

_}__PHPLJII_-----

_}__ .pg

.MT 8

.HM 2

__SIGNS.DOC_
Version 5.0

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26 Sep 89

.he_SIGNS.DOC

Version 5.0_

Release Notice:

_
_ ä_ä_ _
__Sign_ an_ al_ associate_ file_ (Signs¼ MkFntNdx, font files,
etc._ ar_ ì
freel. release_ t_ th_ publi_ fo_ non-profi_ use« Iµ
anybody'_ goin_ t_ ì
profit¼ i_ shoul_ b_ meí Anywhat¼ thi_ i_ m. contributio_ fo_
al_ th_ grea_ ì
program_ I'v_ receive_ from the pipeline. Thank_ guys!

Revision History:

Signs:

_
_ ä_ä_ _
__1.º - Marc_ 86¼ firs_ versions¼ men_ driven« GSign_
created.

_
_ ä_ä_ _
__2.º - Ma. 86¼ al_ scree_ oriented.

_
_ ä_ä_ _
__3.º - Ju_ 86¼ bi_ mappe_ fon_ files¼ release_ w/MakeFon_
Versio_ 2.0« ì
Ne_ features| invers_ video¼ use_ changeabl_ singl_ bloc_
character¼ inter-ì
characte_ spacing¼ block_cha_ use_ fo_ fil_ i_ invers_ video.

_
_ ä_ä_ _

__4.x - Oct 86, added bit-mapped output, Librar· released with
3 font ì
files (font1, font2, gothfont), MS-DOS+ versio_ release_ and
patched so that ì
'Gothfont' fit.

—
— ä_ä_ _
__4.2 - Aug 89, patched to compile with TurboPascal v5.0.

—
— ä_ä_ _
__5.0 - Sep 89, Redesign of font file interface to use HP
LaserJet font ì
files, elimination of MakeFont and Generic versions for CP/M,
addition of a ì
font index file generator, expanded Epson printer support.
Converted old font ì
files into HP LaserJet-compatible font files. TurboPascal
v5.0 specific.

—
— ä_ä_ _
__Older versions are still workable, but why bother. Though I
still have ì
my CP/M machine, it doesn't get turned on much.

Background:

—
— ä_ä_ _
__+ wa_ neve_ happ· wit_ th_ sign- an_ banner-makin_ program_
availabl_ ì
fo_ CP/M« Sur_ ther_ wer_ ß numbe_ ou goo_ ones¼ speciall·
'GOTHIC,° bu_ non_ ì
hav_ enoug_ variabilit· t_ sui_ me« B· variability¼ + mea_
th_ capabilit· t_ ì
chang_ sizes¼ fonts¼ an_ pape_ positionin_ t_ creat_ whateve_
+ wanted« Wha_ ì
+ reall· wante_ wa_ ß 'Prin_ Shop° fo_ CP/M-80« Alas¼ it'_
no_ availabl_ an_ ì
i_ look_ a_ iþ n_ on_ i_ developin_ an· ne_ stufþ fo_ m· (old)
favorit_ OS.

—
— ä_ä_ _

__I though the problem was solved when I ran across a set of
two ì
programs by Ken Crook in Pascal. I was just learning Pascal,
so I thought ì
this would be a good way to get some fun education.
Unfortunately, the ì
program was not written very well - although some good options
were present, I ì
couldn't even compile the programs (called 'sign' and
'banner') as they ì
wouldn't fit in memory. (CP/M-80, TurboPascal v3.01, 63k,
error messages ì
off.) The main problem was that all of the character fonts
were held in ì
memory at one time. Even eliminating all the symbols and
keeping just numbers ì
and upper case letters yielded a com file of 36k. (Besides,
input was taken _ ___4___o5_____ __ìèfrom a
file not the console, which was a pain.)

Features:

-
- ä_ä_ _
__So I decided to start over and write my own. Major features
of ì
my program are:

-
- ä_ä_ _

- ä___ _
__- Fonts are held in an external HP LaserJet-compatible
'soft' font ì
file which is read by random access methods. It reads only
the required ì
characters into memory when they are needed. An index to the
font file is ì
required (contains character descriptor data and pointers into
the HP file) ì
which is created by the separate program MkFntNdx.

-
- ä_ä_ _

```

---
-   ä___ _
-- - Signs and Banners are made by changing an option.  They
may be ì
output to the console, a file, or lst: device (printer).  Lots
of other ì
options are available.  (see below)

```

```

-
-   ä_ä_ _
---
-   ä___ _
-- - Any HP LaserJet-compatible 'soft' portrait font may be
used.  ì
Because of the very-high resolution 300dpi of the LaserJet,
many soft fonts ì
will be 'too big' for screen output.  I.e., each dot is turned
into a ì
character position limiting screen output to 80 'dots' wide.
To remedy this, ì
tw_ fon_ set_ ar_ supplied| on_ wit_ character_ tha_ ar_ u_ t_
l_ unit_ hig_ ì
countin_ ß tw_ bloc_ descender an_ u_ t_ l_ block_ wide+ an_
on_ whic_ i_ fou_ ì
time_ wide_ an_ twic_ a_ high« Both are proportionally
spaced.  The smaller ì
of the two is readable only with a magnifying glass if
actually downloaded to ì
LaserJet - but it works fine with Signs.

