Sanskrit for $\LaTeX\,2_\varepsilon$
Version 2.2.4-b

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A Short Introduction and Quick Start Guide

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Contents

Introduction

The package contains the font files and pre-processor for printing Sanskrit text in both *devanāgarī* and transliterated Roman with diacritics.

Some features of the *devanāgarī* font:

- Font available in three weights and two slopes.
- The i-hooks connect to the consonants at the correct positions.
- Accents for all *Veda*s (*Ṛgveda*, *Sāmaveda*, *Taittirīya*), etc.
- Accent marking in colour or grey shading.
- Choice of character forms (e.g. **अ / अ**) and *saṃyoga* (e.g. **ञ्च / ञ्च**).
- Range of intra- and inter-syllable spacing.
- Dynamic option selection.

Some features of the transliterated Roman:

- Full accent marking and stacking in basic transliteration mode.
- Four ‘cases’ (as per S. M. Katre) in technical transliteration mode.
- Each transliteration mode has four styles: Roman/italic × bold/normal.

This document intends to serve as a short introduction and guide to get started with using `CTAN:pkg/skt` for typesetting documents.

Illustrations of Input and Devanāgarī Output

The following brief samples demonstrate the available styles of *devanāgarī* font and their encoding. In this mode upper case characters are disallowed.

Note that the ‘larger’ option has been selected so that, in this 12pt document, the *devanāgarī* is printed at 14pt.

`{\sktb  te_ja_svi naa_vadhii!tamastu|}` **तेजस्वि नावधीतमस्तु।**

`{\skt   te_ja_svi naa_vadhii!tamastu|}` तेजस्वि नावधीतमस्तु।

`{\sktf  te_ja_svi naa_vadhii!tamastu|}` तेजस्वि नावधीतमस्तु।

`{\sktbs te_ja_svi naa_vadhii!tamastu|}` ***तेजस्वि नावधीतमस्तु।***

`{\skts  te_ja_svi naa_vadhii!tamastu|}` *तेजस्वि नावधीतमस्तु।*

`{\sktfs te_ja_svi naa_vadhii!tamastu|}` *तेजस्वि नावधीतमस्तु।*

The intra- and inter-character spacing options give six steps of horizontal density; the extremes are:

नैव किंचित्करोमीति युक्तो मन्येत तत्त्ववित्।

नैव किंचित्करोमीति युक्तो मन्येत तत्त्ववित्।

Illustrations of Basic Transliteration

The same input may also be used to produce transliterated output. Note that the ‘`iitalic`’ option is selected, but not ‘`xitalic`’.

`{\sktx te_ja_svi naa_vadhii!tamastu|}` tejasvi nāvadhītamastu |

`{\sktX te_ja_svi naa_vadhii!tamastu|}` **tejasvi nāvadhītamastu |**

`{\skti te_ja_svi naa_vadhii!tamastu|}` *tejasvi nāvadhītamastu |*

`{\sktI te_ja_svi naa_vadhii!tamastu|}` ***tejasvi nāvadhītamastu |***

It can be seen from the above examples that `sktX` is a boldface version of `sktx` (i.e. also upright), and that `sktI` is similarly a boldface version of `skti` (also italic). The only difference between `sktx/X` and `skti/I` is that they may be independently selected as italic in the style file options.

The Western accent marking system may also be used:

`{\skti tejasvi' naava'dhii`tamastu|}` *tejasví nāvádhī̀tamastu*|

In this basic transliteration mode (`sktx/X` or `skti/I`) uppercase characters are allowed: these do not affect the transliteration encoding, but facilitate the printing of capital letters, for example:

`{\sktI  Bhaarate Raamo vasati}`   ***Bhārate Rāmo vasati***

Illustrations of Technical Transliteration

As in the basic transliteration mode, there are four font styles selected through `sktt/T` or `sktu/U`; however, in this mode only the Western accent marking is allowed. This technical (grammatical) mode follows the style of S M Katre in his translation of the *Aṣṭādhyāyī*, having four 'cases' of letters.

Uppercase is used to indicate IT letters (e.g. *pratyāhāra* **aC**): note that in this mode a *mahāprāṇa sparśa* (e.g. *Bha*) must have the '*h*' in the same case as the previous letter. In the example given above, `Bhaarate` would produce an error: it needs to be `bhaarate` or `BHaarate`. The uppercase letters in this mode are slightly smaller than those in the basic transliteration mode.

