

LaoScript 10 Add-Ins for Microsoft Office Applications

Version 10.3

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Overview

LaoScript 10 Add-Ins for Microsoft Office Applications extend the support for Lao language provided by *Microsoft Windows* as follows:

- The Lao text in a document can be checked for Lao spelling errors using the provided dictionary of Lao words, optionally marking unrecognized words and inserting hidden word breaks between words and discretionary hyphens between syllables.
- The dictionary recognizes both simplified and classical (pre-1960) spelling conventions and may include names or loan words transliterated from other languages. Dictionary entries may be grouped into different word categories as appropriate. The dictionary may be extended by adding entries or importing wordlists from Excel, Access or appropriate text files, and word categories or the entire dictionary may also be exported.
- Lao text can be converted to “romanized” form, using either simplified or phonetic representation of Lao in Latin script. The phonetic representation follows either the conventions used in the widely-used Lao-English Dictionary by Allen Kerr¹ or IPA² and is intended primarily for use in preparing dictionaries and wordlists of Lao language.
- Documents containing Lao text using old (obsolete) 8-bit coding can be converted into standard, Unicode-coded Lao, replacing the old font by an appropriate Lao Unicode font.
- Lao text in cells (in Word tables or on Excel worksheets) can be sorted according to Lao alphabetical order.

Installing the Add-Ins

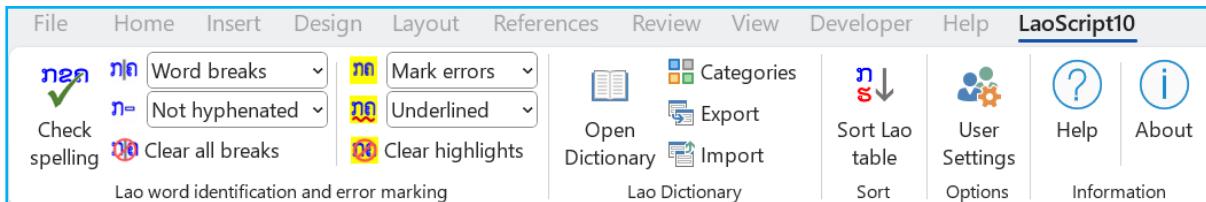
See [Installing the LaoScript 10 Add-Ins](#) at the end of this document for full instructions for installing one or more of the LaoScript 10 Add-Ins for Microsoft Office.

¹ Republished 1992 by White Lotus Co., Ltd, Bangkok, Thailand

² International Phonetic Alphabet, https://en.wikipedia.org/wiki/International_Phonetic_Alphabet

The Add-In for Microsoft Word

After the **Add-In for Microsoft Word** has been installed, a **LaoScript10** ribbon tab will be visible whenever a Word document is opened:



All interaction with the Add-In is by using controls on the ribbon tab, either to process selected text, or through dialogs presented, such as the [Lao Dictionary](#) and [User Settings](#) dialogs.

Selected text in the document can be checked for unknown words or incorrect spelling (with or without insertion of word and syllable break codes), romanized or converted to Lao Unicode from old-coded Lao. If no text is selected, the paragraph at the insertion point will be processed, unless *Shift* is pressed, in which case you will be asked whether or not to process the entire document, optionally including headers, footers and other inserted content.

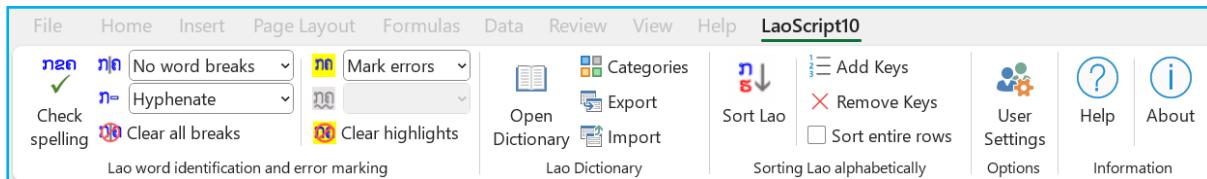
Lao text in tables of one or more columns can be sorted alphabetically (by rows) according to the Lao content of the selected column.

By default, the ribbon will appear as shown above, but additional tab groups for romanizing Lao text and converting old-code Lao text can be displayed by checking options in User Settings.

More information for each function is provided below.

The Add-In for Microsoft Excel

After the **Add-In for Microsoft Excel** has been installed, a **LaoScript10** ribbon tab will be visible whenever an Excel workbook is opened:



Interaction with the Add-In is either using ribbon controls to process Lao text in worksheet cells, or using worksheet functions that process Lao text dynamically (see below).

Functions provided by the *LaoScript10* ribbon tab are almost the same as those provided by the Add-In for Microsoft Word, with three main differences:

- All functions are applied to all text in the selected cells, not to selected text within a cell.
- Error marking only has a single style (highlighting).
- Sorting of Lao text is more flexible (see [Sorting Lao Text](#)).

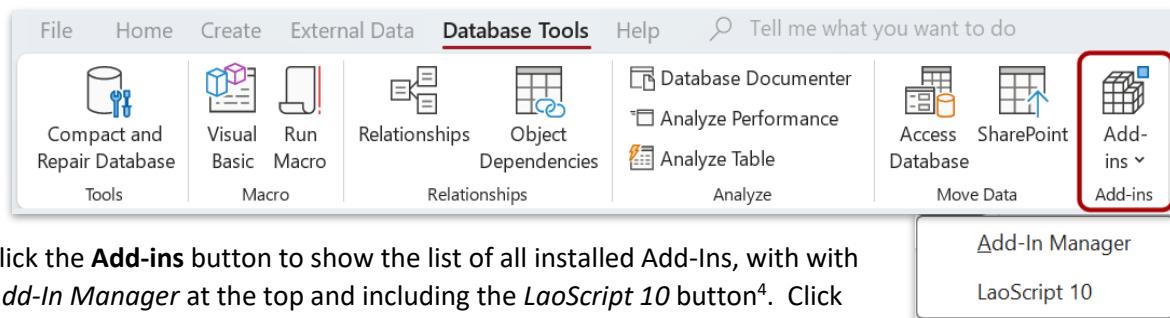
Lao text-processing functions can also be used to process text dynamically in referenced cells. See [Worksheet and query functions](#) for details.

The Add-In for Microsoft Access

The *LaoScript10 Add-in for Microsoft Access* is somewhat different from the Add-Ins for Word and Excel. The main purpose of the Add-In for Access is to allow Lao text processing functions to be used in queries processing Lao text in database columns. See [Worksheet and query functions](#) for a list of Lao text-processing functions and the required and optional arguments for each function that may be called in a database query. The Add-In also has a custom menu (see below). None of the menu functions are required when using the Lao text-processing functions in a query, but *the menu must be shown at least once before executing any queries calling any of the text-processing functions*.³

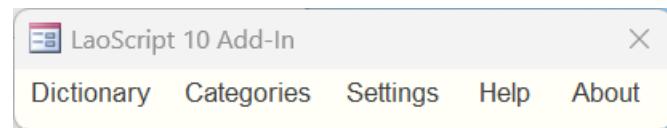
When calling any Lao text-processing functions in a query it is usually best to explicitly define all arguments rather than rely on User Settings, since the User Settings are common to all three Add-Ins and may be modified when either the Add-In for Word or the Add-In for Excel is used.

