



Soyombo for \LaTeX , v. 0.9

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1 Introduction

Soyombo for \LaTeX is a package providing the Soyombo script and the Soyombo symbol for \LaTeX users. The Soyombo script and the Soyombo symbol were both developed in 1686 by the famous Mongolian monk and scholar Zanabazar. Modelled after the Lantsa-Dewanagari script, the Soyombo script combines the phonemic repertoire of Mongolian, Sanskrit, and Tibetan. The script is not in wide use today; its usage is basically limited to religious texts, inscriptions on temples, etc. The Soyombo symbol (the symbol appearing in the title of this article) however, can be seen virtually everywhere: on the national flag, on money, on books — the instances are too numerous to be counted.

The logical construction of the script is two-dimensional, not linear. Basic consonants are combined with vowels and final consonants in a way similar to Tibetan; in fact, some of the letter shapes as well as the arrangement of the alphabet was heavily influenced by Tibetan.

The basic consonant fills the major area of the symbol; if no vowel sign is added, the basic vowel *a* is assumed; if a vowel is added, then it is either placed on top of the character (in case of *i*, *ä*, *o*, *ö*) or in the lower third of the character box (in the cases of *ü*, *u*). A secondary consonant, i.e. a consonant closing the syllable, can be added to the basic character; it is then placed in the right third of the lower third of the character box. Long vowels are marked by a protruding tip of the right-side beam. there are two diphthongs, *Vu*, *Vi*, which are both attached to the right side of the basic character.

Figure 1 shows how the letters are composed.

2 How to use the Soyombo package

This section describes which files are necessary, which commands are needed for invoking the Soyombo symbol and characters, and how special symbols are entered.

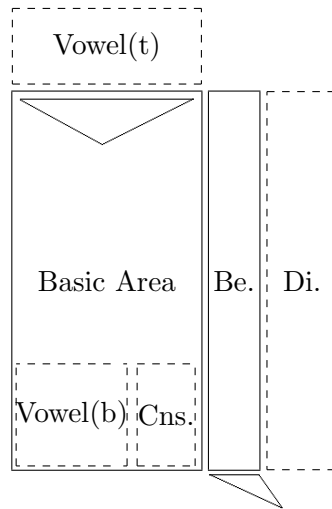


Figure 1: The Structural Layout of Soyombo Characters

2.1 Necessary files

The Soyombo package consists of the following files:

Package The file `soyombo.sty` provides all necessary declarations and commands for selecting and entering the Soyombo symbol and script. Place this file somewhere where your $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ installation will find it. In `emtex` systems, this could be the path `\emtex\texinput\mls` assuming you have a subdirectory named `mls` which holds everything necessary for Mongolian Language Support.

Fonts The font files `soyombo.mf` and `soyobot.mf` provide the alphabet and the symbol, respectively. They should reside in a directory where `META-FONT` can find them, e. g. `\emtex\mfinput\mls`. Here again, it is assumed that a directory `mls` has been created for holding these and other fonts necessary for typesetting Mongolian.

Font Metrics The font metrics files `soyombo.tfm` and `soyobot.tfm` go into `\emtex\tfm\mls`.

Documentation This file is named `soyo4tex.tex`. You are reading it at the moment. It can be placed in the same directory as `soyombo.sty` or in a separate directory in the `\emtex\doc` branch.

2.2 Declarations and Commands

In order to use the Soyombo script, the preamble of your document must contain the declaration `\usepackage{soyombo}`. This is the only necessary step. Two commands become available then: `\Soyombo` produces the Soyombo symbol (see the title of this article), and `\soyombo` switches to the Soyombo character set.

2.3 Input method

Within an environment declared by `\soyombo`, entering most of the basic characters is straightforward. Initial consonants are entered as such. Except for *a* which is not marked vowels are entered by using lowercase letters for back vowels and uppercase letters for front vowels: *o ö u ü* are entered as *o O u U*. Both *u U* have a form variant entered as *v V* which is shorter and used for combinations with final consonants.

Syllable finals are entered in uppercase. In most cases, the same letter as for the initial (and lowercase) version is used.

The following example shows how the words *xamury sädgil-tü* written in Soyombo ᠬᠠᠮᠤᠷᠢ ᠰᠠᠳᠦᠭᠢᠯᠢᠲᠦ translate into a sequence of transliteration and input characters.

| Original | ᠬ | ᠮᠤᠷᠢ | | | | ᠰᠠᠳᠦ | | | ᠭᠢᠯᠢ | | | | ᠲᠦ | |
|----------------|---|------|---|---|---|------|---|---|------|---|---|---|----|---|
| Decomposed | ᠬ | | ᠮ | ᠮ | ᠮ | ᠰ | ᠰ | ᠰ | ᠭ | ᠭ | ᠭ | | ᠲ | ᠲ |
| Transliterated | x | a | m | u | ᠎ | s | ä | d | g | i | l | - | t | ü |
| Input | k | | m | v | G | s | e | D | g | i | L | | t | U |

In order to show the construction of the Soyombo characters (for writing text books, etc.) one blind or dummy character ᠬ was created which does not appear in the original alphabet.

