

# Poorman's Hangul Jamo Input Method

## pmhanguljamo.sty

Kangsoo Kim

20 Jan 2020 version 0.2.1

## Contents

<b>1</b>	<b>Introduction</b>	<b>1</b>
<b>2</b>	<b>Usage</b>	<b>2</b>
2.1	Loading the package . . . . .	2
2.2	Commands and Environment Provided . . . . .	2
2.3	Preamble of Document . . . . .	2
<b>3</b>	<b>Transliteration Rule</b>	<b>3</b>
3.1	Tone Marks and Syllable Serapator . . . . .	3
3.2	Consonants . . . . .	4
3.3	Vowels . . . . .	5
3.4	Compatibility Jamos . . . . .	5
<b>4</b>	<b>Proper Fonts</b>	<b>5</b>
<b>5</b>	<b>Examples</b>	<b>6</b>
5.1	Modern Hangul . . . . .	7
5.2	pre-1933 Hangul . . . . .	7
<b>6</b>	<b>Acknowledgement</b>	<b>8</b>

## 1 Introduction

This  $\text{\LaTeX}$  package provides Hangul<sup>1</sup> *transliteration* input method, which enables to typeset Korean Letters (Hangul) with the help of proper fonts. The name is from “Poorman’s Hangul Jamo Input Method.” It is mainly for the people who have a system without Korean IM, but want to typeset Hangul in their document. Not only modern Hangul, but so-called “Old Hangul” characters that uses the lost letters such as ‘Arae-A’, ‘Yet Ieung’ or ‘Pan-Sios’ etc. can also be typeset.

$\text{\XeLaTeX}$  or  $\text{\LuaLaTeX}$  is required ( $\text{\XeLaTeX}$  recommended). The legacy  $\text{\pdfTeX}$  is not supported. The Korean Language supporting packages such as `xetexko` or `luatexko` (in the `ko.TEX` bundle) or `polyglossia` under  $\text{\XeLaTeX}$  are recommended, but without them typesetting Hangul is of no problem with this package `pmhanguljamo`.

---

<sup>1</sup>*Hangul* is the Korean alphabet to write the Korean language. In both South and North Korea, the standard writing system uses Hangul.

## 2 Usage

### 2.1 Loading the package

Put the following line in your preamble:

```
\usepackage{pmhanguljamo}
```

### 2.2 Commands and Environment Provided

The main command to typeset Hangul is `\jamoword`.

Input: `\jamoword{myec dan/e/ga or su iss/svb/ni/da/.}`  
Result: 몇 단어가 올 수 있습니다.

The argument of the command consists of roman alphabets and a few marks that represent the transliteration of Hangul Jamo. The transliteration rule will be explained in the section 3 (page 3).

And an environment named *jamotext* is provided. In the environment, multiple paragraphs can be located. So, it is suitable to typeset longer text stuffs. For example,

```
\begin{jamotext}
jug/nvn nar/gga/ji ha/nvr/vr u/re/re \\
han jem bu/ggv/rem ebs/gi/rvr

ip/sai/ei i/nvn ba/ram/ei/do \\
na/nvn goi/ro/oa/haiss/da/.
\end{jamotext}
```

The result will be like this:

죽는 날까지 하늘을 우러러  
한 점 부끄럼 없기를  
앞새에 이는 바람에도  
나는 괴로와했다.

### 2.3 Preamble of Document

Without any other packages, you can type Hangul. Note that proper fonts should be declared for Hangul, using `fontspec`.

```
\documentclass{article}
\usepackage{fontspec}
\usepackage{pmhanguljamo}

\begin{document}
\fontspec[Script=Hangul]{UnBatang.ttf}
\jamoword{an/nyex/ha/sei/yo}
\end{document}
```

UnBatang.ttf is a font shipped in unfonts-core package of T<sub>E</sub>X Live. Not all Korean fonts can be available to typeset so-called ‘Old Hangul’, because they happen to lack the feature of composing Korean Syllables from conjoining Jamo codes. Fortunately, we have a few more fonts besides UnBatang that are *proper* and freely available, which are listed in the section 4. In T<sub>E</sub>X Live distribution, UnBatang is the only *proper* one.

