

# Using ISO 15919 for Indic script romanization

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## Method 1 (No setup)

This needs a working internet connection. To use it, you need to say “yes” to one of the two questions below:

1. Can you type in at least one of the Indic scripts?
2. Do you know either ITRANS or Harvard-Kyoto standard for transliteration?  
(ITRANS is pretty easy to get hold of. [Look here.](#))

You can use <http://www.virtualvinodh.com/aksharamukha> with **Source** set to **your script/ITRANS/Harvard-Kyoto**, and **Target** set to **ISO**. If you are using a north Indian script, **tick** the box **Remove ‘a’**.

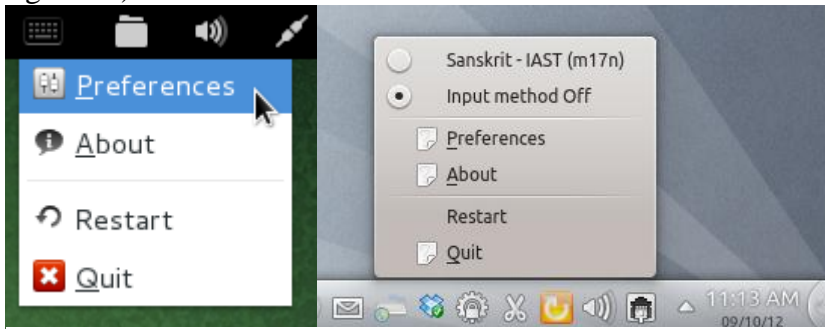
## Method 2 (Needs setup)

Follow the relevant instructions depending on your operating system. This only needs to be done once. After the setup, go through [Romanization mappings](#) section to know what to type.

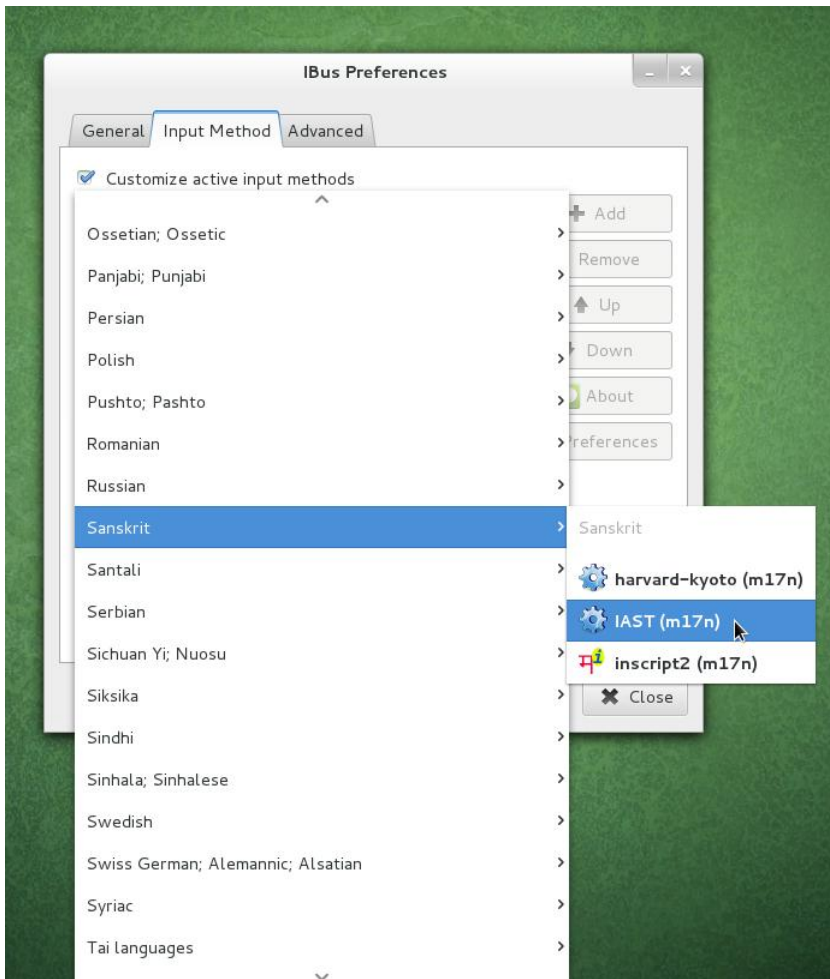
### Linux

1. Install ibus & ibus-m17n packages with your system’s package manager.  
**Ubuntu:** `sudo apt-get install ibus ibus-m17n`  
**Fedora:** `sudo yum -y install ibus ibus-m17n`
2. Paste the following text at the end of `~/.bashrc` file and save it.  
`export GTK_IM_MODULE=ibus`  
`export XMODIFIERS=@im=ibus`  
`export QT_IM_MODULE=ibus`
3. Logout and Login, or reboot.

