

**W o r d I n d e x**

**U S E R ' S M A N U A L**

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Modulare Intelligente Data Administrations Systemer

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## 1. I N T R O D U C T I O N

This document describes WordIndex. WordIndex is made to help users of WordStar (1) maintaining large documents.

When writing reports, manuals, and other documents, WordStar does not support automatic numbering of sections, table of contents creation, subject index maintenance, etc. To help you in the creation of large documents WordIndex offers a score of easy-to-use facilities for numbering sections, generating a tabel of contents and more.

The reader is assumed to have experience in using WordStar and CP/M (2).

This manual was produced using WordIndex.

### 1.1. WordIndex features

- \*\* Automatic numbering of chapters, sections, and subsections, appendices, figures and tables.
- \*\* Automatic generation of a table of contents, a list of figures and a list of tables.
- \*\* Automatic generation of a sorted index, with keywords on two levels, and master and sub keywords.
- \*\* Automatic renumbering of section numbers and page references, whenever the document has been changed.
- \*\* User selectable print control for all headings: understrike, boldface, double strike, elongated (matrix printers), and s p a c i n g, in any combination.
- \*\* Adaptable to any language.

- - - - -

(1) WordStar is a registered trademark of MicroPro International Corporation, San Rafael, California, U.S.A.

(2) CP/M (Control Program/Monitor) is a registered trademark of Digital Research, Pacific Grove, California, U.S.A.

1.2. Overview

Chapter 2 gives an introduction to the use of WordIndex, together with a brief description of WordIndex features.

Chapter 3 provides an elaborate coverage of all WordIndex directives and their use.

Descriptions are divided into two parts, the most often used, and the less often used. Furthermore, every description is divided into a short and a more detailed description.

Chapter 4 tells you how to make WordIndex run, it also contains a summary of files on your diskette together with an overview of WordIndex error messages.

Chapter 5 gives technical specifications for WordIndex.

Appendix A is a quick reference card, containing all Word-Index directives on a single sheet, to be used at the terminal.

## 2. INTRODUCTION TO WORDINDEX

This chapter gives an introduction to the use of WordIndex, it is explained how to make out documents using WordStar, so that WordIndex can process them later.

### 2.1. How to use WordIndex

WordIndex is a CP/M command, to be used after editing a document, i.e. before the document is printed out by WordStar. Prior to using WordIndex, directives indicating new chapter, keywords and so on, must have been placed in the document.

Directives to Wordindex are placed directly in the text, as WordStar comments, but followed by a masterspace ("@") and the WordIndex directive. (Any line starting with two periods (..) is treated as a comment by WordStar).

#### Example

The directive for "new chapter" is the letter "A". The title is written on the line immediately following the directive. Suppose you want to start a new chapter with the title "Introduction to WordIndex", this is what to do:

```

=====
..@A                               (directive for new chapter)
Introduction to WordIndex           (title of chapter)

In this chapter.....              (start of text)
=====

```

Notice the directive appears as a comment line to WordStar.

### 2.2. How does WordIndex work?

WordIndex will first prompt for the name of the file containing a document with WordIndex directives. WordIndex will read the file and execute all imbedded WordIndex directives. As a result, two files are produced by WordIndex.

One contains a modified copy of the original document: Chapters, sections etc. are now numbered, and, if specified, a subject index have been created, and placed at the end of the document.

The other file contains a table of contents, automatically generated using the specified chapter-, section-, and subsection titles.

Example

Suppose the following lines were placed in a file called TEST.

```
=====
..@A
Test of WordIndex

This is a small test of WordIndex.
Let us see what happens.
=====
```

WordIndex is called and produces two files.

One is called TEST.WI and will produce the following, when printed out by WordStar:

```
=====
1. Test of WordIndex

This is a small test of WordIndex.
Let us see what happens.
=====
```

Please notice that the chapter has been numbered and the title are automatically printed in boldface.