After installation, when any database is opened, the Add-In displays a custom menu (not a ribbon tab), which can be opened from **Database Tools – Addins** :



Click the **Add-ins** button to show the list of all installed Add-Ins, with with *Add-In Manager* at the top and including the *LaoScript 10* button⁴. Click this button to display the LaoScript 10 custom menu.

The LaoScript 10 custom menu will always be located at the top right corner of the screen and appear as:



The menu functions are similar to those described for the Add-Ins for Word and Excel but use table-bound Access forms rather than VBA User Forms⁵.

³ Displaying the menu adds a reference to the Add-In in the database that is open. It does not need displaying again when the database is re-opened unless the menu functions are needed.

⁴ If the *LaoScript 10* button is not shown, see instructions at [Resolving Installation Issues](#).

⁵ Access does not support VBA User Forms.

Checking Lao Spelling

LaoScript10 uses a large dictionary of Lao words to identify possible misspellings. To check the spelling of Lao text in a document, select the text range to be checked and click **Check Lao**. Unidentified Lao words will optionally be highlighted, underlined or both. If no text is selected, then the paragraph containing the insertion point (caret) will be checked or the entire document (after confirmation) if *Shift* is pressed.

For example, when the following text from a recent news article⁶ is checked, it appears as:

ທົວຂໍຂ່າວສ່າຄັນສໍາລັບແລງມີນີ້ ມີດັ່ງນີ້: ອະດີດສະມາຊີກສະພາແຫ່ງຊາດຂອງກຳປູເຈຍ ທຶກບົງເສຍຊີວິດຢູ່ບາງກອກ, ສະມາຊີກລັດຖະສະບາຍະລັດ ຍ້ອງຢໍປະທານກທິບິດ ຈີມມີ ອາຣຕີ ໃນທຳ Rotunda 29ທຳລັດຖະສະພາສະບາຍະລັດ, ແລະ ເກົ່າຫຼືເໝີ້ອໄດ້ທົດລອງລູກສອນໄຟຂີປະນາວຸດໄລຍະກາງທີ່ມີຄວາມໄວເຕີນສູງແມ່ໄສ່ເປົ້າໝາຍໃນເຂດປາຊີຝຶກ.

The highlighted characters indicate a word or part of a word that was not found in the Lao dictionary, which may also be a misspelling or a loan word transliterated from English or another language. Unidentified words may be highlighted (as above), underlined **ຈີມມີ ອາຣຕີ** or both highlighted and underlined **ຈີມມີ ອາຣຕີ**. Select the wanted marking style from the marking style drop-down list, or select *Do not mark* to process the text without marking errors. Click the *Clear highlights* button to remove all error-marking in a paragraph or selected text range.

Word breaks

Until fairly recently hidden breaks⁷ were often inserted between Lao words to allow the text to wrap correctly. Most operating systems now wrap Lao text at word boundaries without needing inserted word-break codes but inserted word breaks are still sometimes useful, and will be inserted during spell-checking if *Word breaks* is selected in the top-left drop-down control⁸.

Hyphenation

Traditionally, Lao words have not been hyphenated, but the readability of Lao text is improved if discretionary hyphens are inserted between syllables and a visible hyphen is displayed when a word of many syllables is broken at the end of a line. This is especially helpful when Lao text is fully justified. Select *Hyphenated* in the drop-down list at the left of the menu bar to insert discretionary hyphens within Lao words when checking spelling. All discretionary hyphens (as well as the hidden word-break characters) become visible if the  “Show marks” button has been pressed.

All inserted word breaks and discretionary hyphens can be removed from the selected text by clicking *Clear breaks* and will also be removed if *Check Lao* is clicked without either *Word breaks* or *Hyphenated* being selected.

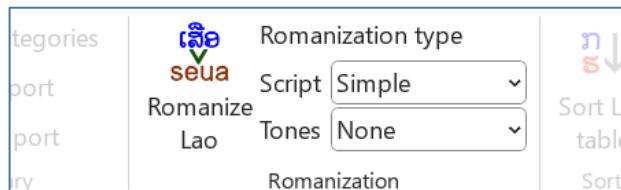
⁶ <https://lao.voanews.com/a/voa-lao-radio-on-tv-live-streaming/7929403.html>

⁷ Typically the zero-width space character U+200B.

⁸ When hidden word breaks are inserted, they can be made visible by clicking “Show marks” button (on the ribbon menu Home tab) or using the shortcut key combination Ctrl-Shift-8.

Romanizing Lao Text

The LaoScript10 Add-Ins offer romanization of Lao text according to several different conventions, using buttons and drop-down controls in the Romanization section of the LaoScript10 menu⁹.



The following table illustrates use of the different conventions:

Conversion	Tones	ການຂຽນພາສາລາວສ່ວຍງາມແທ້ງ
Simple	None	kan khian phasa law suay ngam thaethae
Simple	Numbers	kan khian pha sa law suay ngam tha ² tha ²
Simple	Accented	kan khian phásá láw súay ngám thàethàe
Phonetic	None	ka:n khia:n pha:sa: la:w sua:y nga:m the:the:
Phonetic	Accented	ka:n khia:n phá:sá: lá:w súa:y ngá:m thè:thè:

The tone accents follow the conventions used by Allen Kerr¹⁰ for representing the various tone profiles found in Vientiane Lao.

The appearance of romanized text is also affected by the *Word breaks* and *Hyphenation* settings, as shown below for *Simple* romanization:

Word breaks	Hyphenation	ການຂຽນພາສາລາວສ່ວຍງາມແທ້ງ
Yes	Yes/No	kan khian phasa law suay ngam tha ² tha ²
No	Yes	kankhianphasalawsuayngamtha ² tha ²
No	No	kan khian pha sa law suay ngam tha ² tha ²

When *Hyphenation* is selected but not *Word breaks*, the romanized text will be a string of syllables separated by the discretionary hyphen used by Word (d31). Otherwise words will be separated by visible spaces.

The font for romanized Lao text may be specified and the following additional romanization options may be set separately or together in user settings:

Option	ພວກເຮົາອາໄສຢູ່ໃນອົດສະຕາລີ	Conversion
Show visible syllable breaks	phuak hao a·sai yu ¹ nai ot·sa·ta·li	Simple
Use gloss when appropriate	phuak hao asai yu ¹ nai [Australia]	Simple
Use IPA for phonetic rendering	pʰùa:k háw a:sáj yú: náj ótsá:a:li:	Phonetic
Show visible initial glottal stops	pʰùa:k háw ?a:sáj yú: náj ?ótsá:a:li:	Phonetic

See [Word Categories](#) for details of when romanized words may be replaced by glosses.

⁹ If the Romanization control group is not visible in the ribbon menu, open [User Settings](#) and check *Show romanization in menu*.

¹⁰ Kerr, Allen D, Lao-English Dictionary, Republished 1992 by White Lotus Co., Ltd, Bangkok, Thailand.

