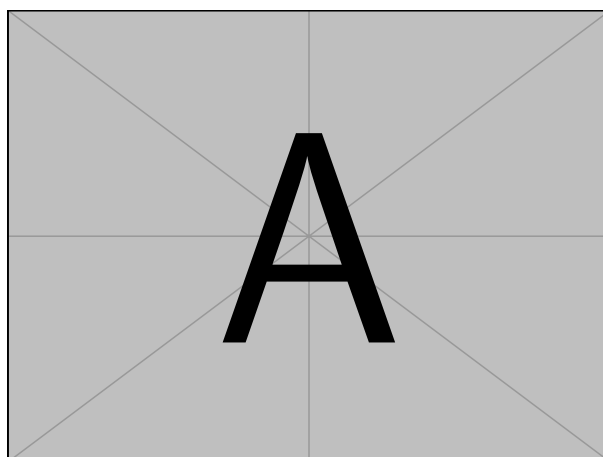


Figure 1: Image-feature specimen using the standard $\text{\TeX}$ example image.

7.6 Index Terms

Several concepts in earlier sections were inserted with the public `\Term` interface. For example, **canonical showcase** (release-time specimen) itself is now indexed. The generated index at the end of the PDF therefore also exercises indexed terms, optional descriptions, and hyperlinks back to their first occurrence.

7.7 Hyperlinks, Footnotes, and Running Headers

The table of contents is clickable, numbered headings carry stable targets, and section headings can link back toward their table-of-contents entries. The running header above this page is produced by the `headers` feature.

Footnote markers are also bidirectional.²

For an external-link specimen, the project repository can be represented with a normal hyperlink: [IMPE \$\text{\LaTeX}\$ System on GitHub](#).

References

Knuth, D. E. (1984). *The texbook*. Addison-Wesley.

²Clicking the footnote marker jumps to this note; the note marker can link back to the original position.

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