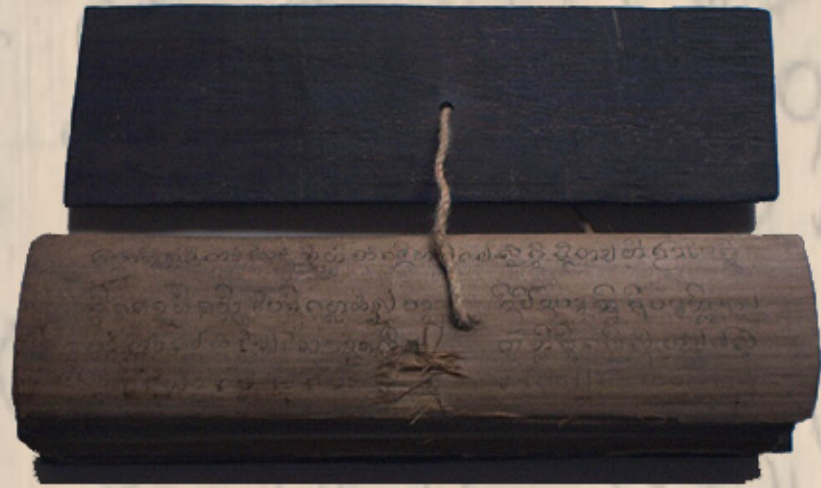# Pāli Lookup System

User Manual

Pāli Lookup System

Pāli Lookup

Pāli Lookup version 2.0
Copyright © Aukana Trust, Bradford on Avon, United Kingdom
This program is offered for free distribution.

System Requirements

Monitor: minumum 800x600 resolution
Operating System: Windows 95 or later
CPU: It runs fine on a slow Pentium. It is believed that it would
    work alright on a 486, but this hasn't been checked.

Pāli Lookup System—Installation

It's as easy as this:

1. Place the CD-Rom in your CD-Rom drive.
2. Double click on the Windows 95 (or later) 'My computer' icon. Then double click on your CD-Rom drive.
3. Double click on the file 'setup.exe'. This will run the setup program. It's only a matter of following the dialogue boxes contained in it.
4. When it's finished, there will be a 'Pali Lookup' option under your programs menu under the start menu. Click on it, and enjoy!

Using the Pāli Lookup System
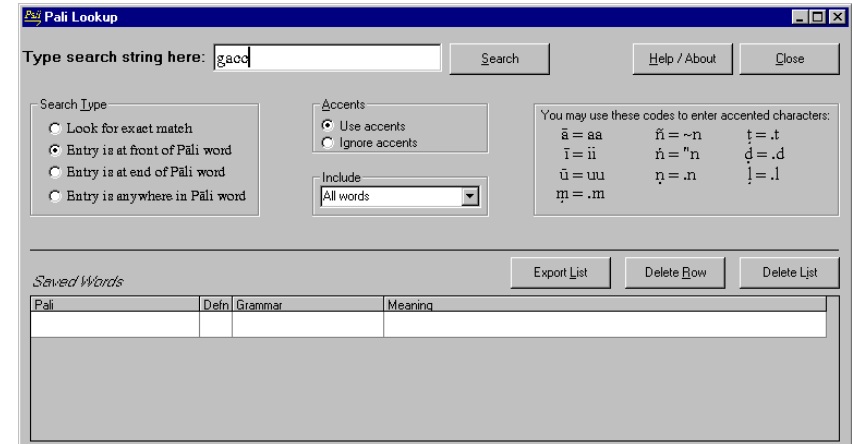
The Main Dialogue Box

When the user first enters the system, he or she is met with this dialogue box. The screen is divided into two parts. The top half of the dialogue box is the area were searches are specified and initiated. The bottom half of the dialogue box, below the black line, is where saved words can be viewed and manipulated. The Saved Words area will be dealt with later. For now we are going to look at conducting a search.