Sorting Lao Text

Tables of cells containing Lao text may be sorted alphabetically. Set the caret in the first cell of the column to sort by and the entire table will be sorted by rows, as shown below where the unsorted table is at the left and the sorted table at the right has been sorted by the Lao words in the second column:

No	word	gloss
1	ມັງກອນ	January
2	ກຸມພາ	February
3	ມືນາ	March
4	ເມສາ	April
5	ພຶດສະພາ	May
6	ມີຖຸນາ	June
7	ກໍລະກົດ	July
8	ສິງຫາ	August
9	ກັນຍາ	September
10	ຕຸລາ	October
11	ພະຈິກ	November
12	ທັນວາ	December

No	word	gloss
7	ກໍລະກົດ	July
9	ກັນຍາ	September
2	ກຸມພາ	February
8	ສິງຫາ	August
10	ຕຸລາ	October
12	ທັນວາ	December
11	ພະຈິກ	November
5	ພຶດສະພາ	May
6	ມີຖຸນາ	June
3	ມືນາ	March
4	ເມສາ	April
1	ມັງກອນ	January

The Lao text must be in a table with rows containing the equal numbers of cells for sorting to be applied. Sorting is according to the Lao alphabetical order, that is phonetically according to initial consonant, final consonant, vowel pattern, then tone.

The Lao Dictionary

When checking scientific, technical, legal or other texts that include very specific terminology, or texts with many (transliterated) names, it is helpful to include additional lists of word not in the regular dictionary. Such lists can be imported into the dictionary and assigned a category name, allowing them to be included or excluded as appropriate when checking Lao texts.

Spelling Conventions

Any word that is included in or added to the dictionary will be accepted as correctly spelled, whether it uses the current simplified spelling convention or the older, ‘classical’ pre-1960 way of spelling, or even if a transliterated name or loan word that follows neither convention.

Words or names that have not been identified may be added to the dictionary and the text checked again or else the unidentified words may just be ignored by clicking **Clear highlights** to remove all error marking from the selected text.

Lao words written with a ‘digraph’ initial consonant ບົບ, ບົມ or ບົລ will always be stored in the dictionary using the (more correct) ligature forms ບົ, ບົມ or ບົລ unless ambiguous¹¹. Similarly, a word containing SALA AM (ໝ) that has been entered as two separate components (ໝ + ພ) will be stored using the single code (ໝ = U+0EB3) and any tone-mark re-ordered as necessary. However, all forms of a word are accepted when checking spelling.

The spelling convention for most Lao words entered in the dictionary is ‘simplified’, following current standards adopted in Lao PDR. ‘Simplified’ spellings are very closely phonetic, that is, the pronunciation of the word can almost always be correctly determined from the way the word is written. However, the dictionary also includes many older words using ‘classical’ spelling conventions which are often found in older texts (and Lao texts written by expatriate Lao). Some examples of words with different classical and simplified spellings are shown in the following table.

Classical	Simplified
ຕລາດ	ຕະຫຼາດ (ຕະຫລາດ)
ຄັ້ມຜີ	ຄໍາຜີ
ຄັ້ພ	ຄັບພະ
ຮັຖບານ	ລັດຖະບານ

convention used.

When a classically-spelled word is added to the dictionary, the corresponding simplified spelling will be added automatically to the field **Phonetic Lao** provided. This has two purposes – first, it allows the word to be correctly romanized and second, it means that a word will be correctly alphabetically ordered regardless of the spelling

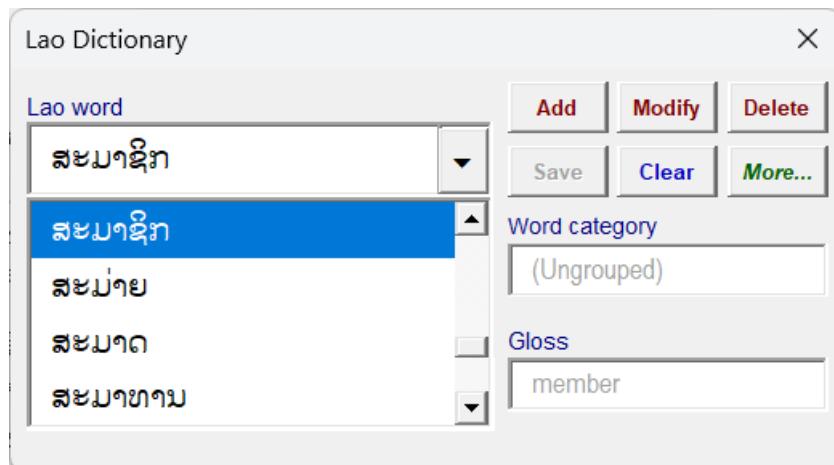
The Lao dictionary provides for words to be treated either as a single category or to be divided into two or more categories, any or all of which can be included when checking spelling. The same word may be entered in different categories but a word cannot be entered more than once twice in the same category. Word categories are included or excluded for spell-checking, and added, renamed or deleted using the Categories form (see below).

The Lao dictionary has two modes of use, Simple and Extended. Click **More...** to change from *Simple* to *Extended* mode, or **Less...** to change from *Extended* to *Simple* mode.

¹¹ In a few single-syllable words with prefix vowels, the second consonant could be either initial or final.

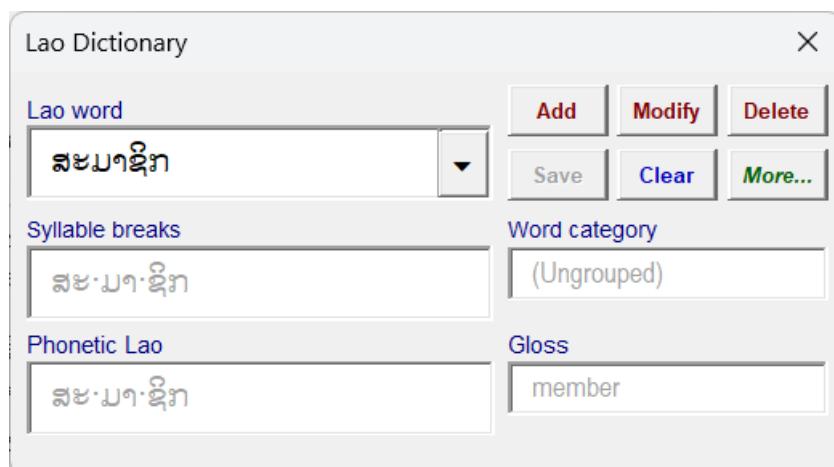
Dictionary Form - Basic Display

Select a Lao word and click **Open Dictionary** to open the dictionary to the entry for that word (or create a new entry if it is not included). For example:



A word may also be selected by typing the word¹² at *Lao word* or finding and clicking an entry in the drop-down list.

Double-click the selected word in the drop-down list (or click **Modify**) to display other properties of the entry. The dictionary form will then appear as:



Each control is described below.

Add

Clicking **Add** allows an unlisted word to be inserted as a new entry in whatever word category is selected. Hyphenated and standard (phonetic) spellings are calculated automatically but may be corrected if necessary. Click **Save** to save the inserted entry or **Cancel** to stop entry editing. Clicking **Add** for a listed entry allows that entry to be duplicated in another word category.

