System V, XENIX and OS/2 versions in the near future.

Given the current availability of TEX implementations on microcomputers, a TEX site needs to acquire a different implementation for each of its systems, assuming that a version exists. Our objective is to provide an implementation of TEX which is easy to port to various microcomputers and operating systems and preserve the documentation features of CWEB so that a system administrator can maintain one source to TEX for various small systems.

The original development work was done in MS-DOS on an AT compatible computer using the Microsoft C Compiler version 5.0. We are interested in hearing from institutions and individuals who would like to port TEX in CWEB to other unique operating systems, computers, and/or languages.

Adapting TEX to CWEB provides simultaneously a language like TEX for formatting and a language like C for programming. Once the WEB is translated to CWEB, a program called TANGLE is used to produce the C source code. Another program called WEAVE is used to produce a structured document, so that the large system can be understood entirely in terms of small modules and their local interrelationships. Any changes such as splitting the C source into multiple files is handled automatically within TANGLE (the entire C source produces an object file greater than the 64K limit for the Microsoft C Compiler). Any system specific changes such as those necessary to accomodate the 64K byte address space limitations imposed by the segmented architecture of the 8086 processor can be made in the change file included by TANGLE.

Now that the original translation of the TEX WEB to CWEB has been completed, and the major port for MS-DOS has been done, ports to other C environments will follow quickly. The most important thing is maintaining the source to TEX in a generic form while allowing for the smooth integration of system-dependent changes.

Fonts

Some Useful Variations of Standard Fonts

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The old "Almost Computer Modern" font set had a font called `amssmc40`. It was used for the chapter titles in the first edition of *The TEXbook*. It also turned out to be very popular for making signs. When the Computer Modern fonts were released, there was no equivalent font in the standard set. It was replaced by `cmssdc10 scaled 4000`. This is essentially the same font, with some minor improvements and one major disadvantage: the unusual magnification. Unfortunately, many DVI drivers have difficulty dealing with fonts which are not magnified by one of the standard "magstep" quantities.

To remedy this, I added the following line to `cmssdc10.mf` just after `input cmbase`:

    numeric Pt#; 1Pt#=4pt#;

and changed all occurrences of 'pt#' in the rest of the file to 'Pt#'. I called the new file `cmssdc40.mf`. The font produced by it is not exactly equivalent to `cmssdc10 scaled 4000`, but the differences are negligible.

A similar modification to `cminch.mf` yields another extremely useful font. I noticed that a couple of signs I made with `cminch` had a harsh tone because of the capital letters, even when the wording was very friendly. Changing the 'generate title;' line at the end of `cminch.mf` to 'generate roman;' creates a `cminch` font with lowercase characters (among other things). It takes up a lot more disk space, but many people use it here at Texas A&M. It should not be called `cminch`, because it's not the same font. I call it `cmssbx104` (when the capital letters are one inch high, the font size is 104 points). This will cause problems for systems (like CMS) which have severe restrictions on filename length, but I have been assured by "people who know" that there is a convention for handling this problem.

Modifications like this are extremely simple to make, and can be quite useful. A new version of `cminch` with characters one centimeter high would be nice; it could be called `cmcm`. (Along the same lines, Tom Reid once observed that `cminch scaled\magstep1` might reasonably be called 'cmdecifoot'.) I've seen several people requesting `cmssdc40`; it turns out to be very easy to create, and I think people will enjoy using it.