Running a Search

Using the system is as simple as this: type the word you are looking for (such as the user typing 'gacc' in the figure above) and press the Search button. In a moment, the system will show all the words that match your query. The system does, however, off a few options to make your search more effective.
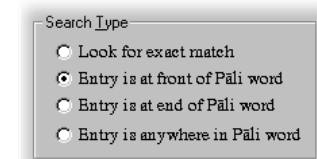
Search Types (Wildcard options)

The system offers some different search types.
• *Look for exact match:* The

system tries to find an exact match for the word you entered in the dictionary. If you entered 'gacc', as above, you would get no result because there is no such word in Pāli. If you wanted to look up a word like *gacchati* you'd have to know and type out the entire word. This is great if you know the exact word you are looking for. Know, though, that the dictionary only contains root forms of words, and the words you will encounter in texts will be inflected.

- *Entry is at front of Pāli word*: This will pick up all words that start with the string you have entered. It is equivalent to using a wildcard character at the end of the string (string*). The user who entered 'gacc' above will get words like *gacchati*, *gaccha*, *gacchi*, and so on. This option, 'Entry is at front of Pāli word', is the default of the system. This is so because most words one comes across in texts are inflected, i.e., they have an ending. Unless you know all the endings and can accurately tell what the root form would be, it is probably easier to chop off the last few characters and run a query on what remains.

Usually, the word you are looking for will be in the search-results table. If not, then perhaps you chopped off a bit too many. Then it's time to try again.

You can change the default setting in the wildcards box at any time. Whatever you choose will remain in effect until you change it again, or the session ends.

- *Entry is at end of Pali word*: This is like the previous option, except that the wildcard character is at the beginning of the string (*string). Entering 'gacc' wouldn't return anything here, because there are no Pāli words that end this way. But if you entered something like *jānāti*, you'd pick up words like *jānāti* itself, and also *anujānāti, abhijānāti, ājānāti* and so on.
- *Entry is anywhere in Pāli word*: With this option selected, the system looks up all words in the system that contain your string, whether it is at the beginning, end or middle of the word. Entering 'gacc' here would produce a list that included all the words we saw earlier with 'Entry is at front of Pali word', but it would also return words like *adhigacchi*,

*paṭigacca, saṅgacchati* and so on.
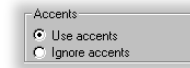
Accents options

This option was added simply because it is sometimes difficult to remember whether the word you are looking for started with a long-a or a short-a; was it a plain 't' or was it a 't' with a dot underneath. If you think it could be either, then it is easiest to click the 'Ignore accents' radio button and let the system find what it can.

- *Use accents:* This is the default and assumes that you want words that resemble the word or string you entered. If you typed in 'anna' (and you are looking only for exact matches), no words would be returned, because there is no such word in the dictionary. If you typed 'añña', you would get this one word, and only this word returned.
- *Ignore accents:* What if you were looking for añña, but weren't sure about the diacritics? Easy—just type in 'anna' press the 'Ignore accents' radio button and press

the 'Search' button. Up will pop *aṇṇa, añña,* and *aññā*.
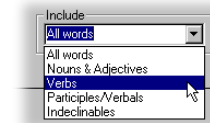
Include words options

The Include words option restricts your search to whatever grammatical group you specify. Only words that both resemble the search word you entered and belong to the grammatical group you specified will be returned in the search-results dialogue box.

- *All words:* This is the default, and when you submit your search, every word in the dictionary will be considered.
- *Nouns & Adjectives:* Press this and when you submit your search, only nouns and adjectives will be looked at. Note that nouns includes pronouns and adjectives includes numerals.
- *Verbs*: Press this and only finite verbs will be considered. This includes all tenses (present, past, optative, etc.) and excludes all participles. They're in the next group.
- *Participles/Verbals*: Press this and only participles will be considered. There are five

types of participles included in the dictionary: past part-iciples, present participles, future passive participles, gerunds (also known as absolutes), and infinitives.

- *Indeclinables*: Press this and only indeclinable words will be considered. This is a gram-matical group in Pāli that does not take inflections and includes adverbs, interjections, conjunctions and assorted other particles.

With all this information you are fully set up to conduct a search. Press the search button and let the program run. It only takes a second or two and up pops the search-results dialogue box, a dialogue box that shows all the words in the dictionary that match the specifications you made.

There is a Help/About button, but mostly what it does is direct you to this User Manual. It also gives the copyright notice and some credit to data sources used by the system.