Modify

Clicking **Modify** allows the word spelling, word category, or other word properties to be edited. After any changes are made, click **Save** to save the changes in the dictionary, **Undo** to undo any changes made or **Cancel** to stop entry editing.

¹² Lao keyboard entry is automatically selected when editing any of the three controls with Lao text.

Delete

For any listed entry, if **Delete** is clicked, you will be prompted to confirm deleting that entry. If a word is listed in more than one category, only the entry displayed will be removed.

Save

After inserting a new word (using **Add**) or making any changes to an entry (using **Modify**) click **Save** to make the changes permanent and return to word-selection mode.

Clear

The function (and caption) of this control depends on the current editing mode. When a word is entered or selected but not being added or modified, click **Clear** to clear the entry and show an empty form. If a word is being added or modified, the caption will change initially to **Cancel**. Clicking the button will then close entry editing and return to word selection. When modifying a word and any change has been made, the caption will change to **Undo** and clicking the button will restore the original entry properties but remain in editing mode.

More...

Clicking **More...** changes the display to *Expanded* (see below)

Syllable breaks

The *Syllable breaks* control shows how the word will be hyphenated if hyphenation is used when checking spelling. It can be occasionally be helpful to change the default hyphenation by clicking **Modify** then editing the syllable divisions. For example, a pair of syllables such as ອິກວາ could be divided either as ອິກ·ວາ or as ອິ·ກວາ. To correct the hyphenation while editing the control content, press the Space bar to insert a syllable break where needed or press the Delete or Backspace keys to remove an existing break. Note that the edited *syllable break* control must remain identical to the *Lao word* control apart from inserted breaks characters.

If hyphenation is ambiguous, a blue flag may be shown and if the control value has been modified, a green flag will be displayed. Words that appear to be irregular and cannot be divided into standard Lao syllables will be marked by an orange flag, as shown here at the right:



Double-click anywhere in the control to restore the default hyphenation.

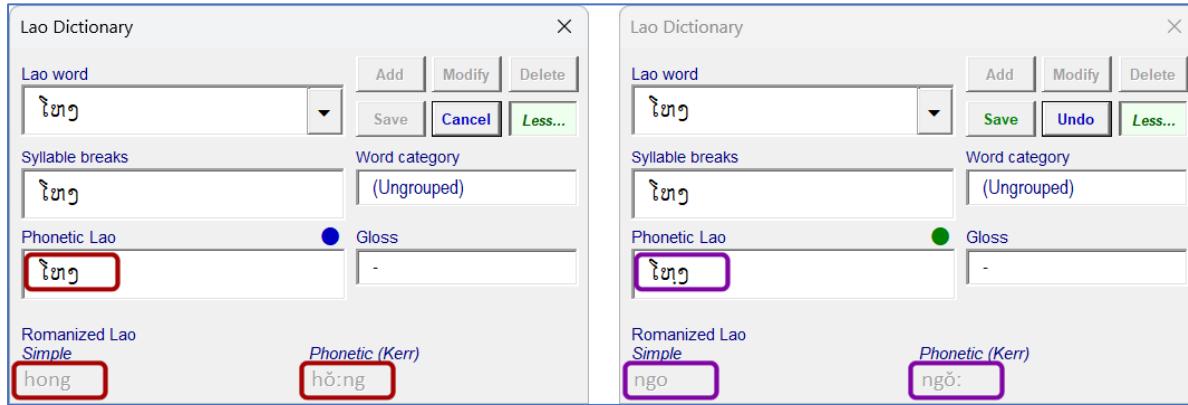
Phonetic Lao

The content of this control shows how the word would be written using standard spelling and how it would be pronounced. For most words, it will be identical to the content of the *Syllable breaks* control but for words using old spelling conventions and loan words it will usually be different. Again, the automatically calculated phonetic spelling can be edited as required and double-clicking in the control will restore the default phonetic spelling.

Default phonetic spelling is determined according to the way a word is divided into syllables so modifying the content of the *Syllable breaks* field may also change the calculated phonetic spelling. As with the *Syllable breaks* control, one or more coloured flags may be displayed, indicating if the phonetic Lao word is ambiguous (blue), has been edited (green) or does not consist entirely of legitimate Lao syllables (orange).

Resolving phonetic ambiguities

There are a few words in Lao which have phonetically ambiguous syllables, such as ໄໜງ. To ensure that such words are sorted alphabetically and romanized correctly, the syllable can be marked to indicate that there is an initial consonant cluster rather than initial and final consonants. To do this, edit the content of the Phonetic Lao control and insert a period immediately after the initial consonant of a cluster. The period will be saved and displayed as *Lao virama*, a small subscript dot beneath the first consonant of the cluster, as traditionally used to identify an initial consonant cluster in Lao. This is illustrated below:



Warning: The font *Saysettha OT* (version 3.0 or later), which is included in the installation zip file, must be installed for Lao virama to be displayed. Older versions of *Saysettha OT* do not include Lao virama.

Word category

When inserting or modifying a word, a different word category may be selected. However, if that would result in duplication of the word in the selected category, it will not be possible to save the modified (or inserted) entry. See [Word Categories](#) for more information.

Gloss

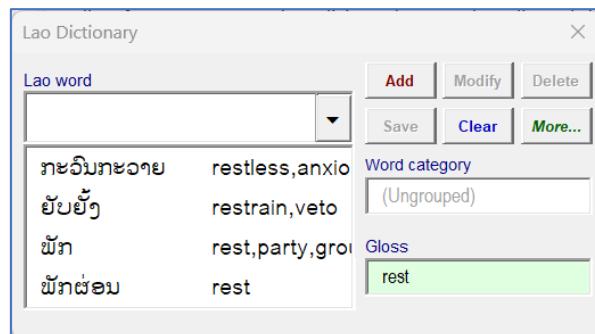
An English (or other Latin-script) gloss for any entry may be entered in the *Gloss* control when modifying an entry. If no gloss is entered, the control will simply display a hyphen.

Searching the dictionary by English gloss

The *Gloss* control may also be used for searching the dictionary for Lao words matching the entered text. To find any Lao word in the dictionary, simply start typing the word in the *Lao word* control and select the word from the list. If you want to find a Lao words that has an English word, or part of an English word in the gloss, click *Clear* then start typing the English word in the *Gloss*. Select the wanted Lao word from the filtered list of words displayed.

Click *Clear* again to resume normal dictionary searching.

A romanization option also allows the gloss to be substituted for the romanized Lao in certain situations. See [Word Categories](#) and [Romanizing Lao text](#) for further information.



Dictionary Form – Expanded Display

When the **More...** button is clicked, the button caption changes to **Less...** and the form is expanded to include some further controls:



The Romanized Lao word is shown with both simplified and phonetic conventions. The Romanized Lao word controls cannot be edited but will be updated whenever the Phonetic Lao is changed.

