The \texttt{fixjfm} package\textsuperscript{*}\textsuperscript{†}

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Abstract

This package fixes several bugs in the JFM format. Both \LaTeX{} and \plain\TeX{} are supported.

1 Introduction

The JFM format is an extension of the TFM format and is used for typesetting CJK characters with \*\p\TeX{}. It works perfectly under almost all circumstances, but there are still at least two bugs:

- Bug 1: the indentation is incorrect if the first character of a paragraph is an opening fullwidth punctuation mark, see Figure 1;
- Bug 2: the spacing between two consecutive fullwidth punctuation marks cannot be adjusted if the font is changed there, see Table 1.

Figure 1: Comparison of the indentation produced without this package (left) and with this package (right)

Table 1: Comparison of the adjustment of the spacing between two consecutive fullwidth punctuation marks

<table>
<thead>
<tr>
<th>Font change</th>
<th>This package</th>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>no</td>
<td>either no or yes</td>
<td>\`\llap{，} “，”</td>
<td>\`\llap{，} “，”</td>
</tr>
<tr>
<td>yes</td>
<td>no</td>
<td>\<code>\llap{，} \texttt{\</code>\llap{，} “，”}</td>
<td>\`\llap{，} “，”</td>
</tr>
<tr>
<td>yes</td>
<td>yes</td>
<td>\<code>\llap{，} \texttt{\</code>\llap{，} “，”}</td>
<td>\`\llap{，} “，”</td>
</tr>
</tbody>
</table>

It seems that macro is the easiest solution to these problems. However, the second bug can only be fixed when using \*\(\varepsilon\)-(u)\p\TeX{} or \Ap\TeX{} (under most, but

\textsuperscript{*}CTAN Homepage: \url{https://ctan.org/pkg/fixjfm}

\textsuperscript{†}Repository: \url{https://github.com/Man-Ting-Fang/fixjfm}
not all circumstances), because the primitive \lastnodechar which is introduced
by ε-p\TeX is required. Anyhow, using this package with p\TeX or any one of
its derivatives does not hurt. Please also keep in mind that owing to technical
limitations, this package is not a panacea.

There is also another improvement: \leavevmode is redefined as \quitvmode
if the latter is available as a primitive (among all *\TeX engines to date, only
Ap\TeX has \quitvmode). So after loading this package, you can always use
\leavevmode and need not worry about \quitvmode. If you are wondering
about what the difference between them is, please see The pdf\TeX user manual.

2 Basic usage

This package has no options. It is recommended that this package should be
loaded before any other packages. If you are using \LaTeX, load this package at
the beginning of your preamble:

\documentclass...
\usepackage{fixjfm}

or even before \documentclass (use \RequirePackage instead):

\RequirePackage{fixjfm}
\documentclass...

If you are using plain \TeX, put the following line near the beginning of your
.tex file:

\input fixjfm.sty

After loading this package, the first bug mentioned above can be automatically
fixed under most (but not all) circumstances. If you find that it cannot be fixed
somewhere, you can add \ for manually before the opening fullwidth punctuation
mark which begins the paragraph.

In the case of the second bug mentioned above, the situation is different. If
you are using \LaTeX, \textmc and \textgt are redefined by default so that the
bug can be automatically fixed (again, under most, but not all circumstances).
However, \mcfamily and \gtfamily remain unchanged. The difference here
is similar to that between, say, \textit and \itshape: \textit automatically
takes care of any necessary italic correction on either side of the argument, while
\itshape does nothing about that. Just like \itshape and \/, you should add

\fixjfmspacing

by yourself after the font change that appears between two consecutive fullwidth
punctuation marks. For example:

□□, {\gtfamily\fixjfmspacing “□□” }\fixjfmspacing “□□”

If you are using plain \TeX, you should always add \fixjfmspacing by yourself,
because plain (*\TeX does not have \textmc, \textgt, or the like.
If you are using \LaTeX and prefer the standard version\footnote{Since v0.3, the “standard version” is similar to jsclasses and bxjscls rather than (u)p\LaTeX.} of \textmc and
\textgt, you can declare
In contrast,

\textgt{\Large □□}

It causes a fatal error when the fixjfm version of \textgt is used. The solution is to change \textgt back to the standard version, either globally or locally:

\textgt{\Large □□}

3 Advanced usage

The spacing between two consecutive fullwidth punctuation marks is produced by a glue item specified in the corresponding JFM file. However, if the font is changed there, the JFM format cannot work correctly, so this package puts another glue item there to adjust the spacing. The natural width of the new glue item is calculated according to the corresponding JFM file, so you need not worry about it. However, the stretch and shrink components cannot be extracted from JFM, so the following two commands are provided:

\SetFixJFMSpacingStretch
\SetFixJFMSpacingShrink

They expect an argument specifying how much space to stretch and shrink respectively. This package sets both of them to 0.05zw by default.

Macro writers may want to (re)define commands like the fixjfm version of \textmc and \textgt for CJK text fonts, thus the following command is provided:

\DeclareFixJFMCJKTextFontCommand

It is similar to \LaTeX{}'s \DeclareTextFontCommand. For example, \textmc is redefined by this package as follows:

\DeclareFixJFMCJKTextFontCommand{textmc}{\mcfamily}

and \textgt is similar. In contrast,

\DeclareStandardCJKTextFontCommand

(re)defines a CJK text font command like the standard version of \textmc and \textgt. But there is a more convenient way: Suppose that you have a new CJK text font command \xyfamily, then

\AppendToUseXCJKTextFontCommands{\textxy}{\xyfamily}
will do all you need and makes \Use...CJKTextFontCommands also apply to \textxy. This command and \Use...CJKTextFontCommands can be given in any order, so you do not need to redefine \UseFixJFMCJKTextFontCommands (which is the default behaviour) if that is what you want.

Finally, there are several macros that may be useful for \TeXnicians:

\FixJFMSpacing
\fixjffirstindent
\FixJFMLastIndent
\EveryparPreHook
\EveryparPostHook
\ifUseFixJFMCJKTextFontCommands
\ifUseStandardCJKTextFontCommands

They are worthless for ordinary use. If you are interested in them, please have a look at the source code.

4 Compatibility

The \LaTeX-only package bxjaprinind also focuses on the first bug mentioned above. It provides some additional functionalities and also supports some other \TeX engines. This package can be used together with bxjaprinind, but please note that if you prefer bxjaprinind, you have to load it before this package, and vice versa, in case both of them are loaded.

5 Acknowledgements

The source code of this package is mostly taken from\footnote{This package also improves the code slightly.} (in alphabetical order): \textepsilon-p\LaTeX Wiki (Hironori Kitagawa):

https://ja.osdn.net/projects/eptex/wiki/lastnodechar

everyhook (Stephen Checkoway):

https://ctan.org/pkg/everyhook

jsclasses (Haruhiko Okumura et al.):

https://ctan.org/pkg/jsclasses

and platex (Kazuki Maeda & Japanese \TeX Development Community):

https://ctan.org/pkg/platex

Many thanks to the authors of these packages. I would also like to thank Hironobu Yamashita, who helped me a lot.
6 History

2017-09-02 v0.2

• First public version.

2017-09-04 v0.3

• Fixes.

• Make \UseFixJFMCJKTextFontCommands and \UseStandardCJKTextFontCommands also available after \begin{document}.

• Add \DeclareStandardCJKTextFontCommand and use it for redefining the standard version of \textmc and \textgt.

Thanks to Hironobu Yamashita for suggesting all these changes:
https://github.com/Man-Ting-Fang/fixjfm/pull/1

2017-09-04 v0.4

• Bug fix, thanks to Hironobu Yamashita:
https://github.com/Man-Ting-Fang/fixjfm/pull/2

2017-09-12 v0.5

• Bug fix, thanks to Hironobu Yamashita:
https://github.com/Man-Ting-Fang/fixjfm/issues/3

2017-09-21 v0.6

• Bug fix and improvement, thanks to Hironobu Yamashita:
https://github.com/Man-Ting-Fang/fixjfm/pull/4

2017-12-27 v0.7

• Add \ifUseFixJFMCJKTextFontCommands and \ifUseStandardCJKTextFontCommands.

2018-03-24 v0.8

• Add \AppendToUseXCJKTextFontCommands.