The search-results dialogue box will be described shortly, but first we will have a look at the lower half of the main dialogue box, the saved-words area.
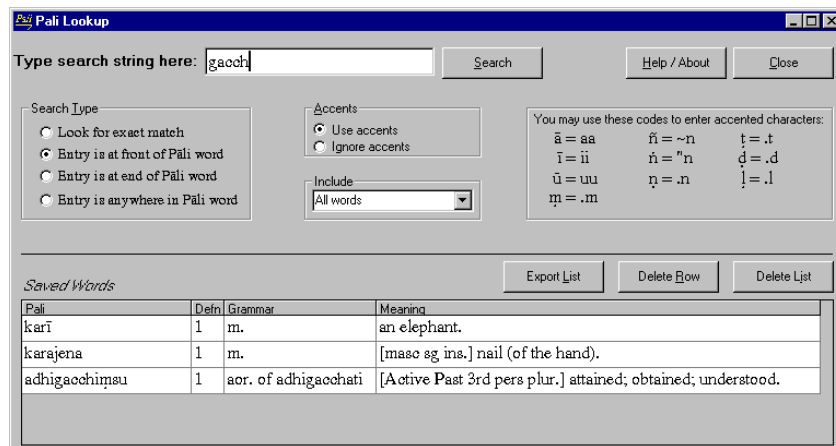
The Saved-Words Area

At the bottom of the main dialogue box is the saved-words area. Screens that succeed this one, such as the search-results dialogue box, permit the user to save words that they are looking at. Those words are shown here.

After you've saved a few words, the main dialogue box might look something like the figure above.

This saved-words list is useful for at least two reasons.

First, if you are anything like the creator of the system, you might find yourself reading a sutta. You look up a word and read it's meaning. You under-stand the sentence and move on to the next one. The word appears in that sentence as well, but by this point you've already forgotten what it means and you have to look it up again. The saved-words list helps in that you can keep track of words you've already looked up, because often a sutta will use a word over and over again.

A second benefit is provided through the Export button. You can work your way through a sutta, saving all the words you don't know and then export the list. You can print off the list using spreadsheet or word-processing software. Presto: you have a vocabulary for that particular sutta and should you want to read it again, that list will make going through the sutta a lot quicker (unless you memo-rised every last word at the first go—your system creator is not quite this clever.)
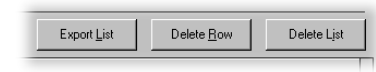
The saved-words area has three buttons, and their meanings are these:

- *Export List:* This permits you export the list so that you can work with it somewhere else. A windows 'Save as' dialogue box will pop up which will allow you to specify the file name. The data you save will be saved in comma-delimited format.
- *Delete Row:* If you click on a row to select it (such as *karī* on the figure on page 6), then press this button, the row will be eliminated from the list.
- *Delete List:* Press this and the entire list will be deleted. Note that there is no way to get it back.

One other note about the saved-words area: if the infor-mation in the Meaning fields is wider than the field width, it's permitted to widen the column. If you move the mouse cursor to the right edge of the field, the shape of the cursor will change and permit you to widen the column.

The Search-Results Dialogue Box

After you press the 'Search' button on the main dialogue box, this screen comes up with the results of your query. Depending on what you asked, you might have no words returned, one word, several words or hundreds of words. If the word you are looking for doesn't show up, it may be misspelled in the main dialogue-box or it may simply not be in the dictionary.

If the word you are looking for is in the list then great. You may only want to find the meaning—and there it is. Most of the columns on the grid are self-explanatory, except perhaps 'Defn'. When two words share the same spelling, the first one is Definition 1, the second Definition 2, etc.

The search-results screen provides you with a few buttons:

- *Save Word:* Press this and the word is saved to the saved-words list on the main dialogue box. A little box will pop up when you do this confirming that the word was saved. It will look something like this (note: words are spelled here using the Velthuis encoding scheme):
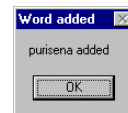
- *Inflect*: Press this and the word will be inflected. If it's anything other than an indeclinable, a further screen will pop up showing you the word's inflections. If the word is indeclinable, then a little message will pop up telling you that the word doesn't actually take any inflections, which, after all, is what an indeclinable is.
- *Close*: Press this and the dialogue box will close, returning you to the main dialogue box.