Filtering the word list

Sometimes it is convenient to restrict the displayed list to a single word category or to display only words that are ambiguous or have modified or irregular Syllable breaks or Phonetic Lao. The three filter drop-down controls allow the displayed list to be restricted as appropriate. Note that this does not limit the dictionary use when checking spelling. That can only be done using the [Word Categories](#) form (see below).

Word Categories

Dictionary entries may all be in a single “*Ungrouped*” category or may be grouped into different categories. It is sometimes convenient to use different categories to contain special word lists, especially when managing documents with technical, legal or other specialized terminology. Then when checking spelling one or more categories may be excluded if preferred.

This also allows separate word lists to be imported and exported. The **Categories** button in the menu bar opens a form displaying all configured word categories, showing the category properties how many words are included in that category:

Category	Include	Gloss*	Count
(<i>Ungrouped</i>)	Yes	-	15383
Loan words	Yes	Yes	1
Months	Yes	-	12
Names	Yes	Yes	12
Old spelling	Yes	-	870
Places	Yes	Yes	163
(New category)			

(*Ungrouped*)

To include or exclude all words in a category when checking Lao text, check or clear the check-box below *Include* then click *Apply*.

To rename a category, edit the name in the text box below the list of category names then click *Apply*.

To add a category, select (New category) in the list, give it a different name then click *Apply*.

To delete a category, select the category and press the **Delete** key. You will be prompted for confirmation and words in that category will be exported to a text file in the active document folder, from which they can be reimported later if required.

Warning: Deleting any word category will remove all words in that category from the dictionary.

Using glosses when romanizing Lao text

When romanizing Lao text it is often difficult to meaningfully convert loan words, especially place names and people names. If category option shown as **Gloss*** is checked (shown as Yes), and the User Setting *Use glosses when romanizing* is also checked, then the gloss will be inserted instead of the romanized Lao when a word in this category is found. This is illustrated in the following example.

Lao text	ລາວຊື້ໄປສນາມກອລົມເມື້ອນ
Simple romanized, normal conversion	law si pai sanamkolafa meueun
Simple romanization, using glosses	law si pai [golf course] meueun

This option only applies to “Simple” conversion and is ignored if the gloss has not been defined.

Exporting Dictionary Entries

Click **Export...** on the (*Extended Mode*) dictionary form to export all words in the currently selected category or all words in the dictionary. The exported list will be a tab-separated UTF-8 text file with columns as shown in this segment:

Word	Hyphenated	Gloss	Category
ກະ	ກະ	-	-
ກະເຣຕີ	ກະ-ເຣ-ຕີ	Crete	Names
ກະກຸສັນໄທ	ກະ-ກຸ-ສັນ-ໄທ	-	-
ກະກຸສົນ	ກະ-ກຸ-ສົນ	-	-
ກະກຸທະພັນ	ກະ-ກຸ-ທະ-ພັນ	-	-
ກະກົມ	ກະ-ກົມ	prepare	-
ກະຂອງວ່າ	ກະ-ຂອງ-ວ່າ	-	-
ກະແຈ	ກະ-ແຈ	-	-
ກະແຈດານ	ກະ-ແຈ-ດານ	-	-
ກະແຈມື	ກະ-ແຈ-ມື	-	-
ກະເຈາະກະຈອກ	ກະ-ເຈາະ-ກະ-ຈອກ	-	-
ກະເຈີກະເຈີກ	ກະ-ເຈີ-ກະ-ເຈີກ	-	-
ກະຈົວຂະຈວກ	ກະ-ຈົວ-ກະ-ຈວກ	-	-
ກະຈົກ	ກະ-ຈົກ	-	-
ກະຈາຍ	ກະ-ຈາຍ	scatter	-
ກະຈາຍສູງ	ກະ-ຈາຍ-ສູງ	-	-
ກະເຈັຍກະຈູກ	ກະ-ເຈັຍ-ກະ-ຈູກ	-	-
ກະເຈັຍະກະຈູກ	ກະເຈັຍກະຈູກ	-	Old spelling
ກະຈັດ	ກະ-ຈັດ	-	-
ກະຈັດກະຈາຍ	ກະ-ຈັດ-ກະ-ຈາຍ	scatter, scattered	-

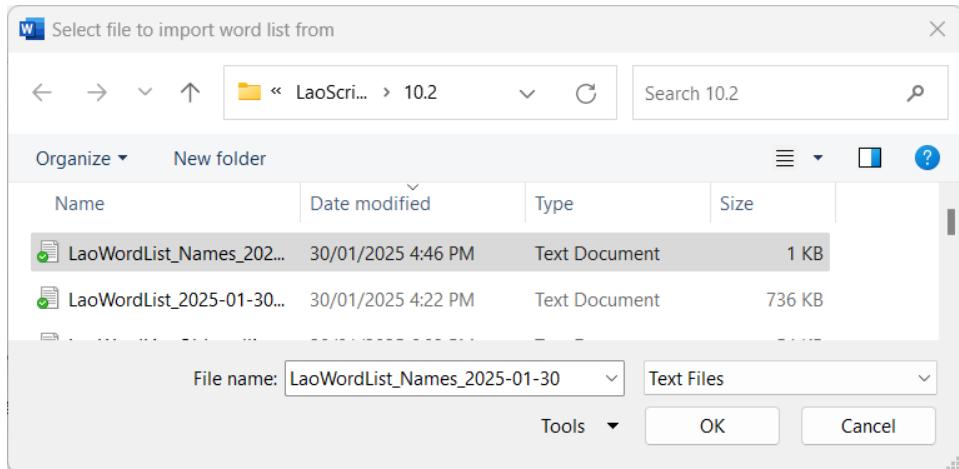
The default (Main list) category and undefined glosses are exported as single hyphens.

The highlighted row shows an example of a word that does not follow standard Lao spelling conventions so has an alternate spelling added for the sake of ordering. However, the (unhyphenated) original spelling will always be retained when text with this word is spell-checked.

Note that when any category of words is deleted (using the [User Settings](#) form) those words will automatically be exported before being removed from the dictionary database.

Importing Dictionary Entries

To import a word list, click **Import...** on the *Extended Mode* dictionary form. A file-picker browser will be displayed allowing the import file to be selected:



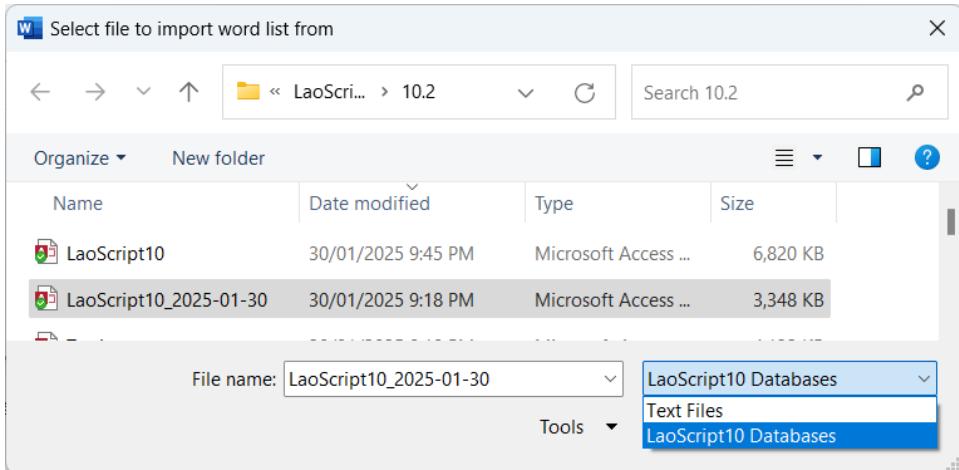
Duplicated entries will not be imported, and words being imported will have their spelling standardized before being inserted in the dictionary.