The polyglossia package provides Korean language support. This package pmhangul-jamo can be used with it. The following is an example.

```
\documentclass{article}
\usepackage{polyglossia}
\setmainlanguage{english}
\setotherlanguage{korean}
\newfontfamily\hangulfont{UnBatang.ttf}[Script=Hangul]
\usepackage{pmhanguljamo}

\begin{document}
\begin{korean}
\jamoword{han/gvr/vr si/hem/hab/ni/da/.}
\end{korean}
\end{document}
```

Or the ko.T<sub>E</sub>X package bundle can be used together.

```
\documentclass{article}
\usepackage{kotex}
\usepackage{pmhanguljamo}
\setmainhangulfont{UnBatang.ttf}[Script=Hangul]

\begin{document}
\jamoword{na/ras/mar/ss@/mi}
\end{document}
```

In any case, the option [Script=Hangul] should be given to the font settings for Hangul. For more information, see section 4.

The Korean writing system does not have hyphenation rule. The line breaking can arise at the end of mostly every character. Therefore, without Korean language supporting packages the line breaking and justification of paragraphs will not be acceptable. But when just single or a few Hangul characters are needed, for example in the case of typesetting the author’s name in Hangul, this package provides a casual way to print them out.

## 3 Transliteration Rule

### 3.1 Tone Marks and Syllable Serapator

This package assumes that every Hangul syllable has Tone Mark which must be explicitly put at the end of it. Table 1 shows the input scheme of them.

The tone marks were used in the 15th century, but in the modern Korean they are out of use. Nevertheless the / mark in this package is also used in order to depict the completion of composing a syllable — i.e., syllable separator. So DO NOT miss it.

Table 1: Tone Marks

input	description
/	for <i>PyeongSeong</i> , no dot
;	for <i>GeoSeong</i> , single dot on the left of a character, [U+302E]
:	for <i>SangSeong</i> , double dots on the left of a character, [U+302F]

However, it is possible to omit ‘/’ mark at the end of a word, i.e., just before <space>, or at the end of the argument of \jamoword. Note that before the punctuation mark — period, comma, etc., omitting / is not permitted.

### 3.2 Consonants

Table 2 shows the transliteration rule for the consonants which are used in the leading and trailing position of a syllable.

Table 2: Consonants

ㄱ	g	ㄴ	n	ㄷ	d	ㄹ	r
ㅁ	m	ㅂ	b	ㅅ	s	ㅇ	x
ㅈ	j	ㅊ	c	ㅋ	k	ㅌ	t
ㅍ	p	ㅎ	h	ㅇ	q	ㅍ	z
ㅇ	f		w				

1. The corresponding letters “g, n, d, m, b, s, j, k, t, p, h” are the same as Korean Romanization Method (RRK).<sup>2</sup>
2. The letter for ‘ㄹ’ is allocated to r not l.
3. The letter ‘c’ is for ‘ㅊ’. In the RRK, it is ‘ch’ there.
4. Note that the letter for ‘ㅇ’ is x, which is a bit strange, but commonly accepted ‘ng’ was not to be chosen. It should be reserved for ‘ㅇ’.
5. And the letters ‘q, z, f’ are more freely selected. These letters are the lost ones in Modern Korean.
6. The letter ‘w’ is chosen to present *Choseong Filler*.
7. The letters ‘l’ and ‘lr’ are for very rare case. In the 15th century Korean, ‘ㄹ’ and ‘ㄹ’ were distinguishable. ‘sl’ is chosen for the SIOS with left branch being longer, and ‘slr’ means right branch longer. The same is the case ‘ssl’, ‘sslr’, ‘jl’, ‘jlr’ etc.
8. The ‘light labial consonants’, ㅃ, ㅍ in the Old Hangul can be input as ‘bx, px, bbx, mx’.
9. In the Modern Korean, only ‘gg, dd, bb, ss, jj’ are additionally permitted in the leading consonant position, But in the Old Hangul this limitation was not applied. So *Choseong* can have multiple consonants, e.g., ‘bsg’, ‘bsd’, ‘ss’, ‘sd’ etc.

<sup>2</sup>The Revised Romanization of Korean 1995:2000 is the official Korean language romanization system in South Korea.