The other file is named TEST.TOC and produces the following, when printed out by WordStar:

```
=====
T A B L E O F C O N T E N T S
-----
```

```
=====
1. Test of WordIndex..... 1
=====
```

Note that the title of the chapter was inserted automatically into the table of contents, with the correct page reference.

The foregoing examples are to be regarded as a first introduction to WordIndex. The following chapters contain an elaborate description of all WordIndex directives.

The next figure illustrates the path which a document has to follow, using WordIndex. The name of the document is taken to be DOC.



### 3. WORDINDEX DIRECTIVES

This chapter provides an elaborate coverage of all WordIndex directives and their use. Descriptions are divided into two parts, the most often used, and the less often used. Furthermore, is every description divided into a short and a more detailed description.

#### 3.1. Rules for writing directives

The rules for writing directives given in this section, are good for all WordIndex directives. Any deviance shall be fully explained in connection with the relevant directive.

Directives to WordIndex are written directly in the text as WordStar comment lines. The first two characters, following the two periods, always being a masterspace followed by a letter. The letter is interpreted as a WordIndex directive. For some directives, the text following the directive, has a special meaning.

In WordStar a comment line, is any line containing a period in the two first columns. Alternatively, one period followed by the letters "IG", but this form of comment line will not work with WordIndex.

The letter indicating the chosen directive can be in upper or lower case, however there must be no spaces or other characters between the 'directive letter' and the 'masterspace'.

Directives, which do not comply with the above mentioned specifications, are ignored by WordIndex. Therefore it is still possible to write comments, as long as they are not of the form "..@".

#### 3.2. Chapter headings

To start a new chapter, use the directive A. Chapters represent the highest level of division of documents (lower levels are sections and subsections), chapters are numbered in succession starting with chapter one.

The next line in the text is used as a chapter heading, the computed chapter number is automatically inserted in front of the heading. The heading is included in the table of contents.

#### Example

The following lines will generate a new chapter number with the heading: "Test of WordIndex".

```

=====
..@a
Test of WordIndex
=====

```

### 3.2.1. Layout of chapter headings

The heading can be indented, centered or placed in any way you choose. When centering, allow space for the number inserted by WordIndex.

The heading will be placed in the table of contents (any indentation is ignored) and followed by the present page number. Extremely long headings will, depending on the specified line-length for headings (see L-directive , be truncated in the table of contents.

New page before a chapter or blank lines after the heading is not inserted in the document automatically. WordIndex **never** inserts **any** new lines into the document. This principle has the effect that pagebreaks occurs exactly at the same line, as they did in the original document.

### 3.2.2. Printing of chapter headings

Headings should not contain any WordStar print controls, as WordIndex automatically supply these.

As default WordIndex inserts the print control ^B before and after the chapter number and heading. If you want another print control to be used, it can be specified on the same line as the directive for new chapter. After the directive A you can type one or more letters, called print directives. These print directives specifies how all succeeding chapter headings will be printed. The various print directives are summarised in table 3-1.

#### Example

In the future we want all chapter headings to be printed with double spacing and double strike. Table 3-1 tells us to use the print control B (or b) for double strike, and S for double space. Therefore we type:

```
=====
..@a b s
Test of WordIndex
=====
```

Suppose this is chapter no. 14 in the document, the heading will then look like this:

```
=====
14. T e s t   o f   W o r d I n d e x
=====
```

Table of WordIndex print directives

The following print directives can be given on the same line as the directives for new chapter, section or subsection. The print directives determine how the heading will be printed. Any combination of print directives can be used. Both upper and lower case are recognized by WordIndex. In the table the corresponding WordStar directive, if any, is showed.

Directive	Corresponding Wordstar print control	Description
B	^B	Boldface
D	^D	Double strike
E	^A and ^N	Elongated print. The print control ^A (alternate pitch) together with ^N (return to normal) should be defined in WordStar. This print control only makes sense on a matrix printer.
N		No print controls are inserted. Can not be mixed with other print directives.
S		Double space. After each character in the heading, a space is inserted.
U	^S	Understrike.