In this mode only, letters may also be preceded by the underscore character '_'. The effect that this has depends upon the case of the following letter: if the letter is lowercase, it will be underlined to indicate that its presence is for the sake of pronunciation only (e.g. **jh<u>a</u>L**); before an uppercase letter, it will reduce the size of the uppercase letter to the height of the lowercase letters to indicate technical words (e.g. IT). For example, the *Pāṇini sūtra*

चजोः कु घिण्ण्यतोः ॥ ७। ३। ५२॥

may be encoded in the technical mode as

`{\sktT c_a-j-o.h kU GH_I_T=.NyaT-o.h}` to produce

c<u>a</u>-j-oḥ kU GHIT=ṆyaT-oḥ

This translates as: A substitute **kU** replaces **c** or **j** before **ṆyaT** or [affixes] with **GH** as an IT marker.

Getting Started with Typesetting Documents with Sanskrit for LaTeX 2$_\varepsilon$ Version 2

The pre-processor contained in `skt.c`processes the source text file (with a default `.skt` filename extension) to produce a file suitable for LaTeX 2$_\varepsilon$ (with a default `.tex` extension). For example, the command `skt test` will convert `test.skt` to `test.tex`; fuller filenames may be used, e.g. `skt foo.bar` will produce `foo.tex`, and `skt foo.bar far.boo` will produce `far.boo` from `foo.bar`. If no filename is specified, you will be prompted for input and output filenames. The pre-processor uses the Velthuis system of transliteration to process and convert text.

The program passes the text from the input file to the output file unaltered, until it finds the string '`{\skt`'. It then checks the following character(s) for the acceptable modifiers `b f s bs fs x X i I t T u` or `U`, and this must be followed by a space character: if this test fails it reports an error, otherwise the program converts the following input text to *devanāgarī* or transliteration format as required, until the matching '`}`'. The cycle is then repeated.

Within the `skt` text, the following punctuation characters will be passed to the output as roman:

```
( ) * + , - / :  ; = ?
```

Furthermore, two successive periods '..' will be passed to the output as a single roman period. This technique of repeating the character twice to produce a single roman character applies to the four characters `[‘’]` as well; and the two-character string '.!' will pass through as a single roman exclamation mark. You will need to use `{\sktx ‘‘a’{}’’}` to produce 'á' (see Supplementary Notes for explanation).

LaTeX command strings embedded within the `skt` text will be passed to the output file unchanged — but beware: command parameters will be converted! Thus commands without parameters (e.g. `\clearpage`) are safe, but commands with parameters (e.g. `\hspace{3mm}`) will cause problems unless the parameters are meant to be converted (e.g. `\underline{naaman}`).

> **Note:** This program will stop passing text to the output file as soon as an error in the source file is detected; it will however, continue processing the input file until ten or more errors are encountered.

For example, an end-to-end workflow can be:

1. Download the repository, compile `skt.c`, and move the compiled program to the same location as your `*.skt` documents.

    - Your `*.skt` documents MUST have `\usepackage[options]{skt}` in the preamble.

2. Use `./skt foo.skt` to produce a corresponding LaTeX 2$_\varepsilon$ file.
3. Use `pdflatex foo.tex` to produce a PDF.
4. Edit your `*.skt` file and repeeat steps (2) and (3) until the desired result is achieved.

Examples in Typesetting *devanāgarī*

```
{\sktf
"suddhabrahmaparaatpara raam ||1||
kaalaatmakaparame"svara raam ||2||
"se.satalpasukhanidrita raam ||3||
brahmaadyaamarapraarthita raam ||4||
}
```

शुद्धब्रह्मपरात्पर राम् ॥१॥
कालात्मकपरमेश्वर राम् ॥२॥
शेषतल्पसुखनिद्रित राम् ॥३॥
ब्रह्माद्यामरप्रार्थित राम् ॥४॥

```
{\sktfs
ca.n.dakira.nakulama.n.dana raam ||5||
"sriimadda"sarathanandana raam ||6||
kausalyaasukhavardhana raam ||7||
vi"svaamitrapriyadhana raam ||8||
}
```