The word list being imported can be either a previously exported list or any suitably structured list of Lao words. See [Appendix: Lao Word List Import Specifications](#) for details.

For each Lao word imported, sorting keys will be calculated and added to the entry together with a hyphenated copy of the word (unless that was included with the entry in the imported text).

Importing entries from a prior database

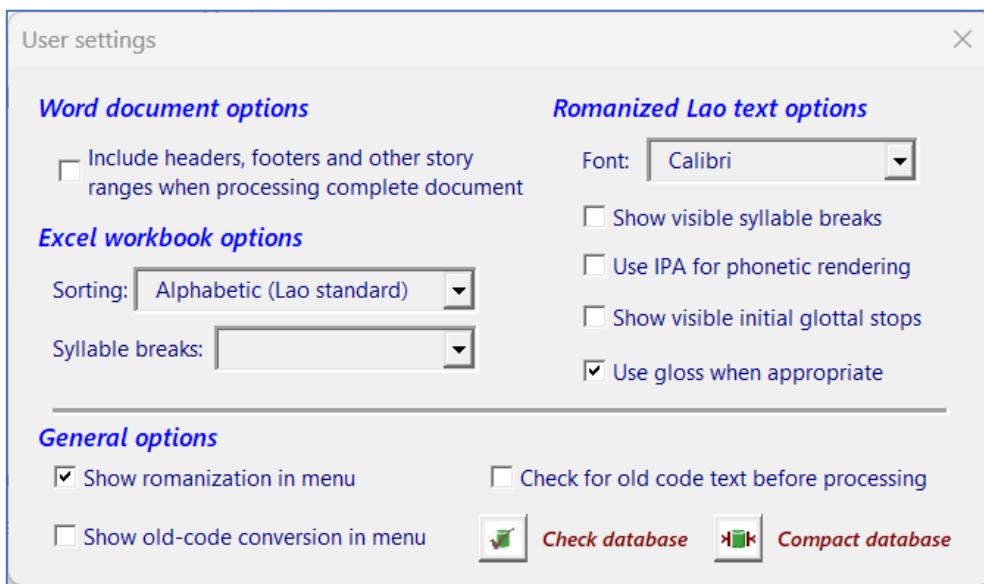
When upgrading to a newer version of the Add-In, any existing dictionary database will be backed up then replaced by the most recent version. The dictionary import feature includes an alternative mode:



The purpose of this feature is to ensure that any words that have been added by a user can be transferred to a new version when the Add-In is updated if wanted. It cannot be used to import word lists from non-LaoScript10 dictionary databases.

User Settings

Configurable user settings allow further flexibility when using the Add-In functions. The *User Settings* form appears as follows:



Word document options

Include headers, footers...

Text processing (checking Lao spelling, clearing highlighting or breaks, romanizing Lao text, or converting from old codes) is applied to the current selection, but if no text is selected, it will be applied to the Main story of the document. If there are page headers or footers or any other story ranges such as footnotes that may need to be checked or converted, this option should be checked when processing the entire document.

Excel workbook options

Sorting method

Selected columns or blocks of cells with Lao text in an Excel spread sheet can be sorted in three different ways:

- *Alphabetic (Lao standard)*
Sort entries alphabetically by syllables, with the word's phonetic syllables ordered by initial syllable consonant (or consonant pair), final consonant, vowel pattern, then tone.
- *Alphabetic (Vowel priority)*
Sort entries alphabetically by syllables, with the word's phonetic syllables ordered by initial syllable consonant (or consonant pair), vowel pattern, final consonant, then tone¹³.
- *Orthographic*
Sort according to the written form of each word, but regarding any prefix vowel as if following the initial consonant (like Thai).

For both methods of sorting alphabetically, if a Lao word uses non-standard spelling, the standardized (phonetic) equivalent word is used to determine the sorting order and thus where it would appear in a Lao dictionary.

¹³ This method of ordering Lao words was used in the Lao-French dictionary compiled by Reinhorn (Dictionnaire Laotien-Français par Marc REINHORN, Centre Nationale de la Recherche Scientifique, Paris 1970)

Syllable breaks

Microsoft Excel and Microsoft Word use different codes for wrapping text at the end of a line. When hyphenation is selected for Lao text in an Excel workbook, the inserted character can be a hidden break (U+200B=ZWSP), a soft hyphen (SHY) or a visible *middot* (d183). Soft hyphens can be useful when the text is going to be exported to other types of documents but within Excel they remain visible.

Romanized Lao text options

The following additional Lao romanization options can be set in user settings:

- *Choose font for romanized text.*
- *Show visible syllable breaks in the romanized text.*
- *Use IPA conventions for phonetic conversion (instead of Kerr's).*
- *Show visible initial glottal stops for phonetic conversion.*
- *Use gloss instead of romanized Lao (in certain contexts).*

See [Romanizing Lao Text](#) for more information.

General options

The following general user settings are applicable for both Word and Excel Add-Ins.

- *Show (or hide) romanization controls in ribbon menu*
- *Show (or hide) old-code conversion controls in ribbon menu*
- *Check for old-code text before processing*
If you have a document or workbook containing old-coded Lao text, check this option to avoid accidentally corrupting the old-coded Lao when using Lao text processing functions. If your documents and workbooks normally use standard, Unicode-coded Lao, leave the option unchecked. (Note that checking for old-coded Lao can take several seconds for a large document.)
- *Check database*
Click *Check database* to validate the table indexes and word status flags and correct any that might be incorrect. This is unlikely to be needed in normal use but if for any reason (such as importing an external word list) it is suspected that the displayed word list order is incorrect or the status flags do not show the actual word status, use this function to restore database integrity.
- *Compact database*
If many entries are being imported to or exported from the dictionary, it may be useful to compact the dictionary database. (This option is only available if Microsoft Access is installed.)

Converting text in documents with old (8-bit) Lao fonts

Most older Word documents with Lao text encoded for non-standard 8-bit-coded fonts (such as *Saysettha Lao*, *alice_5*, etc.) may be processed to convert the text to use a Unicode font. If a similar-looking Unicode font exists, that font may be used for the converted text.

To convert text in a Lao document, open the document, select the text to be converted, then click **To Unicode**. If no text is selected, all Lao text in the document will be converted. A [User Setting](#) allows text in headers and footers to also be converted when the entire document is converted.