Table 3-1: Print directives

### 3.3. Section headings

To start a new section use the directive **B**. Sections are numbered in succession with an index to the chapter number (1.1, 1.2, 2.1, ...).

The next line of text is used as section heading with the computed section number placed in front of the heading. The heading is automatically included in the table of contents.

The rules for typing section headings are the same as the rules for chapters (see section 3.2.1).

The rules for print layout of section headings are the same as the rules for chapters (see section 3.2.2), however the default print directive for section headings is double strike.

### 3.4. Subsection headings

To start a new subsection use the directive C. Subsections are numbered in succession with an index to the chapter and section number (1.1.1, 1.1.2, 1.2.1, ...).

The next line of text is used as subsection heading with the computed subsection number placed in front of the heading. The heading is automatically included in the table of contents, and, unless the S-directive is in effect (see S-directive), also in the subject index,

The rules for typing subsection headings are the same as the rules for chapters (see section 3.2.1).

The rules for print layout for subsection headings are the same as the rules for chapters (see section 3.2.2), however the default print directive for subsection headings is double strike.

### 3.5. Appendices

The directive X starts numbering of chapters in alphabetical order, starting with the letter A. The directive does not affect the numbering of sections and subsections, they are still numerically numbered (A.1.1, A.1.2, A.2.1, B.1.1, ...). The X directive is intended for the numbering of appendices. The table of contents will contain a heading stating that the next chapters are appendices. It is not possible to resume the numeric numbering of chapters when an "X" directive has been given.

### 3.6. Keyword pick-up for subject index

To make WordIndex pick-up a keyword to be placed in the subject index use the directive I. E.g:

```
..@i Increase in population 1960-69
```

The subject index will be placed immediately after the last line of text in the document. The keywords will be placed in sections depending on the first letter. WordIndex does not insert any page breaks or blank lines before the subject index, you must do this yourself. A normal termination of a document could look like this:

```
=====
.pa
..@A
SUBJECT INDEX
=====
```

After the I-directive two keywords can be given, a primary keyword and a secondary keyword, e.g.

```
..@i Increase in population 1960-69, Denmark
```

Any secondary keyword will be placed under the corresponding primary keyword in the subject index (See the index of this document).

### 3.6.1. Rules for writing keywords

To increase readability one or more blanks can be inserted between the directive (I) and the first character in the keyword. you may also use any number of blanks after the comma separating primary and secondary keywords. This means that WordIndex will treat the following two lines as identically.

```
..@i Increase in population 1960-69, Denmark
..@iIncrease in population 1960-69,Denmark
```

Keywords should not exceed a length of **40 characters**, disregarding any leading blanks. If this limit is exceeded the keyword will be truncated and a warning sent to the console. Note that trailing blanks are considered as part of the headword. You may therefore get above mentioned warning, even if the keyword does not appear to be too long (keep this in mind).

Should the same keyword appear more than once on the same page, then the page number will only appear once in the subject index.

### 3.6.2. Master keywords

Use the directive **M** instead of **I** to make a keyword a master keyword. Master keywords can be used to indicate an extensive treatment of a subject. The page number will be printed in bold-face in the subject index. Otherwise the rules for **I** applies to **M**.

Should the same keyword appear both as a normal keyword and as a master keyword on the same page, the normal keyword will be ignored.

### 3.6.3. Subsection headings as keywords

Subsection headings can be picked-up automatically and placed in the subject index. When this feature is in operation the rules for writing keywords applies to subsection headings. However, no warning will be given when the text exceeds 40 characters.

Use the directive **S** to control the automatic pick-up of subsection headings in the subject index:

..**S-**

no subsection headings will be picked up.

..**S+**

resume picking-up of subsection headings.

The defaults pick-up directive is: **..**

### 3.7. Figures and tables

Use the directives **F** and **T** to denote the title of figures and tables. Figures and tables are numbered in succession within each chapter. (1-1, 1-2, 2-1, ...). Figures and tables each have their own number series, thus a figure and a table can have the same number e.g. table 4-1 and figure 4-1. The numbering of figures and tables is independent of the numbering of sections and subsections.