10. The leading ‘zero consonant’ can be omitted. So if a syllable begins with vowel, then the leading ‘ㅇ’ will appear. You can write the leading ‘x’ of a syllable or not. For example, ‘\jamoword{xax}’ and ‘\jamoword{ax}’ will generate the same result ‘앙’.

### 3.3 Vowels

Table 3 shows the transliteration rule for vowels.

Table 3: Vowels					
ㅏ	a	ㅓ	e	ㅗ	o
ㅣ	i	ㅕ	@	ㅜ	u
ㅑ	ya	ㅗ	ye	ㅠ	yo
ㅓ	ay, ai	ㅓ	ey, ei	ㅓ	oy, oi
ㅑ	yay, yai	ㅓ	yey, yei	ㅓ	yoi
ㅓ	oa	ㅓ	oay, oai	ㅓ	ue
				ㅓ	uey, uei

1. The rule for vowels may look unfamiliar. But it is simple and easily rememberable.
2. The letter ‘v’ is never considered to be a vowel. But this package determined it to stand for the vowel ‘ㅓ’. In fact, the roman alphabets fall short of the vowels. This allocation is arbitrary.
3. The lost ‘Arae-A’ is allocated to ‘@’, and the rare ‘Double Arae-A’ to ‘@@’, which are forgotten vowels in Modern Korean.

### 3.4 Compatibility Jamos

The compatibility Jamo block in Unicode contains several Hangul Jamo characters, which cannot be used to compose Hangul syllables, and are considered independent Jamo characters respectively.

To input the compatibility Jamos in the arguments of \jamoword or jamotext, you are to type them in their capital letters (upper cases). And every compatibility Jamo has to be separated with syllable separator — /. Because the @ character has no upper case, write W instead of @ to display compatibility ‘Arae-A’.

Here is an example:

```
\jamoword{W/nvn a/rai/a/ra/go bu/rv/go A/oa bi/svs/ha/gei irg/
nvn/da}
ㄴ는 아래아라고 부르고 ㅏ와 비슷하게 읽는다
```

## 4 Proper Fonts

In order to typeset Hangul characters successfully with the input method of this package, the help of the *proper* font is crucial. What we call *proper* font is the font that has the Opentype feature of ‘Script Hangul’, that is, the feature of conjoining jamo characters. A Truetype font may have this Opentype feature. Otherwise, it is regarded as an *improper* font.

Not so many fonts are *proper*. The fonts or font families listed in the following lines are what we know *proper*. They can be downloaded from the url and used freely. And note that UnBatang is already installed in your  $\TeX$  Live installation.

**Hamchorom LVT** Hamchorom fonts by Hancom Inc., and their variants with GSUB tables by KTS (the Korean  $\TeX$  Society). <https://github.com/dohyunkim/hcr-lvt>

**KoPub World** free fonts by Korea Publisher Society. <http://www.kopus.org/biz/electronic/font.aspx>

**Malgun Gothic** One of Windows 10 system font.

**Nanum Yet Hangeul** Two font families from Naver. Nanum Myeongjo Yet Hangeul and Nanum Barun Gothic Yet Hangeul. <https://hangeul.naver.com/2014/archaicword>

**Noto CJK** Google's Noto CJK fonts. Or Adobe's Source Han fonts. <https://www.google.com/get/noto/help/cjk/>

**Un Batang** UnBatang.ttf. on CTAN. <https://ctan.org/pkg/unfonts-core>

To use one of these fonts, do not forget to provide the `[Script=Hangul]` option. For example, you can specify Hamchorom Batang LVT font as:

```
\newfontfamily\pmjamofont{HCR Batang LVT}[Script=Hangul]
```

and then issue `\pmjamofont` command in the scope of Hangul to be typeset. It is recommended that the *proper* font should be used consistently.

In case the font you take is not *proper*, you are to meet the warning message at the console and log file,

```
Package fontspec Warning: (fontspec)
Font "batang" does not contain requested Script "Hangul".
```

However, when  $\XeLaTeX$  is concerned, it is known that the *Modern* Korean Characters (*Hangul Precomposed Syllables* in the Unicode block [U+AC00] – [U+D7A3]) can be rendered with this kind of font, in spite of the warning message.