A list of known Lao 8-bit fonts is included in the LaoScript10.accdb database that is installed with the app. The list may be viewed, modified or extended by clicking **Font list**. The following form will be shown:

Lao Code Conversion - Old Code Font List

Font name	Code convention	Unicode font substitute	Scale
Alice3 2000	Lao 2000	Alice3 MX	100
Alice3 95	Lao 95	Alice3 MX	100
Alice3 Lao	LSWin	Alice3 MX	100
Alice4 2000	Lao 2000	Alice4 MX	100
Alice4 95	Lao 95	Alice4 MX	100
Alice4 Lao	LSWin	Alice4 MX	100
Alice5 2000	Lao 2000	Alice5 MX	100
Alice5 95	Lao 95	Alice5 MX	100
Alice5 Lao	LSWin	Alice5 MX	100
Alice5b Lao	LSWin	Alice5 MX	100
Bubble 95	Lao 95	Saysettha OT	100
Bubble Lao	LSWin	Saysettha OT	100
Chantabouli 95	Lao 95	Saysettha OT	100
Chantabouli Lao	LSWin	Saysettha OT	100
Hollow 95	Lao 95	Saysettha OT	100
Hollow Lao	LSWin	Saysettha OT	100
Lao Light	Alice	Saysettha OT	100
LaoPlangMai23	Alice	Saysettha OT	100
LaoPlangMai27	Alice	Saysettha OT	100
Saysettha 2000	Lao 2000	Saysettha OT	100
Saysettha 95	Lao 95	Saysettha OT	100
Saysettha Lao	LSWin	Saysettha OT	100
Saysettha LS	IBM-STENO	Saysettha OT	100
SengChanh	SengChanh	Saysettha OT	70

For each listed font, the coding convention used for the font, a Unicode replacement font, and a scale factor will be specified.

Coding conventions

The following (non-standard) 8-bit conventions are currently recognized:

Index	Coding convention	Example font
1	LSWin	Saysettha Lao
2	Lao 95	Saysettha 95
3	Lao 2000	Saysettha 2000
4	IBM-STENO	Saysettha LS
5	Alice	alice_5
6	SengChanh	SengChanh
7	Sengchanh US	SengChanh US
8	Sayawath	Xayawath

If you have a document with a font that uses one of the above coding conventions, but is not listed in the table, click **Clear**, then enter the font name in the text box below the list of font names.

Change the code convention, replacement font and scale factor if necessary then click **Add** to include the font in the list of fonts for which text must be converted.

If you have a document with Lao text that used an 8-bit coded font that is not following one of the conventions currently listed, please contact me via <https://laoscript.net/support/contact.php>. It may be possible to add the coding convention to allow text using fonts with that convention to be converted.

Lao text using an uninstalled 8-bit Lao font will not be displayed correctly until it is converted to an installed Unicode font, but it is not necessary to install the old font (which may not even be available).

Replacement fonts

A standard list of known Lao Unicode fonts is included with the app, but the list of Lao Unicode fonts available for substitution will also include any other installed fonts that support Lao Unicode.

Scale factor

The scale factor property specifies the percentage by which the text-size for text in an original 8-bit font should be rescaled when converted to Unicode. For most fonts, no rescaling should be needed, so the scale factor should be left at 100 (%), but some older fonts used character sizes that were a much smaller proportion of the font's cell-size than is currently used, so need to be rescaled when converting.

The selected code convention, replacement font and scale factor may be modified for any listed font by selecting that font, correcting the properties as wanted, then clicking **Modify**. A font may also be removed from the list by selecting it then clicking **Delete**. The list may be restored to the default list by clicking **Reset**.

Conversion Issues

Some complex older documents that include fields, graphics or other non-text objects embedded in the text can be difficult to fully convert successfully to Unicode Lao. Where an issue has been detected, but code-conversion has apparently succeeded, the affected text will be highlighted in yellow. If the conversion was unsuccessful, the text (still with old codes) will be highlighted in red. In either case, the highlighted text should be compared with the original document, if possible, in case any embedded objects have been lost during the conversion process.

Worksheet and query functions

The following functions can be used to process text in referenced cells or in database queries:

```
=SplitLao(ref, [markErrors], [breakWords], [hyphenate], [wBrk], [sBrk])
=HyphenateLao(ref, [sBrk])
=StandardizeLao(ref, [useDictionary], [wBrk], [sBrk])
=RomanizeLao(ref, [romanType], [toneType], [showGlottal], [visibleHyphens],
  [useDictionary])
=ConvertLao(ref, nCode)
=SortKeyLao(ref, [sortMode], [isPhonetic])
=WordStatus(ref)
=PhoneticStatus(ref)
```

Function parameters and allowed values are:

Parameter	Allowed values
ref	Lao text string or cell reference
wBrk	0(none), 1(ZWSP),2(SHY), 3(VBRK) or specified word break character ¹⁴
sBrk	0(none), 1(ZWSP),2(SHY), 3(VBRK) or specified syllable break character
romanType	“Simple”(0), “Phonetic”(1) or “IPA”(2)
toneType	“None”(0), “Numeric”(1) or “Accented”(2)
nCode	Old-code Lao index for font used (see Coding conventions)
sortMode	“IFVT”, “IVFT” or “Ortho”

All other parameters are Boolean and can be False (0) or True (any non-zero integer).

Omitted optional parameters default to values selected on the ribbon tab or User Settings dialog.

The **WordStatus()** and **PhoneticStatus()** functions check the Lao text in the referenced cell and return values as follows:

0	No issues.
1	The text is ambiguous or phonetically ambiguous.
-1	The text has spelling errors or could not be converted correctly to standard, phonetic Lao.

These status values correspond to the flags displayed for dictionary entries (see [Lao Dictionary](#)).

More information about these functions and how they can be used can be found elsewhere in this document.

*When using any of these functions in Excel worksheet cells, it is recommended to select **Formulas – Calculation Options – Manual** to prevent unwanted recalculation of the sheet whenever changes are made, which may cause significant delays. Press **F9** to recalculate the entire workbook, or **Shift F9** to recalculate all cells on the active worksheet.*

¹⁴ ZWSP=hidden break (U+200B), SHY=soft hyphen (d173), VBRK=middot (d183=·)

Installing the LaoScript 10 Add-Ins

To install any of the LaoScript 10 Add-Ins, first follow the following steps.

1. Download the latest LaoScript10 zip archive from the downloads page on <https://laoscript.net>.
2. Open **File – Properties** on the downloaded file from the right-click menu for the entry in your downloads folder. If a Security warning is shown, check **Unblock**, then click **OK**.
3. Use **Extract all...** (from the right-click menu) to unpack the contents of the archive into the suggested folder (or any other folder that is not read-only).

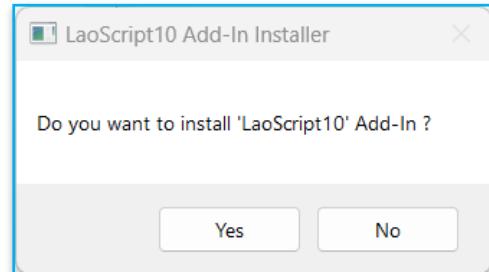
The steps above need only be followed once, then each Add-In that is wanted may be installed from the appropriate installation file in the folder with the unpacked files. It is not necessary to install all Add-Ins or install them in any particular order.