WordIndex generates a separate list of figures and a list of tables. These are placed after the table of contents.

The line following the **F** and **T** directive is used as title. The title is automatically preceded by either "Figure x-x" or "Table x-x" where "x-x" is the number of the chapter followed by the figure or table number. The writing of figure or table headings follow the same rules as the writing of chapter headings (see subsection 3.2.1).

Figure and table titles will always be printed in boldface.

Example

The following lines define a figure with the title "Increase in population 1960-69":

```

=====
%
1.0 -I
    -I
0.5 -I
    -I
0.0 -I
    -I
    1960 1961 1962 1963 1964 1965 1966 1967 1968 1969
..@f
    Increase in population 1960-69
=====

```

If this is the second figure in appendix B, WordIndex will produce:

```

=====
%
1.0 -I
    -I
0.5 -I
    -I
0.0 -I
    -I
    1960 1961 1962 1963 1964 1965 1966 1967 1968 1969
Fig. B-2: Increase in population 1960-69
=====

```

3.8. Miscellaneous directives

3.8.1. Line length in Table of contents

The default line length for lines in the files containing the table of contents and the lists of figures and tables, is 65 characters. To override this default value use the directive L followed by the required line length in characters.

Example

The line length should be 110 characters. Type the following line before any A, B, C, F or T directive:

```

=====
..@L 110
=====

```

### 3.8.2. Inserting lines in the table of contents file.

Use the directive **O** to insert a line of text in the file containing the table of contents, and the lists of figures and tables. The line is inserted after the latest line generated by an A, B or C directive.

#### Example

We do not want a paginated table of contents. Therefore the directive ".op" (WordStar directive, omit pagenumbers) is copied to the file:

```
=====  
..@O.op  
=====
```

### 3.8.3. Page eject to next even/odd pagenumber

Depending on the current pagenumber the extended WordStar directives ".PA E" and ".PA O" will add a ".PA directive" to the the output file to force page eject to the next Even or Odd page number.

This feature can be used to force all chapters to start on a right page. All you have to do, is to place the ".PA O" directive in front of all chapter directives, supposing your document starts at page one.

## 4. CALLING WORDINDEX FROM CP/M

This chapter explains how to start WordIndex from CP/M. All runtime messages are explained. The last section contains a summary of all files on the distributed diskette.

### 4.1. Calling WordIndex

WordIndex is a CP/M command placed in the file WI.COM. In order to use WI.COM the file WIMSGS.OVR must be present on the logged drive or on drive "A". WordIndex is activated by typing WI and pressing the RETURN key on your terminal. After a few seconds WordIndex responds:

```
=====
WordIndex 3.0.   Serial # xxxxxx - Copyright 1981 by MIDAS Aps
```

```
Enter WordStar Text file name:
```

```
=====
```

Now type the name of the document you want WordIndex to work on. The filename is entered in the usual manner e.g. "B:PRG7.DOC" or "pdok", both upper and lower case characters are recognized. If the file does not exist, you will get the message:

```
File not found - Hit ESCAPE Key
```

Now hit any key and WordIndex will ask for a new filename.

If the file is found, WordIndex prompts:

```
Output drive (SPACE for logged drive):
```

Now tell WordIndex on which drive you want the resulting files placed. You must answer with a letter (A, B, ....). If you want the new files placed on the logged drive, press the spacebar. When this question has been answered WordIndex will respond with the names of the new files.

### Example

WordIndex was called from drive A: The WordStar file with the document is named B:DCP.DOC, by pressing the spacebar we make WordIndex place the resulting files on drive A:. Now WordIndex will print:

```
=====
Output text and subject index file name: DCP.WI
Output Table Of Contents file name:      DCP.TOC
=====
```

Now WordIndex starts processing the document, and the following line appears:

```

=====
Section  Page
0. 0. 0    0
=====

```

At runtime the section number and pagenumber will continuously show which part of the document WordIndex is processing. This information is useful in connection with error messages, as it shows in which part of the document, the error occurred.