The Noun- and Participle-Declension Dialogue Box

If you pressed the 'Inflect' button on the search-results dialogue box and the word you had selected was a noun, adjective, pronoun or participle, then you will shortly see this screen with all the word's potential endings. The dialogue box should be fairly straightforward, but I will make a few notes.

Nouns, of course, will be declined in their own gender column. Pronouns, adjectives and participles will be declined in all three genders.

Some boxes have little scroll bars on their right edge:
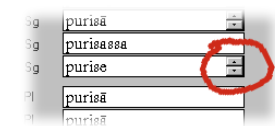
Scroll bars applied to a word

This just means that there is more than one alternative endings. In this particular case, locative singular for the a-declension has as alternatives 'e' and 'asmiṃ'. If you click on the scroll bar you can see the other alternatives.

At the top of the screen is a text box entitled 'Declension of root'. This is the form of the word in the dictionary. It is the root from

which all the declined forms are computed.

Just below the 'Declension of root:' text box is a text box labelled 'In role:'


In-role text box

The purpose of this box is to tell you what declension the word belongs to. Importantly, it will also tell you when a word is irregular. (If it doesn't say 'Irregular', it's assumed to be regular.) Sometimes this box has a scroll bar also, because there is the odd word that serves several roles. *Bhojaniya* is such a word. It acts as both an adjective meaning 'fit to be eaten' and as a neuter noun meaning 'soft food'. What shows underneath this scroll box, i.e., the declined forms, will correspond to the role indicated in the 'In-role' text box. If you select another entry in this box, the screen will quickly erase the last role and fill in the dialogue box with the new values.

There are two types of declinable nouns (including adjectives, pronouns and participles): regular and irregular. The irregular forms are simply stored in a database, fully spelled out, and brought up whenever a user requests it. The regular forms, however, are predicted, using the word's stem and applying regular endings to it. The important point is this: Pāli is a dead language and there is no way to tell, just by looking at a word, whether that form was ever actually used. This doesn't mean that the creation of the form is necessarily wrong. It is consistent with the conventions of the language and may very well have been used in speech at the time—we just have no way of telling for sure.

As an example, in the dialogue box above, *purisena,* the instrumental form of *purisa,* is selected. This word can be found in the Pāli canon. The word above, it, *purisāya,* one of the dative forms, however, cannot be found. It may show up in the commentarial works. The writer of this document is not certain here.

In any case, sometimes students of Pāli like to translate English back into Pāli. Knowing all the potential forms of words, even if some were never recorded, will be helpful for this kind of work.
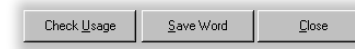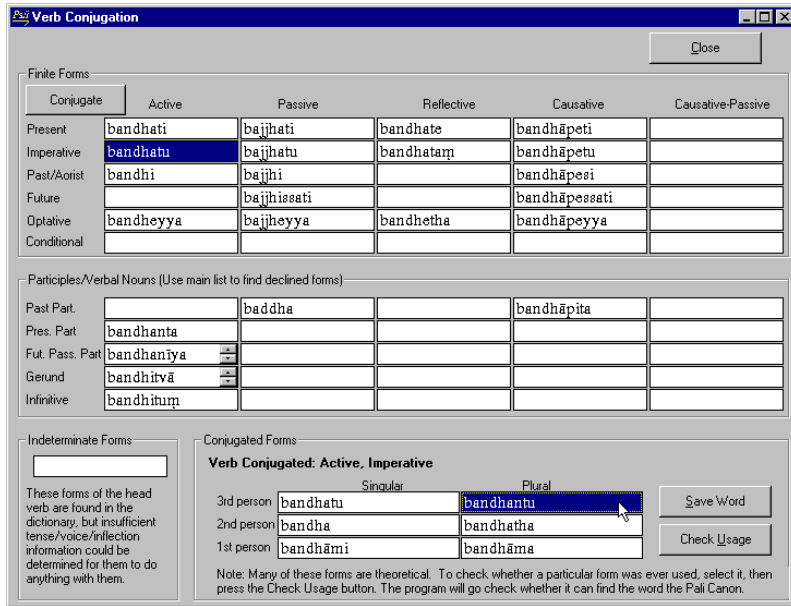

Declension dialogue box buttons

The Noun and Participle Declension Dialogue box has three buttons. Note that, except for the Close button, you must select a word from the declined-forms grid first so that the button has something to act on.