Installing Add-In for Microsoft Word, Excel or Access

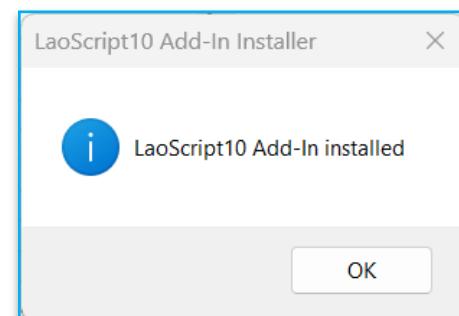
5. In the folder with the unpacked files, open **LaoScript10.install.dotm**, **LaoScript10.install.xlam** or **LaoScript10AddIn.install.accdb** to install the Add-In for Word, the Add-In for Excel or the Add-In for Access. Unless macro protection has been fully disabled (which is not recommended), a macro warning¹⁵ may be shown:



6. Click **Enable Content** to allow the installation macros to execute. You will then be prompted to install the Add-In¹⁶:



7. You should then see confirmation that the Add-In has been installed:
8. If any Add-In fails to install when following the above instructions, please see [Resolving Installation Issues](#) below for further advice.



¹⁵ The macros in the installer (template or Add-In) must be enabled in order to install the Add-In, but the displayed warning may differ from that shown above.

¹⁶ The prompt to install and notification of successful installation messages are slightly different when installing the Add-In for Access.

Re-installing or Updating an Add-In

To re-install the Add-In or update to a newer version of any of the Add-Ins, download and unpack the new version according to the instructions above, and follow the same instructions given above for installing. For the Add-Ins for Word and Excel, you will be prompted to Update the existing version, keeping your existing dictionary. To re-install or update the Add-In for Access, it must be uninstalled first.

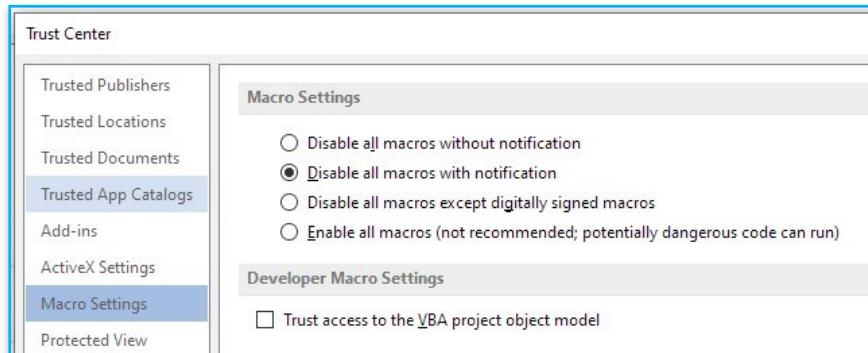
Uninstalling an Add-In

To uninstall any of the three Add-Ins, double-click the appropriate installation file **LaoScript10.install.dotm**, **LaoScript10.install.xlam** or **LaoScript10.install.accdb** again. Select 'No' if prompted to re-install (update) the Add-In, then 'Yes' to confirm uninstallation. If no other LaoScript10 AddIns remain installed, the dictionary database and help file will also be uninstalled and the application folder (within your User's AppData) removed after first copying the dictionary database to the user's current folder for backup purposes.

Resolving Installation Issues

If you do not see a security warning at step 4 or the prompt to install the Add-In at step 5, you may have not unblocked the file (see step 2 under [Installing the LaoScript 10 Add-Ins](#)).

If the file is unblocked and neither the security warning nor the installation prompt appears it is likely that macros are disabled. You should change your macro security settings in **Options - Trust Center – Trust Center Settings** to allow the installation to continue. The recommended setting is **Disable all macros with notification**:

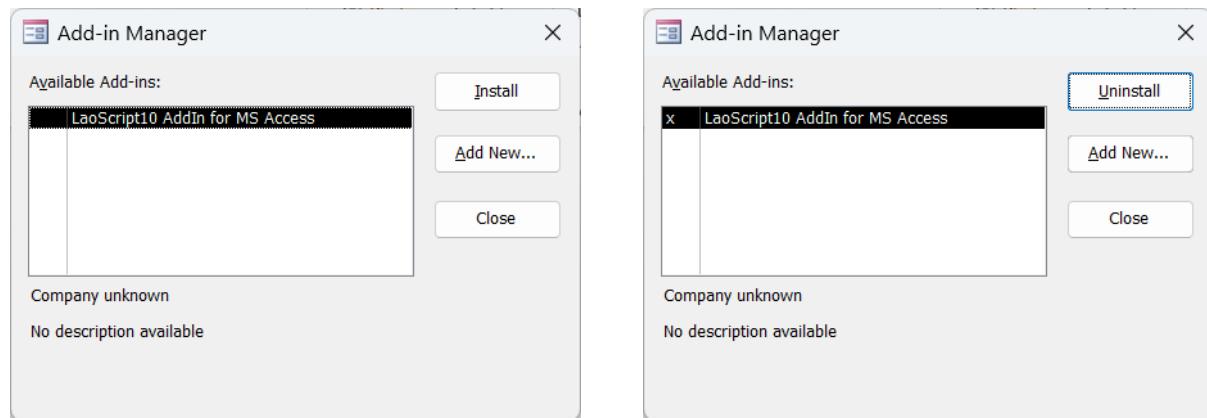


You may also need to add a **Trusted Location** in **Trust Center** to the folder with the extracted installation files.

If any of the Add-Ins installs correctly but does not seem to work, check the Trust Center Settings again. At **Add-Ins**, neither option (which may prevent some Add-Ins working) should be checked and at **Trusted Locations**, the *Disable all Trusted Locations* check-box must not be checked.

LaoScript 10 Add-In for MS Access

If the Add-In for Microsoft Access installs correctly but the *LaoScript 10* button is not listed under **Database Tools – Add-Ins**, click *Add-in Manager*. The **LaoScript10 AddIn for MS Access** should be listed as an available Add-In as shown below at the left.



Select the **LaoScript10 AddIn for MS Access** entry and click *Install*. The Add-in Manager form will then appear as shown below at the right and when the dialog is closed, the *LaoScript 10* menu button should now be listed under **Database Tools – AddIns**.

Appendix: Lao Word List Import Specifications

Any tab-separated or comma-separated UTF-8 text file with a list of Lao words in one to four columns per line may be added to the dictionary database if it is structured as follows:

With header line

The columns of text are identified by the column captions as follows:

Column	Caption
Lao word	Lao, Word, Laoword or Lao Word
Gloss	Gloss or English
Category	Category or Group
Hyphenated	Hyphenated, Alternate, Split or Altsplit

(Capitalization of column captions is not required and is ignored.)

Without header line

If the first line of the imported text includes Lao it will be assumed to be an entry, not a header line. In this case columns are assumed to be as follows:

Column Count	Columns
1	Lao word
2	Lao word, Gloss
3	Lao word, Gloss, Category
4	Lao word, Gloss, Category, Hyphenated

Further Notes

If a file is comma-separated, glosses cannot contain commas.

If a file with a header line does not include the Category (or Group) caption, or a file with no header line has less than three columns, you will be prompted to specify a category for all words to be added to.