4. When you login, run `ibus-daemon` command. You should see an extra icon in the panel. Right click on it and choose “**P**references”. See the screenshots below (left:gnome, right:kde).



5. In the second tab called “**I**nput **M**ethod”, tick “Customize active input methods” and choose Sanskrit->IAST from the dropdown list and click on “**A**dd”. See the screenshot below.



6. Close the preferences window, right click on the panel icon again, and choose “**R**estart”.
7. Open any text-editor, press `Ctrl+Space`, and type, Raaga. It should be displayed as Rāga! To switch back to your default input method, press `Ctrl+Space` again.
8. Refer to [Romanization mappings](#) section for mapping of letters (eg:  $\text{ॠ} = \text{aa} = \bar{a}$ ).

## Windows

Right now, [Method 1](#) is preferable to existing set of tools. I will update this if a better method is found.

## Mac OSX

[Click here](#) and follow the instructions in the document. If you don't like it or find it difficult, see [Method 1](#).

## Romanization mappings

### Indic scripts to Extended Latin

This mappings are taken from <http://homepage.ntlworld.com/stone-catend/trind.htm>

Latin	Dev.	Gur.	Guj.	Ben.	Ori.	Tam.	Mal.	Kan.	Tel.	Sin.	Notes
a	अ	ਅ	અ	অ	ଅ	அ	അ	అ	ఆ	අ	2.
ā	आ	ਆ	આ	আ	ଆ	ஆ	ആ	ఆ	ఆ	ආ	
æ										ඇ	
ǣ										ඈ	
i	इ	ਇ	ઈ	ই	ଇ	இ	ഇ	ಇ	ఇ	ඉ	
ī	ई	ਈ	ઈ	ঐ	ଈ	ஈ	ഈ	ಈ	ఈ	ඊ	
u	उ	ਉ	ઉ	উ	ଉ	உ	ഉ	ಉ	ఉ	ඊ	
ū	ऊ	ਊ	ઊ	ঊ	ଊ	ஊ	ഊ	ಊ	ఊ	උ	
ǔ							ു				5.
r̥	ऋ		ૠ	ঋ	ଋ		ഠ	ఋ	ఋ	ඌ	
r̄	ॠ		ૡ	ঠ	ॠ		ഡ	ॠ	ॠ	ඍ	
l̥	ऌ		ૢ	ঌ	ॡ		ണ	ॡ	ॡ	ඎ	
l̄	ॡ		ૣ	ॢ	ॢ		വ	ॢ	ॢ	ඏ	
e	(ऐ)					எ	എ	ಎ	ಎ	එ	
ē	ए	ਏ	એ	এ	ଏ	ஏ	ഈ	ಏ	ఏ	ඒ	
ê	ऎ		ઁ								
ai	ऐ	ਐ	ઐ	ঐ	ঐ	ஐ	ഐ	ಐ	ఐ	ඔ	
o	(ओ)					ஓ	ഓ	ಓ	ఓ	ඌ	
ō	ओ	ਓ	ઓ	ও	ଓ	ஔ	ഔ	ಔ	ఔ	ඍ	