चण्डकिरणकुलमण्डन राम् ॥५॥
श्रीमद्दशरथनन्दन राम् ॥६॥
कौसल्यासुखवर्धन राम् ॥७॥
विश्वामित्रप्रियधन राम् ॥८॥

```
{\skt
ghorataa.takaaghaataka raam ||9||
maariicaadinipaataka raam ||10||
kau"sikamakhasa.mrak.saka raam ||11||
"sriimadahalyoddhaaraka raam ||12||
}
```

घोरताटकाघातक राम् ॥९॥
मारीचादिनिपातक राम् ॥१०॥
कौशिकमखसंरक्षक राम् ॥११॥
श्रीमदहल्योद्धारक राम् ॥१२॥

{\skts
gautamamunisa.mpuujita raam ||13||
suramunivaraga.nasa.mstuta raam ||14||
naavikadhaavitam.rdupada raam ||15||
mithilaapurajanamohaka raam ||16||
}

गौतममुनिसंपूजित राम् ॥१३॥
सुरमुनिवरगणसंस्तुत राम् ॥१४॥
नाविकधावितमृदुपद राम् ॥१५॥
मिथिलापुरजनमोहक राम् ॥१६॥

{\sktb
videhamaanasara njaka raam ||17||
trya.mbakakaarmukabha njaka raam ||18||
siitaarpitavaramaalika raam ||19||
k.rtavaivaahikakautuka raam ||20||
}

विदेहमानसरञ्जक राम् ॥१७॥
त्र्यंबककार्मुकभञ्जक राम् ॥१८॥
सीतार्पितवरमालिक राम् ॥१९॥
कृतवैवाहिककौतुक राम् ॥२०॥

{\sktbs
bhaargavadarpavinaa"saka raam ||21||
"sriimadayodhyaapaalaka raam ||22||
}

भार्गवदर्पविनाशक राम् ॥२१॥
श्रीमदयोध्यापालक राम् ॥२२॥

Examples in Typesetting Transliterated *devanāgarī*

```
{\sktx
mudaakaraattamodaka.m sadaa vimuktisaadhaka.m
kalaadharaavata.msaka.m vilaasilokarak.sakam |
anaayakaikanaayaka.m vinaa"sitebhadaityaka.m
nataa"subhaa"sunaa"saka.m namaami ta.m vinaayakam ||1||
}
```

mudākarāttamodakaṃ sadā vimuktisādhakaṃ
kalādharāvataṃsakaṃ vilāsilokarakṣakam |
anāyakaikanāyakaṃ vināśitebhadaityakaṃ
natāśubhāśunāśakaṃ namāmi taṃ vināyakam ||1||

```
{\sktX
natetaraatibhiikara.m navoditaarkabhaasvara.m
namatsuraarinirjara.m nataadhikaapaduddharam |
sure"svara.m nidhii"svara.m gaje"svara.m ga.ne"svara.m
mahe"svara.m tamaa"sraye paraatpara.m nirantaram ||2||
}
```

natetarātibhīkaraṃ navoditārkabhāsvaraṃ
namatsurārinirjaraṃ natādhikāpaduddharam |
sureśvaraṃ nidhīśvaraṃ gajeśvaraṃ gaṇeśvaraṃ
maheśvaraṃ tamāśraye parātparaṃ nirantaram ||2||

```
{\skti
samastaloka"sa.mkara.m nirastadaityaku njara.m
daretarodara.m vara.m varebhavaktramak.saram |
k.rpaakara.m k.samaakara.m mudaakara.m ya"saskara.m
manaskara.m namask.rtaa.m namaskaromi bhaasvaram ||3||
}
```

samastalokaśaṃkaraṃ nirastadaityakuñjaraṃ
daretarodaraṃ varaṃ varebhavaktramakṣaram |
kṛpākaraṃ kṣamākaraṃ mudākaraṃ yaśaskaraṃ
manaskaraṃ namaskṛtāṃ namaskaromi bhāsvaram ||3||

```
{\sktI
aki.mcanaartimaarjana.m cirantanoktibhaajana.m
puraaripuurvanandana.m suraarigarvacarva.nam |
prapa ncanaa"sabhii.sa.na.m dhana.mjayaadibhuu.sa.nam
kapoladaanavaara.na.m bhaje puraa.navaara.nam ||4||
}
```

akiṃcanārtimārjanaṃ cirantanoktibhājanaṃ
purāripūrvanandanaṃ surārigarvacarvaṇam |
prapañcanāśabhīṣaṇaṃ dhanaṃjayādibhūṣaṇam
kapoladānavāraṇaṃ bhaje purāṇavāraṇam ||4||

Sample Text from Ṛgveda 10.125.