If you, for any reason, want WordIndex to stop, you merely have to hit any key. WordIndex replies:

```
*** INTERRUPTED *** Press CONTROL-C to terminate
```

Now hit ^C ("CONTROL C") to abort, any other key to continue.

When WordIndex has terminated, the following message appears:

```

=====
Keywords (Read/Skipped/Written): aaa/bbb/ccc

WordIndex - Normal Termination - Unused words in core: xxxxx
=====

```

aaa means number of keywords (I and M directives) read (if warning for internal storage limit occurs, aaa means number of keywords read until this warning occurs), bbb means number of keywords skipped due to insufficient internal storage, ccc means number of different keywords written in the subject index. xxxxx is the number of unused words (1 word = 2 bytes = 16 bit) in RAM. This number informs you of the amount of space left for more keywords, table references etc (see chapter 5 for more information).

#### 4.2. Runtime messages

This section describes the various runtime messages WordIndex can produce.

The following warnings are possible:

1: WARNING: Index entry truncated - Press ESCAPE Key

A keyword exceeds 40 characters and will be truncated. Hit ESCAPE to continue.

**Remedy:** make up another word.

2: WARNING: Internal storage limits exceeded - Press ESCAPE Key

No room for more keywords, list of tables, or list of figures. Hit "ESCAPE" to continue. Nothing is lost, and automatic numbering of chapters etc. is resumed, the table of contents will also be complete.

**Remedy:** Reduce the number of keywords, figures or tables.

#### 4.3. Files on the distribution disk

This section contains an overview over the files on the distribution disk.

**IMPORTANT!** Never run a program from this disk, make a copy first and keep the original in your safe.

The disk contains the following files:

File	Description
WI.COM	WordIndex CP/M-command.
WIMSGS.OVR	WordStar text file containing messages, headings etc. used by the WordIndex main program, WI.COM.
WI.DOC	WordStar text file containing this document as it was before it was treated with WordIndex. Use this file as an example of WordIndex usage.
WI.WI	WordStar text file containing this document, but without the table of contents and the lists of figures and tables. WI.WI was created with WordIndex using the file WI.DOC.
WI.TOC	Table of contents, and lists of figures and tables for this document.

**Table 4-1: Files on the distribution disk**

#### 4.4. How to change WI messages

The file WIMSGS.OVR must be present when calling WordIndex. This file contains all messages, headings, etc. produced by WordIndex at runtime. By changeing the file WIMSGS.OVR, using WordStar, it is possible to adapt WordIndex to any language, or just to make up fun messages.

#### Example

Suppose you want the text "Fig. ", which automatically is inserted in front of all figure titles, to "Figure ", just find the line containing the text "Fig. " in the file WIMSGS.OVR, and edit it using WordStar in the non-document mode.

Caution: any leading and trailing blanks are significant in the file WIMSGS.OVR.

5. P E R F O R M A N C E

This chapter gives all relevant information regarding the performance of WordIndex i.e. RAM usage, restrictions etc.

5.1. Program code/speed

WordIndex is distributed on a standard 8" CP/M disk (IBM 3740 single density soft sectored) in 8080 or Z80 Code. WordIndex should run on any computer using CP/M and WordStar.

On a 4 Mhz 8080 computer with 8" drives, WordIndex processes, depending on the type of document, about 12-20 pages per minute.

5.2. Capacity/RAM usage

As table titles, figure titles and keywords are kept in RAM, the amount of RAM places a limit on the number of entries of these types. With 64K of RAM you can have about 700-800 different keywords and appx. 25 figures and/or tables.

With fewer keywords you can have more figures and/or tables and reverse.

RAM usage in bytes	Feature
50	First pick-up of a keyword.
4	New reference to already existing keyword.
78	Figure and table headings.

Table 5-1: Ram usage for headings etc.



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