- *Check Usage:* The system offers the user the opportunity to try to determine whether the word showed up in the Pāli canon. This work is performed on the Check-Usage dialogue box and this work will be described in detail there (see below).
- *Save Word:* Pressing this button saves the word much the way the same button did on the search-results dialogue box (see page 8). There are two things to note here, though. First, you will be saving an inflected form of the word. In the diagram on page 9, *purisa* is a word in the dictionary, but the word selected, *purisena,* is not. It is an declined form of *purisa*. What will show up in the Pāli column of the saved-words list will be the inflected form, but what will show up in the Grammar and Meaning columns will be for the uninflected form. The second thing to note is that the Meaning column for the word in the saved-words list will be adjusted. It will have a segment in square brackets indicating the word's gender, number (singular or plural) and case. Knowing these things, one can mentally adjust the meaning to fit the declension details.
- *Close:* Pressing this button closes the dialogue box and returns you to the search-results dialogue box.

Verb Conjugation — Close

Finite Forms — Conjugate

	Active	Passive	Reflective	Causative	Causative-Passive
Present	bandhati	bajjhati	bandhate	bandhāpeti	
Imperative	bandhatu	bajjhatu	bandhatam	bandhāpetu	
Past/Aorist	bandhi	bajjhi		bandhāpesi	
Future		bajjhissati		bandhāpessati	
Optative	bandheyya	bajjheyya	bandhetha	bandhāpeyya	
Conditional					

Participles/Verbal Nouns (Use main list to find declined forms)

Past Part.		baddha		bandhāpita	
Pres. Part.	bandhanta				
Fut. Pass. Part	bandhanīya				
Gerund	bandhitvā				
Infinitive	bandhitum				

Indeterminate Forms

These forms of the head verb are found in the dictionary, but insufficient tense/voice/inflection information could be determined for them to do anything with them.

Conjugated Forms

Verb Conjugated: Active, Imperative

	Singular	Plural
3rd person	bandhatu	bandhantu
2nd person	bandha	bandhatha
1st person	bandhāmi	bandhāma

Save Word / Check Usage

Note: Many of these forms are theoretical. To check whether a particular form was ever used, select it, then press the Check Usage button. The program will go check whether it can find the word the Pali Canon.

The Verb-Conjugation Dialogue Box

If you pressed the 'Inflect' button on the search-results dialogue box and the word you had selected was a verb, then you will shortly see this screen with all the verb's different tenses and potential conjugated endings.

This dialogue box is a little more complex than the Noun and Participle Declension dialogue box. This is due to the relative complexity of verbs. Verbs come in different tenses and different voices. Note only that, each of these tense-voice combinations can be conjugated in three persons (third, second and first, in the traditional Pāli order) and two numbers (singular and plural). The different areas of this dialogue box were created with an eye to the best way to represent this.

The form is divided into four major areas:
• The Finite Forms frame
• The Participle/Verbal Nouns frame
• The Indeterminate Forms frame
• The Conjugated Forms frame

The **Finite Forms frame** is at the top and it is a voice/tense grid. The voices represented in the system are active, passive, middle, causative and passive-causative. It is admitted, that causative isn't really a valid grammatical voice, but, in that it can have a full set of tenses, it acts like one, and so it is easiest to represent it as it has been. The tenses represented in the system are six: present, imperative, past (aorist), future, optative and conditional. Again, optative and conditional, arguably are not really tenses—they're more like moods—but they behave like tenses and it was felt to be a fair simplification to treat them as such.