अ॒हं रु॒द्रेभि॒र्वसु॑भिश्चराम्य॒हमा॑दि॒त्यैरु॒त वि॒श्वदे॑वैः ।
अ॒हं मि॒त्रावरु॑णो॒भा बि॑भर्म्य॒हमि॑न्द्रा॒ग्नी अ॒हम॒श्विनो॒भा ॥ १ ॥
अ॒हं सोम॑माह॒नसं॑ बिभर्म्य॒हं त्वष्टा॑रमु॒त पू॒षणं॒ भग॑म् ।
अ॒हं द॑धामि॒ द्रवि॑णं ह॒विष्म॑ते सुप्रा॒व्ये॒३॒॑ यज॑मानाय सुन्व॒ते ॥ २ ॥
अ॒हं राष्ट्री॑ सं॒गम॑नी॒ वसू॑नां चिकि॒तुषी॑ प्रथ॒मा य॒ज्ञिया॑नाम् ।
तां मा॑ दे॒वा व्य॑दधुः पुरु॒त्रा भूरि॑स्थात्रां॒ भूर्या॑वे॒शय॑न्तीम् ॥ ३ ॥
मया॒ सो अन्न॑मत्ति॒ यो वि॒पश्य॑ति॒ यः प्राणि॑ति॒ य ईं॑ शृ॒णोत्यु॒क्तम् ।
अ॒म॒न्तवो॒ मां त उप॑ क्षियन्ति श्रु॒धि श्रु॑त श्रद्धि॒वं ते॑ वदामि ॥ ४ ॥
अ॒हमे॒व स्व॒यमि॒दं व॑दामि॒ जुष्टं॑ दे॒वेभि॑रु॒त मानु॑षेभिः ।
यं का॒मये॒ तंत॑मु॒ग्रं कृ॑णोमि॒ तं ब्र॒ह्माणं॒ तामृषिं॒ तं सु॑मे॒धाम् ॥ ५ ॥
अ॒हं रु॒द्राय॒ धनु॒रा त॑नोमि ब्रह्म॒द्विषे॒ शर॑वे॒ हन्त॒वा उ॑ ।
अ॒हं जना॑य स॒मदं॑ कृणोम्य॒हं द्यावा॑पृथि॒वी आ वि॑वेश ॥ ६ ॥
अ॒हं सु॑वे पि॒तर॑मस्य मू॒र्धन्मम॒ योनि॑र॒प्स्व१॒॑न्तः स॑मु॒द्रे ।
ततो॒ वि ति॑ष्ठे॒ भुव॒नानु॒ विश्वो॒तामूं द्यां व॒र्ष्मणोप॑ स्पृशामि ॥ ७ ॥
अ॒हमे॒व वात॑ इव॒ प्र वा॒म्यार॑भमाणा॒ भुव॑नानि॒ विश्वा॑ ।
प॒रो दि॒वा प॒र ए॒ना पृ॑थि॒व्यैताव॑ती महि॒ना सं ब॑भूव ॥ ८ ॥

Sample Text from Sāmaveda

Sāmaveda Saṃhitā (*Kauthuma*), verses 523–528.