Latin	Dev.	Gur.	Guj.	Ben.	Ori.	Tam.	Mal.	Kan.	Tel.	Sin.	Notes
<b>ka</b>	क	ਕ	ક	କ	କ	க	ക	ಕ	క	ක	
<b>kha</b>	ख	ਖ	ખ	ਖ	ଖ		ഖ	ഖ	ఖ	ഖ	
<b>ga</b>	ग	ਗ	ગ	ଗ	ଗ		ഗ	ಗ	గ	ග	
<b>gha</b>	घ	ਘ	ઘ	ଘ	ଘ		ഘ	ಘ	ఘ	ඝ	
<b>ña</b>	ङ	ਙ	ડ	ଙ	ଙ	ங	ങ	ಙ	ఙ	ඞ	
<b>ṅga</b>										ඟ	9.
<b>ca</b>	च	ਚ	ચ	ଚ	ଚ	ச	ച	ച	చ	ච	
<b>ĉa</b>									ఛ		
<b>cha</b>	छ	ਛ	છ	ଛ	ଛ		ച	ച	చ	ඡ	
<b>ja</b>	ज	ਜ	જ	ଜ	ଜ	(ജ)	ജ	ജ	జ	ජ	
<b>jha</b>	झ	ਝ	ઝ	ଝ	ଝ		ജ	ജ	జ	ඣ	
<b>ña</b>	ञ	ਞ	ઞ	ଞ	ଞ	ஞ	ഞ	ഞ	ఞ	ඤ	
<b>ṅja</b>										ඞ	9.
<b>ṭa</b>	ट	ਟ	ટ	ଟ	ଟ	Ṭ	Ṭ	Ṭ	ṭ	ṭ	
<b>ṭha</b>	ठ	ਠ	ઠ	ଠ	ଠ		ṭ	ṭ	ṭ	ṭ	
<b>ḍa</b>	ड	ਡ	ડ	ḍ	ḍ		ḍ	ḍ	ḍ	ḍ	
<b>ṛa</b>	ड़	ੜ		ṛ	ṛ						
<b>ḍha</b>	ढ	ਢ	ḍ	ḍ	ḍ		ḍ	ḍ	ḍ	ḍ	

Latin	Dev.	Gur.	Guj.	Ben.	Ori.	Tam.	Mal.	Kan.	Tel.	Sin.	Notes
pa	प	ਪ	પ	প	ପ	ப	പ	ಪ	ప	ପ	
pha	फ	ਫ	ફ	ফ	ଫ		ഫ	ಫ	ఫ	ଫ	
ba	ब	ਬ	બ	ব	ବ		ബ	ಬ	బ	ବ	
bha	भ	ਭ	ભ	ভ	ଭ		ഭ	ಭ	భ	ଭ	
ma	म	ਮ	મ	ম	ମ	ம	മ	ಮ	మ	ମ	
m̄ba										ම	9.
ra	(र)					ற	റ	(ಱ)	(ఱ)	(ర.)	10.
ra							(ര)				(a) below
na	(न)					ள	(ണ)			(න.)	
la	(ळ)					ഴ	ഴ	(ല)	(ఱ)	(ල.)	
ya	य	ਯ	ય	য	ଯ	ய	യ	ಯ	య	ਯ	
ya	(य़)			য়	ୟ						11.
ra	र	ਰ	ર	র (ৰ)	ର	ர	റ	ರ	ర	ର	
ř	ṛ										
la	ल	ਲ	લ	ল	ଲ	ல	ല	ಲ	ల	ਲ	
la	ळ	ਲ਼	ਲ		ଲ	ள	ള	ಲ	ల	ਲ	
va	व	ਵ	વ	(ব)	(ব)	வ	വ	ವ	వ	ਵ	
śa	श	ਸ਼	શ	শ	ଶ	(ശ)	ശ	ಶ	ష	শ	
ṣa	ष		ષ	ষ	ষ	(ഷ)	ഷ	ಷ	ష	ষ	
sa	स	ਸ	સ	স	স	(സ)	സ	ಸ	స	স	
ha	ह	ਹ	હ	হ	ହ	(ஹ)	ഹ	ಹ	హ	ହ	
'	ḥ		હ	হ	ହ		ഹ	ಹ	హ	ହ	
qa	क	ਕ	ક	ক	କ						
kha	ख	ਖ	ਖ	খ	ଖ						
ḡa	ग	ਗ	ગ	গ	ଗ						
za	ज	ਜ	જ	জ	ଜ			ಜ	జ		
fa	फ	ਫ	ફ	ফ	ଫ			ಫ		ଫ	
wa				ব	ଵ						