When this dialogue box first starts up, the software pulls up as many words in the dictionary as it can that relate to the word the user clicked on in the search-results form. The dictionary is quite generous with it's inclusion of tenses and so a number can be represented on the form. The software also makes an attempt to compute predictable tenses. For example, if you know the active-present tense of a verb in Pāli (and it is regular) you can predict it's active-optative tense. This is what is being done with *bandheyya* in the image above. This tense is not in the dictionary: it was calculated by the software. Again, it is quite possible that the tenses the computer calculates where never used. Very few middle forms are available, for example, and yet the computer consistently calculates them for all regular present-tense verbs. This information is provided not as an authoritative guide as to what word were used in Pāli, but as an indication of what the forms of tenses verbs would have, if the rules of the language are applied. This may be of use to those translating from English to Pāli.

All of the tenses in the finite-verb grid are in third-person singular. This is the person/number in which words in the dictionary are stored.

There is a Conjugation button in this frame. If you have a verb form selected and you press it, it will be conjugated in the Conjugated Forms frame. More will be said about this under the heading for that frame.

The **Participle/Verbal Nouns frame** is just below the Finite-forms frame. It contains a grid of participles arranged under the same set of voices. The Participles available in the dictionary and represented in the grid are five: past participles, present participles, gerunds (also known as absolutes), future passive participles, and infinitives. What-

ever participles are available in the dictionary for the verb under review are presented here.

These participles are presented solely for the user's instruction. There are no options to do anything with them. If they are declinable participles and the user wants to see their forms, then he or she must look them up individually—they can't be declined from here.

The **Indeterminate Forms frame** is at the bottom left. There are a few words in the dictionary that relate to particular verbs, but for which the creator of the system could get no validation of their existence. Rather than ignore these forms, they are placed here for the user to do with as he or she pleases. There are not very many such forms.

The **Conjugated Forms frame** is on the bottom right. This is where the full conjugation for a verb tense will show up. When you first open this dialogue box, the conjugations shown in this frame will be those of the verb you entered with. In the dialogue box shown above (page 12), if you had clicked on the aorist form of *bandhati*, i.e., *bandhi* on the search-results dialogue box, the inflections of *bandhi* would

show up in the Conjugated Forms frame. Once this dialogue box has opened, however, you have the option of conjugating any of the other tenses in the Finite Forms frame.

There's a label just over the conjugated forms that shows the verb's voice and tense. It also shows whether the verb is regular or irregular. As with nouns, if it doesn't say irregular, it's assumed to be regular. As with nouns, irregular forms are stored, fully spelled out in a table, but regular forms are computed by adding standard endings to the verb tense's stem.

There are two buttons associated with the Computed Forms frame:

• *Save Word:* This button will save the word you have selected to the saved-words list. As with declined nouns, the Meaning column of the saved-word record will be adjusted to show the word's conjugation details (voice, tense, person). There's one other nuance: computed verbs, because there is no meaning for it in the dictionary, will bear the Meaning (and Grammar) columns of a verb that is available in the dictionary. This will normally be the verb from which the

computed form was computed. This is normally the present-tense form of the same voice as the computed verb.

• *Check Usage:* I've added this because the verb forms calculated by the system, though valid formulations, may not be

recorded in the written records. This button will pull up the Check Usage dialogue box and let you know whether it can find the word you've selected in the Pāli Canon. This will be described in more detail in the next section.
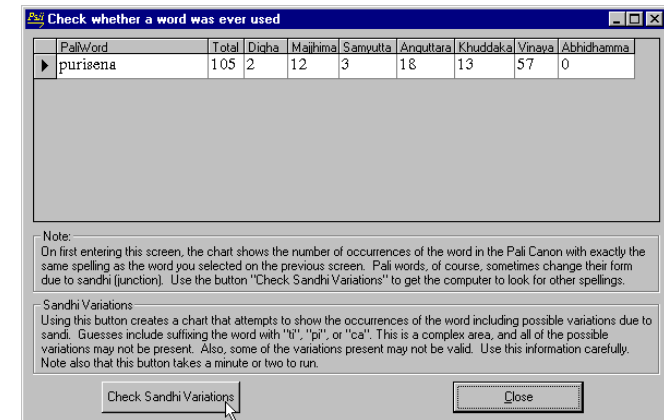
The Check Usage Dialogue Box

If you pressed the 'Check Usage' button on either the Noun/Participle Declension or the Verb Conjugation dialogue box, then you will shortly see this dialogue box which may show how many times the word you selected shows up in the Pāli Canon.