१ २र ३ २ ३ २ ३ १ २ ३ १ २ ३ २ ३ १ २र
प्र तु द्रव परि कोशं नि षीद नृभिः पुनानो अभि वाजमर्ष।
२ ३ १ २ ३ १ २ ३ २ ३ १ २ ३ १ २ ३ १ २
अश्वं न त्वा वाजिनं मर्जयन्तोऽच्छा वर्ही रशनाभिर्नयन्ति॥ ५२३॥
१ २र ३ १ २ ३ २ ३ २ ३ २ ३ १ २
प्र काव्यमुशनेव ब्रुवाणो देवो देवानां जनिमा विवक्ति।
१ २ ३ १ २ ३ २ ३ १ २ ३ २ ३क २र ३ १ २
महिव्रतः शुचिबन्धुः पावकः पदा वराहो अभ्येति रेभन्॥ ५२४॥
३ १ २र ३ १ २र ३ १ २ ३ १ २र ३ २
तिस्रो वाच ईरयति प्र वह्निर्ऋतस्य धीतिं ब्रह्मणो मनीषाम्।
१ २ ३ १ २ ३ २ २ ३ १ २ ३ १ २ ३ २
गावो यन्ति गोपतिं पृच्छमानाः सोमं यन्ति मतयो वावशानाः॥ ५२५॥
३ २ ३ २ ३ १ २ ३ १ २ ३ २ ३ २ ३ १ २ ३ १ २
अस्य प्रेषा हेमना पूयमानो देवो देवेभिः समपृक्त रसम्।
३ २ ३ २ ३ १ २ ३ १ २ ३ २ ३ १ २ ३ २ १ २
सुतः पवित्रं पर्य्येति रेभन्मितेव सद्म पशुमन्ति होता॥ ५२६॥
१ २ ३ १ २ ३ १ २ ३ २ ३ १ २ ३ १ २ ३ २
सोमः पवते जनिता मतीनां जनिता दिवो जनिता पृथिव्याः।
३ १ २र ३ १ २र ३ १ २ ३ १ २र
जनिताग्नेर्जनिता सूर्यस्य जनितेन्द्रस्य जनितोत विष्णोः॥ ५२७॥
३ १ २ ३ १ २र ३ १ २ ३ १ २ ३ १ २
अभि त्रिपृष्ठं वृषणं वयोधामङ्गोषिणमवावशन्त वाणीः
२ ३ १ २ ३ १२ ३ २उ ३ १ २ ३ १ २ ३ १ २
वना बसानो वरुणो न सिन्धुर्वि रत्नधा दयते वार्याणि॥ ५२८॥

input	skt	skti
a	अ or implicit	*a*
aa	आ or ा	*ā*
i	इ or ि	*i*
ii	ई or ी	*ī*
u	उ or ु	*u*
uu	ऊ or ू	*ū*
.r	ऋ or ृ	*ṛ*
.r.r	ॠ or ॄ	*ṝ*
.l	ऌ or ॢ	*ḷ*
.l.l	ॡ or ॣ	*ḹ*
e	ए or े	*e*
ai	ऐ or ै	*ai*
o	ओ or ो	*o*
au	औ or ौ	*au*
a.m	अं	*aṃ*
a"m	अं	*aṁ*
a~m	अꣳ	*aṃ̃*
a.h	अः	*aḥ*

input	skt	skti
0	०	*0*
1	१	*1*
2	२	*2*
3	३	*3*
4	४	*4*
5	५	*5*
6	६	*6*
7	७	*7*
8	८	*8*
9	९	*9*

input	skt	skti
ka	क	*ka*
kha	ख	*kha*
ga	ग	*ga*
gha	घ	*gha*
"na	ङ	*ṅa*
ca	च	*ca*
cha	छ	*cha*
ja	ज	*ja*
jha	झ	*jha*
~na	ञ	*ña*
.ta	ट	*ṭa*
.tha	ठ	*ṭha*
.da	ड	*ḍa*
.dha	ढ	*ḍha*
.na	ण	*ṇa*
ta	त	*ta*
tha	थ	*tha*
da	द	*da*
dha	ध	*dha*
na	न	*na*
pa	प	*pa*
pha	फ	*pha*
ba	ब	*ba*
bha	भ	*bha*
ma	म	*ma*
ya	य	*ya*
ra	र	*ra*
la	ल	*la*
va	व	*va*
"sa	श	*śa*
.sa	ष	*ṣa*
sa	स	*sa*
ha	ह	*ha*

