中文 Scribe (ChScribe) 简介

王景白, Ph.D., University of Pittsurgh

何必: 一提中文 Scribe有人不免问:何必?不是有中文的 WordStar[1]吗?而且 WordStar属于 WYSIWYG (what you see is what you get)类型,岂不比指令繁琐的 Scribe[2]强 ?其实不然,现代排版中有许多问题是 WYSIWYG类型文字处理器所力不能及的,如变宽字体 (proportional fonts)和数学公式,就是目前最受人接受的 Microsoft Word[3]也加进了 Scribe或 TEX[4]类指令.

如何: 有人又会说:那简单,中文字个个一样宽,写个短程序处理处理就行了.其实更不然,现代中文文章中多插有英文和数学.那末只好编个中文/英文 Scribe?那太费时和事了.我的办法是利用广为人使用的英文 Scribe, 另加个中文前置与后置处理器.这样既省了时间,又免得用户再学一处理系统.

原文件输入:
Scribe需先输入原文件 (manuscript),如何将中文和英文一并输入?本版本 ChScribe允许用户使用任何与 CCDOS (IBM兼容机用的中文操作系统)同样输出标准 (国标)的中英文编辑器 (如中文 WordStar和 Byx)来输入原文,如用的是 Macintosh个人微机软件,则需用所配有的处理器处理一遍才能使用.原文件 (manuscript)中可用 Scribe原有的所有指令,而无需其他特有指令.

处理: 原文件 (manuscript)写好后即可用 ChScribe作预处理. ChScribe将产生另一英文 Scribe能认识的文件,并同时产生中文字体定义 header file.接着便可由 Scribe将其变为 POSTSCRIPT文件后,再将 ChScribe产生的中文字体定义 header file加在前头,便可直接打印.这过程看来十分复杂,其实 ChScribe已将此三步变为一步,即,
%chscribe myfile
出来的便是 myfile.ps.

原理简介:

ChScribe利用 Scribe的特点,将原文件 (manuscript)中所用的不同中文字分成几组由 218字母组成的 font groups,并用一个 RawFont (Scribe字尺)文件来定义各字母的尺寸.对 Scribe而言,只要 RawFont文件有定义的字,它一概放行.至于哪个是中文字哪个是英文字,那就靠 ChScribe来判断了. ChScribe目前用了一个具有约 7000字的 24 x 24点阵简体字字库,以通讯用汉字字符集(基本集)国家标准(GB2312-80)为母本.

附加功能:传统中文用到*横竖*两种排版方式, ChScribe都兼顾到了.

[1]一种历史悠久而简陋的英文文字处理器的翻版

[2]Scribe为美国卡内几-梅隆大学一博士生 Brian Reid所创,在 TEX流行前曾风靡一时.

[3]另一种较新的 WYSIWYG型软件

[4]TEX为 Stanford大学 Donald Knuth所创,数学公式编辑能力特强而出名,而且免费供用,故应用非常之广.

A Brief Introduction to ChScribe

Jingbai Wang, Ph.D., University of Pittsurgh

Why: Why ChScribe? Aren't the existing programs like Chinese WordStar that belongs to the category of WYSIWYG (what you see is what you get) better than the complicated command-driven Scribe[5]? Actually, nowadays many typesetting problems can't be solved successfully by WYSIWYG-type systems, such as proportional fonts and math. Even the today's most acceptable WYSIWYG Microsoft Word has to use some Scribe and TEX[6] type commands.

How: Someone would say: that's simple! All Chinese characters have the same width; we just need to design a simple processor to deal with it. However, most of the concurrent Chinese articles are mixed with English and mathematical formulae. Then, we have to design a brand-new Chinese Scribe? But it costs too much time and effort. My solution is to use the widely used text formatter Scribe, and design a pre-processor and post-processor. This way, the users do not have to learn another typesetter, and it saves us a great deal of time.

Manuscript editing:
To use Scribe, you need to edit the manuscript file (*.mss file*) first. How do you edit English and Chinese together? This version of ChScribe allows you to use any Chinese-English editor that uses the same output standard (GB standard) as CCDOS[7]. If you use a Macintosh software to edit the manuscript, you have to filter it with a ChScribe built-in program before you can use it. All the original Scribe commands can be used, and essentially no additional commands are introduced.

Processing:
After the manuscript file is ready, you can use ChScribe to pre-process it. ChScribe will generate a new manuscript file that is understandable by the standard Scribe program, and in the meantime, it generates a font header file. Then, you can use Scribe to generate the POSTSCRIPT file. Afterward, the header file produced by ChScribe is prepended to this *.ps* file, and it is directly printable on a POSTSCRIPT printer. This process seems to be tedious, but ChScribe has merged these three steps into one, i.e.,
%chscribe myfile
will give you *myfile.ps*

[5]a computer typesetter created by a CMU Ph.D. student, Brian Reid. It was quite popular before TEX floored machines.

[6]A very popular document formatter designed by Dr. Donald Knuth from Stanford University. It is very good at mathematics.

[7]The Chinese operating system for IBM compatibles.