## 5 Examples

Now, we will show a few practical examples, where the *korean* environment of polyglossia package is used. The preamble is like this:

```
\usepackage{pmhanguljamo}
\usepackage{polyglossia}
\setotherlanguage{korean}
\newfontfamily\hangulfont{UnBatang.ttf}[Script=Hangul]
```

## 5.1 Modern Hangul

```
\begin{korean}
\begin{jamotext}
e/rin/i/nvn na/ra/oa gye/re/y/vi ap/nar/vr i/e/na/gar
sai/sa/ram/i/mv/ro gv/dvr/vi mom/goa ma/vm/vr gui/hi
ye/gye orh/go a/rvm/dab/go ssig/ssig/ha/gey ja/ra/do/rog
him/sse/ya han/da/.
\end{jamotext}
\end{korean}

\begin{enumerate}
\item \textkorean{\jamoword{e/rin/i/nvn in/gan/v/ro/se
jon/jux/ha/ye/ya ha/mye sa/hoi/vi han sa/ram/v/ro/se
or/ba/rv/gey ki/ue/ya han/da/.}}
\end{enumerate}
```

어린이는 나라와 겨레의 앞날을 이어나갈 새사람이므로 그들의 몸과 마음을 귀히 여겨 옳고 아름답고 씩씩하게 자라도록 힘써야 한다.

1. 어린이는 인간으로서 존중하여야 하며 사회의 한 사람으로서 올바르게 키워야 한다.

## 5.2 pre-1933 Hangul

A 15th century text with tone marks (*BangJeom*).

```
\begin{korean}
\begin{jamotext}
na/ras;mar:ss@/mi; dyuq/guig;ei; dar/a;
mun/jj@x;oa;ro; se/rv s@m@s/di; a/ni;h@r/ss@i;
i;ren jyen/c@;ro; e/rin; b@ig;syeq;i;
ni/rv/go;jye; horf; bai;
i/sye;do; m@c@m;nai: jey bdv;dvr; si/re; pye/di;
mod:h@rf no;mi; ha/ni;ra;.
\end{jamotext}
\end{korean}
```

나랏말쑥미 등꺽에 달아 문중와로 서르 수 못디 아니홀쑈이런 전초로  
어린 백성이 니르고져 홀 배 이셔도 무춤내 제 쑈들 시러 퍼디 곧홀  
노미 하니라.

And another example of 17th century, from 두시언해, *Selected Translations of Du Fu's Poems*, without tone marks.

```
\begin{verse}
\begin{korean}
\begin{jamotext}
g@/r@/mi p@/r@/ni sai de/ug h@i/o/,\\
moy/hi pe/re/h@/ni gos/ bi/ci bvr bvd/n@n d@s/do/da/.\\
ors bo/mi bon/d@in sdo di/na/ga/n@/ni \\
```

```
e/nv na/ri i do/ra/gar h@i/o/.
\end{jamotext}
\end{korean}
\end{verse}
```

ㅏㄹㅎㅎ ㅑㅑㅑㅑ ㅑ ㄹㅇㅇ ㅎㅇㅇ,  
 ㅑㅇㅇ ㅑㅇㅇㅇㅇ ㅑㅇㅇㅇㅇ ㅑㅇㅇ ㄹㅇㅇㅇㅇ.  
 ㅇㅇㅇㅇㅇ ㅑㅇㅇㅇㅇ ㅑㅇㅇㅇㅇㅇㅇ  
 ㅇㅇㅇ ㄴㅇㅇㅇ ㅇㅇㅇㅇㅇㅇㅇㅇㅇ.

For more examples and information about this package, please read the documentation `pmhanguljamo-kdoc.pdf` (in Korean).

## 6 Acknowledgement

Thanks go to yihoe at the KTUG board, there he commented, “The IMs I’ve tried such as Korean Windows Old Hangul IM or Saenaru IM were all somewhat inconvenient. .... In my opinion, for the foreign scholar who studies Korean language, especially Middle Age Korean language, this kind of transliteration method may be much more convenient and confident way of typesetting Korean than the IM solutions.”<sup>3</sup>

---

<sup>3</sup>[http://www.ktug.org/xe/index.php?mid=KTUG\\_open\\_board&document\\_srl=240134](http://www.ktug.org/xe/index.php?mid=KTUG_open_board&document_srl=240134)