



The Ambiguity Checker Software

The Problem

It is difficult to write requirements that are clear, concise, complete and unambiguous. There are many ways and approaches to writing requirements. This can lead to misunderstandings in what is written. Misunderstandings can lead to costly rework in software development. Requirements authors need help creating better requirements to improve the quality of software development.

The Solution

The Ambiguity Checker is a software tool that identifies potential ambiguities in requirements. Once the ambiguities have been identified, the author can eliminate them and provide the readers with a better quality set of requirements to review for content (correctness and completeness).

The Ambiguity Checker supports the Ambiguity Review Checklist created by Richard Bender of BenderRBT Inc. www.benderrbt.com.

Richard Bender's original list comprised of 34 words and phrases. Since then we have augmented this list to significantly increase the words and phrases that can be considered ambiguous. We added searching of all verb tenses, and many synonyms and other words that can be ambiguous.

The problem is to identify and eliminate all of the ambiguities in a requirements document. Having to remember 34 words and phrases and seeing if one can find all of them in a large document is an arduous task. Once the list of words and phrases increases to more than 300, it becomes an impossible task.

It is obvious that requirements writers need to understand the concept of ambiguity, but they do not want to manually attempt to identify every ambiguous word and phrase throughout a large document. Because of this, we developed a computer program called the Ambiguity Checker that works with Word documents.

The Ambiguity Checker will analyse and identify all potential ambiguous words and phrases in the Word document. This helps in analyzing the level of ambiguity in the document and deciding if corrective action is needed.

The software is very simple to run. Select the file to analyze and press the Analyse Button.

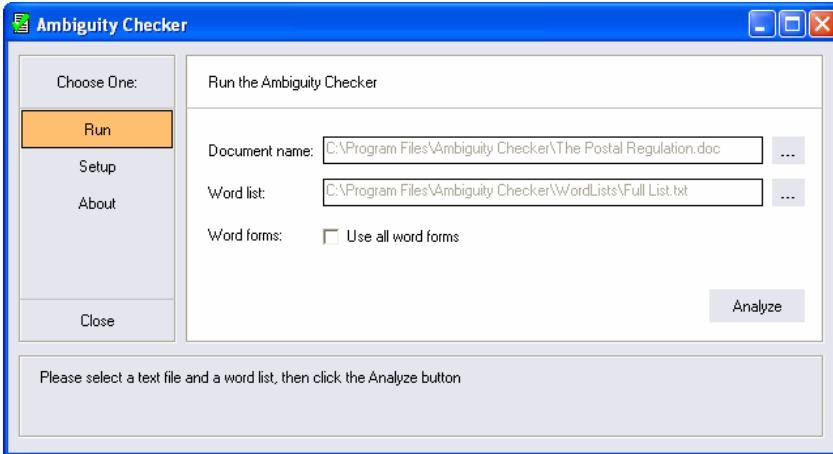


Figure 1: The Ambiguity Checker Main Menu

The Ambiguity Checker will make a copy of your file and highlight all potential ambiguous words and phrases.

The Postal Regulation

The following postal regulation determines postage surcharges. This regulation applies only to parcels, not other types of postal items, and only to parcels sent to South America. For parcels which people mail to South America between December 1 and December 24 of each year, the system will apply these surcharges in addition to the standard postage:

Country & Weight Surcharge

Argentina	All weights	\$11
Brazil	Weight > 33 pounds	\$21
Brazil	< 33 pounds	\$17

Comment: not "Not" can be ambiguous when it is not known what is being negated. For example, "If it is NOT a valid customer or Status code = 2 then print report 1." This could be interpreted as either:
 ->If it is NOT [a valid customer or Status code = 2] then print report 1.
 OR->If it is [NOT a valid customer] or Status code = 2 then print report 1.
 Please add brackets to clarify what is being negated.

Comment: other "Other" refers to a subset of a complete list. What are the remaining combinations taken with the "other" ones that make up the complete list?

Comment: the system What system are we talking about? Please specify the system name.

Comment: standard "Standard" refers to a subset of a complete list. What are the other combinations taken with the "standard" ones that make up the complete list?

Comment: all What does "all" refer to? This assumes that the number of combinations in "all" is known by the reader. Please provide the complete list of values, or reference the complete list.

Figure 2: Output from the Ambiguity Checker with descriptive comments

A second option is to analyze the document without creating comments regarding each ambiguity (see Figure 3).

The Postal Regulation (Draft)

The following postal regulation determines postage surcharges. This regulation applies only to parcels, **not other** types of postal items, and only to parcels sent to South America. For parcels which people mail to South America between December 1 and December 24 of each year, **the system** will apply these surcharges in addition to the **standard** postage:

Country & Weight Surcharge

Argentina	All weights	\$11
Brazil	Weight > 33 pounds	\$21
Brazil	< 33 pounds	\$17

Figure 3: Output from the Ambiguity Checker without descriptions

The Ambiguity Checker also provides a summary of the type of ambiguities that it finds with the count of each ambiguous word and phase in the document (see Figure 4).

Possible Ambiguity	Type of Ambiguity	Count
not	Negation	1
the system	Ambiguous Variable	1
all	Ambiguous Adjective	1
other	Ambiguous Adjective	1
standard	Ambiguous Adjective	1

Summary Results	Count
Number of words	79
Number of sentences	8
Number of possible ambiguities	5
Ambiguities per sentence	0.63

Figure 4: Ambiguity Review Summary

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