input	skt	skti
.a	ऽ	’
|	।	|
||	॥	||
.o	ॐ	*Om̃*
"h	ᳵ	*h̤*
"da	ळ	*ḍ̤a*
"dha	ळ्ह	*ḍ̤ha*
a@	अ॰	*a*°
..	.	.
a#	अँ	*ã*
a!	अ॑	*a̍*
a!!	अ᳚	*a̎*
a_	अ॒	*a̱*
a"1	अ१॒॑	*a1̱̍*
a"3	अ॒३॒॑	*a̱3̱̍*
a.1	अ१॒	*a1̱*
a.3	अ३॒॑	*a3̱̍*
a^	अ꣫	$\overset{u}{a}$
a’	—	*á*
a‘	—	*à*
a<1>	अ꣡	$\overset{1}{a}$
a<2>	अ꣢	$\overset{2}{a}$
a<3>	अ꣣	$\overset{3}{a}$
a<2r>	अ꣢꣯	$\overset{2r}{a}$
a<2u>	अ꣢꣫	$\overset{2u}{a}$
a<3k>	अ꣣꣬	$\overset{3k}{a}$
a<!!>	अ᳛	*a⃛*
a<u>	अ᳜	*a̯*
a<w>	अ᳝	*a̮*
a<_>	अ॒	*a̱*
a<.>	अ᳭	*ḁ*
a<..>	अ᳞	*ḁ̥*
a<!>	अ᳙	*a̩*
a<^>	अ᳚	*a̭*
a<s>	अʃ	*aʃ*

Encoding and Transliteration Scheme.

(default options)

Vedic Accent Marking

Since the significance of the *devanāgarī* accent marking may differ between *Veda*s (e.g. अ॑ is *svarita* in *Ṛgveda*, but *udātta* in *Kāṭhaka*), the character used for encoding is, where possible, vaguely similar to the form used in the *devanāgarī*, and this form is largely retained in the transliterated output.

Ṛgveda etc. marking system:
use option 6 to enable these in
the basic transliteration mode.

input	skt	skti	sktt
`a!`	अ॑	*a̍*	error
`a!!`	अ᳚	*a̎*	error
`a_`	अ॒	*a̱*	see note
`a"1`	अ१॒॑	*a1̱̍*	error
`a"3`	अ॒३॒॑	*a̱3̱̍*	error
`a.1`	अ१॒	*a1̱*	error
`a.3`	अ॒३॒॑	*a̱3̱̍*	error

Note: The underscore character is
is used differently in technical mode.

Western (and technical) marking.

input	skt	skti	sktt
`a^`	अ꣫	*a*^{u}	a^{u}
`a'`	error	*á*	á
`` a` ``	error	*à*	à

Sāmaveda and other accents:
use option 7 to enable these in
the basic transliteration mode.

input	skt	skti	sktt
`a<1>`	अ꣡	*a*^{1}	error
`a<2>`	अ꣢	*a*^{2}	error
`a<3>`	अ꣣	*a*^{3}	error
`a<2r>`	अ꣢꣯	*a*^{2r}	error
`a<2u>`	अ꣢꣫	*a*^{2u}	error
`a<3k>`	अ꣣꣬	*a*^{3k}	error
`a<!!>`	अ᳛	*a‴*	error
`a<u>`	अ̮	*a̮*	error
`a<w>`	अ̮̮	*a̮̮*	error
`a<_>`	अ̱	*a̱*	error
`a<.>`	अ̥	*ḁ*	error
`a<..>`	अ̥̥	*ḁ̥*	error
`a<!>`	अ̩	*a̩*	error
`a<^>`	अ̭	*a̭*	error
`a<s>`	अʃ	*aʃ*	error

The pre-processor only allows accents after a vowel, Vedic *anusvāra*, or `n`; where the vowel is nasalised as well, the nasalisation must be after the accent, i.e. `a_#` to produce अँ॒.

The *devanāgarī* accent marks themselves may be printed in colour (red is the tradition) or grey. This actually makes the text easier to read: the sample text from the *Ṛgveda* on page **??** has the accents in the first four verses the default black, and in the next four verses they are 'lightgray' (using `xcolor`). To set the accent colour redefine the `\ZK` command anywhere in the `.skt` file as `\renewcommand{\ZK}[1]{{\lightgray #1}}` for example.

In transiteration, the accents should stack correctly and track in italics, e.g.:
ṝ̱́ and *ṝ̱́* (signifying a long or short *udātta* *ṛ* used for pronunciation only).