The version of the Pāli Canon that was used was that of the Sri Lanka Tipitaka Project (SLTP, see "Sources" at the end of this document for details). A program was written and run against all of the 50 or so books of the Pāli Canon itself. Commentarial works were not included, but one book considered apocryphal in some places was, viz., the Milinda-pañha. The program simply pulled out every word in each of the books and compiled a list of

which words were used where. The important point is that these are all inflected forms. *Dhamma*, for example, will show up on all it's many forms.

When this dialogue box first opens, it will show, with luck, one line telling how many times the word you selected shows up in each of the books—if it had the exact same spelling as the word you selected. In the figure above, we can see that the word *purisena* (by the man), shows up 105 times in the Canon, 2 of them in *Dīgha Nikāya*, 12 in *Majjhima Nikāya* and so on. However, spellings of words sometimes change in Pāli due to the influence of surrounding words. This is known as *sandhi*, or junction.

Sometimes no records will show up. This means either that the form of the word you picked was never used in the Canon, or it only shows up in forms changed by *sandhi*.

The software does provide a button 'Check Sandhi Variations'. If you press this button, the software will *attempt* to find as many possible variations to the spelling of the word as it can. It does this by suffixing the word with 'ca', 'ti', 'pi'; prefixing the word with anything; and lengthening the final vowel (or changing a 'ṃ' character to n, m or ñ).

As is written on the dialogue box itself, however: 'This is a complex area, and all of the possible variations may not be present. Also, some of the variations present may not be valid. Use this information carefully.'

The final figure below, shows what comes up when with press this button with the word *purisena*.

Sources

The dictionary, the heart of the system, comes from:

1. Pali-English Dictionary Version 1.0, created by a group of foreign monks in Sri Lanka. It is an electronic, public-domain edition based primarily on A.P. Buddhadatta Mahathera's Concise Pali-English and English-Pali Dictionary, expanded with a series of corrections and additions. The Dictionary is made available as Public Domain on www.metta.lk

   These people were involved in the project: Phra Acan Sau of Malaysia, Ven. Rahula of Nepal, Ven. Dhammapala of Malaysia, Ven. Dhamma Jyoti of India, Ven. Mon Dhammadinna of Myanmar, Ven. Sao Suvan of Myanmar, Phra Maha Anucha of Thailand, Phra Maha Phichit of Thailand, Phra En Piang of Malaysia, Ven. Kolita of Nepal, Ven. Saddhatissa of Nepal, Ven. Phuntsok of India, Ven. Sheelaratna of India, Ven. Sao Sutananda of Myanmar, Ven. Sao Sukhaminda of Myanmar, Ven. Sao Aggavamsa of Myanmar, Ven. Sao K.H. Nyaninda of Myanmar, Ven. Sao Pannavamsa of Myanmar, Ven. Ashin Manijoti of Myanmar, Ven. Sao Pannananda of Myanmar, Ven. Sao Indobhasa of Myanmar, Ven. Indasilo of Indonesia and Indika Rohan Peiris.

The Pali-canon word list was derived from:

2. Sri Lanka Tipitaka Project (SLTP). This input of the entire Pali Canon was completed at the "Siri Vajirañāna Dharmāyatanaya," Bhikkhu Training Center, Maharagama, Sri Lanka in 1994. The project ran under the auspices of Venerable Madihe Paññāsīha Mahā Nāyaka Thera, Head of the Amarapura branch of the Buddhist Sangha in Sri Lanka.

   It is an electronic edition of the Pali Canon. These files are made available under the GNU GPL license. A copy of this license may be found in the program directory (AGnuGplForSltp.txt).

These texts were used to develop the inflection tables:

3. Rhys Davids, T.W. and Stede, William, 1921-25, *Pali-English Dictionary*, Pali Text Society, London.
4. Cone, Margaret, 2001, *A Dictionary of Pāli*, Part 1, Pali Text Society, Oxford.
5. Warder, A.K., 1963, *Introduction to Pali*, Pali Text Society, London.
6. Duroiselle, Charles, 1997, *A Practical Grammar of the Pāli Language*, Third Edition, U. Dhamminda, Mawlamyine, Myanmar. [Avalailable as a PDF e-book from sites like www.buddhanet.net]