D V I E W :

a TeX .D V I F i l e V i e w e r

Steve Ward, July 1985
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DVIEW is a program for IBM PC compatibles for viewing TeX .dvi output files, including those using the MIT graphics extensions. Currently DVIEW supports the CGA, EGA, and the high-resolution mode of the Toshiba T3100; other displays may be supported in time. DVIEW uses standard DVI and PXL file formats.

1. Overview

DVI files are standard and machine-independent; they may be generated on the PC or downloaded from another source. Viewing them requires DVIEW plus a set of appropriate font files, which again are standard Metafont output (PXL) files and can be downloaded from any of a variety of sources. DVIEW reads each page and builds a virtual bitmap (in RAM), then blts segments onto your display as you move around the virtual page (using arrow keys). During the building process DVIEW shows its progress via a reduced image of the page; this overview is recoverable by pressing "?" subsequently. The size and shape of the virtual page, as well as a scale factor, are variable via obscure command-line arguments (see below); they default to values which allow most papers to just fit horizontally, requiring scrolling only in the vertical dimension.

2. Font Files

By default, these live in a subtree /PXL on your PC. /PXL contains subdirectories with numeric names like /PXL/480, indicating resolution; entries in the subdirectories are PXL files with names like /PXL/480/CMR10.PXL, indicating the font. You need only to download the specific files used by your paper − a reasonably complete set can run into many megabytes. To help you manage fonts, DVIEW (1) after warning you, will try to substitute a smaller font of the same style for any missing fonts; (2) allows you to review the font situation using the "f" command; and (3) writes out a file "MISSING.FNT" which indicates the additional fonts you need to download.

M.I.T. users: if you upload MISSING.FNT to hx:/archive/pxl, change into /PXL on your PC and run TX, then a MAKE on HX will download the correct fonts. Presumably this situation can be duplicated elsewhere; look in hx:/archive/pxl for our local PC-appropriate font cache.

3. Pictures

DVIEW understands the simple M.I.T. extensions for drawing lines, allowing pictures (created e.g. using GEDIT on the PC) in TeX documents to be viewed. Here's a simple example:
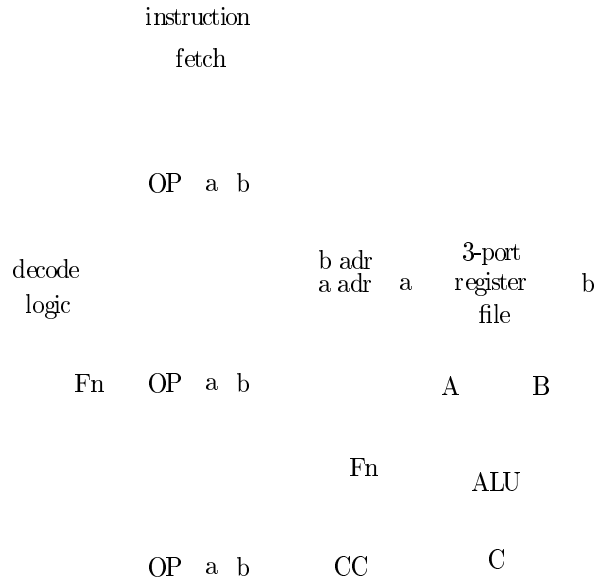
instruction

fetch

OP a b

decode   b adr   3-port
logic   a adr   a   register   b
                               file

Fn   OP a b   A   B

                          Fn   ALU

OP a b   CC   C

Figure 1: Picture having nothing to do with anything

4. Cache file

Because font loading takes some time (a LOT on an old PC, a few seconds even on the T3100) DVIEW offers the "t" command (or "-t" command line option) to cause a dump of its fonts and parameters into a fast-load file DVIEW.TMP. If DVIEW finds DVIEW.TMP on a subsequent invocation, it loads it and presumably restores your parameters (including display type) and fonts. This step is worth taking if you will be repeatedly viewing edited versions of the same file. You can delete DVIEW.TMP and/or make a new one at any point, eg if you change the set of fonts you are using.

5. Command Summary

Once in DVIEW viewing a page, you can type:

?	HELP information (this summary)
UP	move page up
DOWN	move page down
LEFT	shift page left
RIGHT	shift page right
HOME	top of page
END	bottom of page
PgUp	double step size
PgDn	halve step size
t	write state into DVIEW.TMP
f	show font list
p	Print (low-res) page
¡ digit ¿	enter new page number
space	next page
backsp	previous page
return	back to page 1
tab	skip to last page
ESC	return to MS-DOS

plus a few which I've probably forgotten. Poke around a little. Note that an up-to-date version of the above info is online.

6. Command line help

When fired up with no arguments, DVIEW gives you the following terse command line help:

```
DVIEW   DVI  File  Viewer     version  2.5     Steve  Ward
DVIEW  ¡options¿  ¡dvifile¿       [version  2.5]
 ¡options¿  or  DVIEW  envstring  may  include:
          -x#  adjusts  horizontal  page  offset.  [default:  25]
          -y#  adjusts  vertical  page  offset.  [0]
          -R#  sets  resolution  to  #  [default  96;  try  80]
          -F¡path¿  sets  font  directory  to  ¡path¿  [/pxl]
          -X#  set  virtual  page  X  size,  in  BYTES.  [90]
          -Y#  set  virtual  page  Y  size,  in  LINES.  [1000]
          -m#  sets  page  map  width  to  #.  [300]
          -dc  sets  display  to  type  c  (c=cga,t=toshiba3100,e=ega)[c]
          -t   writes  DVIEW.TMP  as  font/parameter  cache
          -t¡name¿   writes  ¡name¿  as  font/parameter  cache
```

7. Environment variable

When invoked, DVIEW looks for a value bound to the environment variable DVIEW, and interprets it as command line options. Thus, for example, the line

        set DVIEW = -de -F/tex/fonts/

in your AUTOEXEC.BAT file causes DVIEW to assume by default an EGA and the subdirectory tree /TEX/FONTS/... for fonts.

8. Distribution

DVIEW may be freely distributed, and used for any purpose by anybody. If you can figure out how to make money from it despite the fact that I'm giving it away, you're welcome to. I like the idea that free software is free – that is, completely unencumbered.

(end)