Basic principles:

ChScribe uses the features of Scribe by grouping the distinct Chinese characters occurred in the manuscript file into a few fonts groups of 218 characters each, and the font metrices of each character is defined in a Scribe RawFont file. As far as Scribe is concerned, as long as the character is defined in the RawFont file, it will let it go. As for whether a particular character is a Chinese one or English one, it is up to the ChScribe programme.

Currently, ChScribe uses a 24x24 bitmap font library of about 7000 characters, and the arrangement of the characters is based on GB2312-80 specified by the Ministry of Telecommunication of the People's Republic of China.

Addition features:

Chinese documents were traditionally typeset up-to-down plus right-to-left column-wise and later left-to-right row-wise. ChScribe supports both.

中文 TEX (ChTEX) 简介

王景白, Ph.D., University of Pittsburgh

何必: 一提中文 TEX有人不免问:何必?不是有中文的 WordStar[1]吗?而且 WordStar属于 WYSIWYG (what you see is what you get)类型,岂不比指令繁琐的 TEX[2]强 ?其实不然,现代排版中有许多问题是 WYSIWYG类型文字处理器所力不能及的,如变宽字体 (proportional fonts)和数学公式,就是目前最受人接受的 Microsoft Word[3]也加进了 Scribe[4]或 TEX类指令.

如何: 有人又会说:那简单,中文字个个一样宽,写个短程幸处理处理就行了.其实更不然,现代中文文章中多插有英文和数学.那末只好编个中文/英文 TEX ?那太费时和事了.我的办法是利用广为人使用的英文 TEX,另加个中文前置与后置处理器.这样既省了时间,又免得用户再学一处理系统.

原文件输入:

TEX需先输入原文件 (manuscript),如何将中文和英文一并输入?本版本 ChTEX允许用户使用任何与 CCDOS (IBM兼容机用的中文操作系统)同样输出标准 (国标)的中英文编辑器 (如中文 WordStar和 Byx)来输入原文,如用的是 Macintosh个人微机软件,则需用所配有的处理器处理一遍才能使用.原文件 (manuscript)中可用 TEX原有的所有指令,而无需其他特有指令.

处理: 原文件 (manuscript)写好后即可用 ChTEX作预处理. ChTEX将产生另一英文 TEX能认识的文件,并同时产生中文字体定义 header file.接着便可由 TEX将其变为 dvi (device independent)文件.最后用 dvi2ps POSTSCRIPT打印驱动器翻译成 POSTSCRIPT文件后,便可直接打印.这过程看来十分复杂,但若用 UNIX的管道 (pipe lining)功能,一句指令便能解决问题,即,

%chtex myfile|tex|dvi2ps|lpr -Fps

原理简介:

ChTEX利用 TEX的特点,将原文件 (manuscript)中所用的不同中文字分成几组由 218字母组成的 font groups,并用一系列 TFM (TEX font metric),文件来定义各字母的尺寸.对 TEX而言,只要 TFM文件有定义的字,它一概放行.至于哪个是中文字哪个是英文字,那就靠 ChTEX和 dvi2ps来合作了. ChTEX目前用了一个具有约 7000字的 24 x 24点阵简体字字库,以通讯用汉字字符集(基本集)国家标准(GB2312-80)为母本.

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How: Someone would say: that's simple! All Chinese characters have the same width; we just need to design a simple processor to deal with it. However, most of the concurrent Chinese articles are mixed with English and mathematical formulae. Then, we have to design a brand-new Chinese TEX? But it costs too much time and effort. My solution is to use the widely accepted text formatter TEX, and design a pre-processor and post-processor. This way, the users do not have to learn another typesetter, and it saves us a great deal of time.

Manuscript editing:

To use TEX, you need to edit the manuscript file (*.tex file*) first. How do you edit English and Chinese together? This version of ChTEX allows you to use any Chinese-English editor that uses the same output standard (GB standard) as CCDOS[7]. If you use a Macintosh software to edit the manuscript, you have to filter it with a ChTEX built-in program before you can use it. All the original TEX commands can be used, and essentially no additional commands are introduced.

Processing:

After the manuscript file is ready, you can use ChTEX to pre-process it. ChTEX will generate a new manuscript file that is understandable by the standard TEX program, and in the meantime, it generates a font header file. Then, you can use TEX to generate the *dvi* (device independent file). Afterward, dvi2ps is used to produce a POSTSCRIPT file that is directly printable on a POSTSCRIPT printer. This process seems to be tedious, but if you use UNIX pipe lining feature, one line command will do it, i.e.,

%chtex myfile | tex | dvi2ps | lpr -Fps

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Basic principles:

ChTEX uses the features of TEX by grouping the distinct Chinese characters occurred in the manuscript file into a few fonts groups of 218 characters each, and the font metrices of each character is defined in a few TFM (TEX font metric) files. As far as TEX is concerned, as long as the character is defined in the TFM file, it will let it go. As for whether a particular character is a Chinese one or English one, it depends on the cooperation between ChTEX and dvi2ps programs.

Currently, ChTEX uses a 24x24 bitmap font library of about 7000 characters, and the arrangement of the characters is based on GB2312-80 specified by the Ministry of Telecommunication of the People's Republic of China.

Addition features:

Chinese documents were traditionally typeset up-to-down plus right-to-left column-wise and later left-to-right row-wise. ChTEX supports both.