The symbols used for writing Sanskrit and Tibetan are accessed by control sequences in the form of `\sXX` where `\s` stands for Soyombo and `XX` has to be replaced by a one-, two- or three-letter combination found in the encoding table.

3 Desiderata

The package in its present stage cannot be regarded complete. Some of the letter shapes still need a bit of refinement, and maybe there is even the possibility to create more typeface variants in order to reflect various printing styles.

The input method works but is a bit clumsy to use; an input preprocessor translating properly spelled Mongolian into the Soyombo equivalent waits to be developed.

Comments and suggestions are highly appreciated and should be directed to the author of these lines at `corff@zedat.fu-berlin.de`.

| | | | | | | | | |
|---|-----------|-----------|---------|------------|-------------|------------|------------|-------|
| | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 |
| 0 | | 𑄀 | 𑄁 | 𑄂 | 𑄃 | 𑄄 | 𑄅 | |
| | (000) | (016:‘) | (032:g) | (048:\\$) | (064:\sri) | (080:\sDH) | (096:ssk) | (112) |
| 1 | 𑄆 | 𑄇 | 𑄈 | 𑄉 | 𑄊 | 𑄋 | 𑄌 | |
| | (001:‘) | (017:‘-) | (033:k) | (049:s) | (065:\sri) | (081:\sB) | (097:\srk) | (113) |
| 2 | 𑄍 | 𑄎 | 𑄏 | 𑄐 | 𑄑 | 𑄒 | 𑄓 | |
| | (002:\sA) | (018:‘i) | (034:x) | (050:h) | (066:\sli) | (082:\sBH) | (098:Z) | (114) |
| 3 | 𑄔 | 𑄕 | 𑄖 | 𑄗 | 𑄘 | 𑄙 | 𑄚 | |
| | (003:.) | (019:‘i-) | (035:z) | (051:\sks) | (067:\sli-) | (083:\sds) | (099:C) | (115) |
| 4 | 𑄛 | 𑄜 | 𑄝 | 𑄞 | 𑄟 | 𑄠 | 𑄡 | |
| | (004:. .) | (020:‘e) | (036:c) | (052:‘G) | (068:‘o) | (084:\sky) | (100:J) | (116) |
| 5 | 𑄢 | 𑄣 | 𑄤 | 𑄥 | 𑄦 | 𑄧 | 𑄨 | |
| | (005:\sO) | (021:‘e-) | (037:=) | (053:‘K) | (069:‘H) | (085:\skr) | (101:X) | (117) |
| 6 | | 𑄩 | 𑄪 | 𑄫 | 𑄬 | 𑄭 | 𑄮 | |
| | (006) | (022:‘U) | (038:d) | (054:‘*) | (070:\sg) | (086:\skl) | (102:q) | (118) |
| 7 | | 𑄯 | 𑄰 | 𑄱 | 𑄲 | 𑄳 | 𑄴 | |
| | (007) | (023:‘U-) | (039:t) | (055:‘D) | (071:\sgh) | (087:\skm) | (103:⊙) | (119) |
| 8 | | 𑄵 | 𑄶 | 𑄷 | 𑄸 | 𑄹 | | |
| | (008) | (024:‘u) | (040:n) | (056:‘N) | (072:j) | (088:\skk) | (104) | (120) |
| 9 | | 𑄺 | 𑄻 | 𑄼 | 𑄽 | 𑄾 | | |
| | (009) | (025:‘u-) | (041:b) | (057:‘B) | (073:\sjh) | (089:\snk) | (105) | (121) |
| A | | 𑄿 | 𑅀 | 𑅁 | 𑅂 | 𑅃 | | |
| | (010) | (026:‘o) | (042:p) | (058:‘M) | (074:T) | (090:\snc) | (106) | (122) |
| B | | 𑅄 | 𑅅 | 𑅆 | 𑅇 | 𑅈 | | |
| | (011) | (027:‘o-) | (043:m) | (059:‘R) | (075:\sth) | (091:\snt) | (107) | (123) |
| C | | 𑅉 | 𑅊 | 𑅋 | 𑅌 | 𑅍 | | |
| | (012) | (028:‘O) | (044:y) | (060:‘L) | (076:\sdd) | (092:\snd) | (108) | (124) |
| D | | 𑅎 | 𑅏 | 𑅐 | 𑅑 | 𑅒 | | |
| | (013) | (029:‘O-) | (045:r) | (061:‘Q) | (077:\sdh) | (093:P) | (109) | (125) |
| E | | 𑅓 | 𑅔 | 𑅕 | 𑅖 | 𑅗 | | |
| | (014) | (030:‘w) | (046:w) | (062:‘S) | (078:\sdn) | (094:\s1k) | (110) | (126) |
| F | | 𑅘 | 𑅙 | 𑅚 | 𑅛 | 𑅜 | | |
| | (015) | (031:‘I) | (047:l) | (063:‘-a) | (079:\sD) | (095:\sSk) | (111) | (127) |

Figure 2: Soyombo Character Input Table