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LEX2WS2 and LEX2WS4

Programs to translate Lexitron and ASCII files
to WordStar files

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Introduction

These programs are written to allow users to import ASCII files to PC-based word processors. Although many word processors can read ASCII files, they may not format them correctly because straight ASCII files contain characters, such as hard carriage returns, that prevent full use of the word processor. WordStar version 4 and WordStar 2000 release 2 recognize a hard carriage return to be the end of a paragraph for formatting; therefore each line is formatted as a separate paragraph. The hard carriage returns and unwanted spaces can be deleted one at a time or with locate-and-replace (or find-and-replace). For lengthy files, this is tedious and time consuming. The programs in this report were written to reduce time when using either version of WordStar to edit existing ASCII files.

There are two translation programs: LEX2WS4 converts ASCII files to files that can be formatted directly by WordStar version 4 and LEX2WS2 converts ASCII files to files that can be formatted by WordStar 2000 release 2 by block inserting the file. The programs were written to handle conversion of files created by a Lexitron dedicated word processor, but will correctly convert any single-spaced ASCII file with a carriage return (hex 0D) and line feed (hex 0A) at the end of each line.

Files communicated from the Lexitron word processor will have a grave accent (`) in place of the word processor's degree symbol. The programs will replace the grave accent with WordStar's superscript small 'o'. Underscore characters are communicated from the word processor and each underscore character precedes the letter it underscored in the original file. The programs remove the underscore characters and insert WordStar's underscore on/off-toggle characters unless there is a series of three or more underscores. A series of underscores is recognized as a line and is not changed.

The programs were written in Fortran to run on an IBM PC or compatible computer with PC- or MS-DOS version 2.0 or later. The programs on the disk are compiled. They expect each paragraph to be single-spaced and they expect a blank line between paragraphs. The programs recognize the end of a paragraph by detecting hex '0D 0A 0D 0A' (decimal '13 10 13 10'). For this reason, double-spaced text will not be handled correctly. The 5 1/4 inch diskette contains source code and executable programs for LEX2WS2 and LEX2WS4 and two documentation files. The README file is a brief user's guide. PROGRAM.DOC is an ASCII file copy of this documentation.

User's Guide

The user will be asked to name an input file and an output file. Up to 32 characters may be entered and may include a drive designation, one or more subdirectories, and a valid DOS file name. The LEX2WS4 program converts ASCII files to WordStar version 4. To run it, type: LEX2WS4. The LEX2WS2 program converts ASCII files to files that can be used with WordStar 2000 release 2. To run it, type: LEX2WS2.

One intermediate file (CONV.TMP) is created and deleted if the program runs to normal termination. The intermediate file is written to the default drive (the drive from which the program is called). If only one disk drive is used, it must have space for three copies of the original file (original, temporary, and final). If sufficient space is not available on the disk to write the intermediate file and final output file, the program will terminate with a run-time error and the message: "no space left on device", will appear on the screen. Erase CONV.TMP if it exists on the disk. Also erase any unnecessary files or copy the data file to a new disk and start the program again.

The program could be run on a two-floppy drive system with the temporary file being written to the program disk if the file to be translated is not too large (<181,248 bytes) for two copies of the original file (original and final) to exist on one disk. Put the program disk in drive A and the disk containing the data file in drive B. Make drive A the current default drive (if it isn't already) by typing A: (and a carriage return). Start the program by typing: LEX2WS4 (for the WordStar ver. 4 translation) or LEX2WS2 (for the WordStar 2000 translation). When the program prompts for the input file, type: B:FILENAME (drive B designator and the original file name). When the program prompts for the output file, type: B:NEWFILE (drive B designator and a unique name for the new file).

If a hard disk is available, the files could be copied from the floppy to the hard disk. First create a subdirectory by using the Make Directory command, type: MD NEWDIR (or choose any unique name). To change directory to this new subdirectory, type: CD NEWDIR. Insert the floppy in drive A. Type: copy A:*. * C: . Then run the program using drive C as the default drive. A hard disk and two floppy disks could be used and a file as large as a disk could be translated. For example, use drive A for the program disk, drive B for the original file, and let the hard disk (C) be the default drive. The new file and the temporary file can be written to drive C. To start the program type: A:LEX2WS4 (for the WordStar ver. 4 translation) or A:LEX2WS2 (for the WordStar 2000 translation). When the program prompts for the input file, type: B:FILENAME. When the program prompts for the output file, type: NEWFILE (a new file name without a drive designator).