1. The transliterations are case-insensitive.
2. The inherent vowel **a** is always transliterated.
3. Latin punctuation and Hindu-Arabic numerals are retained unchanged.
4. Numbers in Indic scripts are converted into Hindu-Arabic form.
5. Mal. <sup>u</sup> final in a word is transliterated **ū**, except for single letters such as <sup>u</sup>, **k**.
6. Mal. Anusvara final in a word is always transliterated **m**.
7. With a vowel, **m̄**, **ṁ**, **m̈** come after the vowel, but **m̄** with a semi-vowel comes before the semi-vowel.
8. Tel. half-nasal used for modern nasalization in Hindi, etc., is always transliterated by a tilde above the vowel, as in the strict nasalization option.
9. For Pali the transliterated half-nasal is replaced by the full nasal.
10. Mal. <sup>ri</sup> combined with a consonant is transliterated **r**. When final in a word it is transliterated **ṛ** in Malayalam words, but either way as appropriate for other languages.
11. The transliteration **y** is used after a consonant, except after <sup>y</sup> itself: <sup>y</sup><sup>y</sup>.
12. Ambiguity is resolved by inserting a colon **:** between two transliterated characters having an unexpected meaning, or before one such character. This colon is never placed at the end of a word.

Examples:

बह b:ha (not भ bha)

बै ba:i (not बै bai)

नन n:na (not न nna); medial य y:

ऽ :’ (not ’ apostrophe) in modern vernaculars

बच bac:ā (not बचा bacā)

ई ī:m̄ (not ईं īm̄), in old orthography

Other ambiguities are treated in the same way.

13. Different glyphs belonging to the same Indic character have the same transliteration.

If an Indic character in any script is equivalent to a character covered by the standard, their transliterations are the same. (This may be called '**slotting in**'.) E.g. Avagraha in Gur. older orthography gives ऽ ’

## Qwerty keyboard strokes to Extended Latin

aa - ā	.H - Ĥ
AA - Ā	;n - ñ
^a - â	;N - Ñ
^A - Â	~n - ñ
ii - ī	~N - Ñ
II - Ī	.t - ƚ
uu - ū	.T - ƚ
UU - Ū	.d - đ
.r - Ț	.D - Đ
.R - Ț	.n - ñ
.rr - Ț	.N - Ñ
.RR - Ț	;s - ś
.l - ł	;S - Ś
.L - Ł	.s - ș
.ll - ł	.S - Ș
.LL - Ł	ee - ē
.M - M̄	oo - ō
.m - m̄	;m - m̄
.h - ħ	,r - Ț
	,rr - Ț

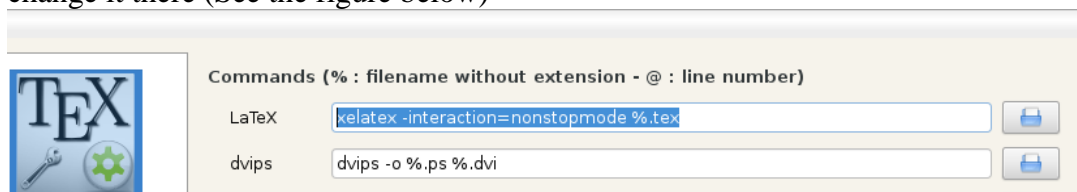
## Compiling Latex documents with diacritics

‘Latex’ is a set of tex macros that helped typeset documents. But with the advent of Unicode, it is now considered as outdated. Xetex/Xelatex succeeds Latex enabling users to typeset unicode content without any fuss.

### Installation Instructions

- Linux:
  - Ubuntu:** `sudo apt-get install texlive-xetex`
  - Fedora:** `sudo yum install texlive-xetex`
  - Replace texlive-xetex with tex-xetex if it says package not found.
- Windows: Install [Miktex](#).
- Mac: Follow the guide [here](#).

Once the installation is done, if you are using a tex-editor, your need to configure it to use xelatex instead of latex. In texmaker for example, go to Options > Configure texmaker, and change it there (See the figure below)



## Compilation

- Paste the following two lines in the header section of your latex source file (*You can use any font that supports diacritic characters*): This allows you to directly type *any* character into the source file.

```
\usepackage{fontspec}
```

```
\setmainfont{Linux Libertine O}
```

- **DO NOT** include these packages: textcomp, inputenc and fontenc.
- Compile the document with xelatex instead of latex. If you are using command line, simply type: `xelatex myfile.tex`