At the end of processing, some messages are written to the screen. If underscores were converted, the message "underscores converted" will be written. Otherwise, the message "no underscore located in file" will be written. If the program finds degree symbols to convert, the message "degree converted" will be written. Otherwise, the message "no degree symbol located" will be written. The translated file will have no indentation and no centered text. The user can control these features with WordStar.

To use a converted file in WordStar 2000, start WordStar 2000 and name a new file to edit (and choose a format). Press ctrl BI (^BI) (Block Insert File). WordStar will ask: "Document to insert?" Type the name of the converted file or move the highlighting to the converted file's name and press return.

How it works

There are two parts to the translation process. The first part replaces a hard carriage return with a soft carriage return except at the end of a paragraph, converts the degree symbol to superscript lowercase 'o', and eliminates blank lines at the end of the file and blank spaces at the beginning of each line.

A file created with WordStar ver. 4 has hex char '8D 0A' (decimal '141 10') for a soft carriage return within a paragraph and '0D 0A 0D 0A' (decimal '13 10 13 10') at the end of a paragraph (when the paragraph is followed by a blank line). A file created with WordStar 2000 release 2 has a space followed by hex char '7F 03 7F' (decimal '127 3 127') for a soft carriage return within a paragraph and '0A 0A' (decimal '10 10') at the end of a paragraph (followed by a blank line). Leaving the '0D 0A 0D 0A' at the end of a paragraph is also acceptable; therefore, the programs don't change any characters at the end of a paragraph.

The Lexitron communications menu item "Transmit at end of line" lets the user select the end-of-line characters. The user should select "CR, LF". There is a test for "CR LF"/"LF CR" order in the program. If the carriage return and line feed are in reverse order, the program prints a message on the screen and counts the number of times this occurs. This line feed error count is printed at the end of processing. The program does not change the order and does not correctly convert the file for use with either version of WordStar.

The second phase of the processing converts the underscores to WordStar's underscore on/off toggle. An ASCII file communicated from the Lexitron has the underscore character preceding the letter it underscores. If one underscore character is located, it is replaced by the WordStar underscore toggle-on character. Additional underscores are removed (not written to the new file) until

the toggle-off condition is met and the underscore toggle-off character is inserted in the file. The program must look ahead of the current position to know whether underscore should be toggled off. If the Lexitron file has an underscore between underscored words, the input file will not have a space between words but will have two underscores together. The second underscore will be replaced with a space. A series of three or more underscores are recognized as a line and are not changed.

Tables 1 and 2 list ASCII decimal codes for characters, or sequences of characters, the programs look for in the original file and the replacement (or inserted) characters written to the output file. The Lexitron sends extra blank lines (carriage return and line feed characters) at the end of the document. These non-printing characters are not saved. The programs supply end-of-file characters. All other characters remain unchanged.

The source code does not include the CKSAFE subroutine which is called to check for existing files for input and output. CKSAFE source code is included in STATPAC.LIB which is available on 5 1/4 inch disk in Open-File Report 87-411-B (Grundy and Miesch, 1988 b) (documentation is in a README file). Documentation only (paper copy) is available in Open-File Report 87-411-A (Grundy and Miesch, 1988 a).

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Table 1. Character Translation Table for WordStar ver. 4

Original File ASCII (Decimal)	New file ASCII (Decimal)	Comment
13	141	Soft carriage return
96	20 111 20	Degree (°) to °
95	19	Underscore toggle on
	147	Underscore toggle off
32		Removed at beginning of lines and after last printable character.
13 10		Non-printing characters at end of file are not saved.
	13 10 13 10 26	End-of-file characters are supplied by program.

Table 2. Character Translation Table for Wordstar 2000 rel. 2

Original ASCII (Decimal)	New file ASCII (Decimal)	Comment
13 10	32 127 3 127	Soft carriage return
96	127 9 127 111 127 9 127	Degree (°) to °
95	127 6 127	Underscore toggle on/off
32		Not saved to new file at beginning of lines and after last printable character.
13 10		Non-printing characters at end of file are not saved.
	13 10 13 10 26	End-of-file characters are provided by the program.

Reference Cited

- Grundy, W.D. and Miesch, A.T., 1988, Brief descriptions of STATPAC and related statistical programs for the IBM Personal Computer: U.S. Geological Survey Open-File Report 87-411-A, 34 p.
- Grundy, W.D. and Miesch, A.T., 1988, Brief descriptions of STATPAC and related statistical programs for the IBM Personal Computer: U.S. Geological Survey Open-File Report 87-411-B, 5 computer disks.