```

```

-
-   ä_ä_ _
---
-   ä___ _
-- - Font editors are *not* supplied, editing an HP font file
is a ì
very tricky business.  'AlterFnt' and 'QFont' are two
shareware-available ì
editors available.  Many soft fonts are also available.  I
designed one of ì
supplied fonts, a friend (RK Sparks) did the other.

```

```

-
-   ä_ä_ _
---

```

```

-      ä___ _
__- Four printers are supported: IDS, Epson, HP and 'dumb'.
Dumb ì
printers can't output in graphics dot-mode.  There are four
graphic output ì
densities for the HP and Epson.

```

```

-
-      ä_ä_ _
---
-      ä___ _
__- If printing¼ on_ ca_ chang_ th_ cp_ an_ lp_ froø th_ men_
whic_ ì
automaticall_ adjust_ th_ printer« Inpu_ line_ ar_ checke_ t_
se_ iþ the_ ì
wil_ fit« Norma_ (80_ an_ wid_ (132_ terminals¼ a_ wel_ a_
smal_ (8"_ an_ ì
larg_ (14"_ printer_ ar_ correctl_ handled« Th_ use_ ca_ eve_
reques_ outpu_ ì
i_ "revers_ videoó (Whit_ letters¼ blac_ backgroun_ instea_ ou
blac_ letter_ ì
o_ ß whit_ background.)

```

```

-
-      ä_ä_ _
---
-      ä___ _
__- Th_ letter_ ou th_ outpu_ sign/banne_ ca_ b_ mad_ ou th_
lette_ ì
itself¼ an_ singl_ character¼ ß 'overstrike° bloc_ t_ mak_ ß
nic_ blac_ soli_ ì
bloc_ o_ individua_ dot_ usin_ th_ graphic_ mod_ ou th_
printer« (Naturall_ ì
th_ graphic_ dot-mod_ wil_ creat_ muc_ smalle_ letter_ an_ i_
strongl_ printe_ ì
dependent«

```

```

-
-      ä_ä_ _
__+ thin_ you'l_ fin_ tha_ th_ prograø i_ self-explanatory«
Onc_ ì
selected¼ ß optio_ doe_ no_ chang_ unti_ manuell_ changed«
Thi_ allow_ _ ____4____+0_____ __ìèchangin_ jus_
on_ optio_ quickly« Som_ option_ eliminat_ others.

```

Files:

-
- ä_ä_ _
__READ.ME - introduction to signs.

-
- ä_ä_ _
__RWBFONT.FNT, RKSFONT.FNT - HP LaserJet compatible soft font
files

-
- ä_ä_ _
__RWBFONT.FNX, RKSFONT.FNX - index to above created by
MkFntNdx and used ì

-
- ____á

__by Signs.

-

- ä_ä_ _

__MkFntNdx.PA+ - (Make Font Index_ sourc_ cod_ fo_ fon_ index
generato_ - ì

-

- ----á

```
__ask_ fo_ inpu_ filenames«  
-  
-   ä_ä_ _  
__SIGNS.PAS - source code for sign generator.  Also calls the  
include ì  
-  
-   ____á
```


__files: CONST.PAS, ASK.PAS, DISP.PAS, PRT.PAS, UTIL.PAS

-

- ä_ä_ _

__SIGNS.IN - sample file input, contains all printable
characters.

-

- ä_ä_ _

__SIGNS.OUT - sample output file from signs.in

-

- ä_ä_ _

__SIGNS.DOC - this file.

-

- ä_ä_ _

__SIGNS.EXE, MKFNTNDX.EXE - executables

-

- ä_ä_ _

__PRINTER2.PAS, PRINTER2.TPU - TurboPascal v5 fix for LST
output

Compiling:

-

- ä_ä_ _

__TurboPascal v 5.0 was used to compile the program, using the
CRT and ì
PRINTER2 'use' units. A installed Ansi driver is required for
the low/high ì
video calls.

-

- ä_ä_ _

__I found a bug in TurboPascal v5.0: the default 'printer'
unit in ì
TURBO.TPL will not output a CHR(26) which is needed when one
outputs graphics. ì
Borland provided the 'printer2' public domain unit which fixes
the problem. ì
This problem was not in TurboPascal v3.

Running:

-

- ä_ä_ _

__As a minimum, one needs to have the following files in the default ì
directory: Signs.exe, one HP LaserJet-compatible soft font
file, and a index ì
to the font file (created by mkfntndx.exe.)

Notes:

-
- ä_ä_ _
__- som_ option_ ar_ disable_ wit_ othe_ options« Fo_
instance¼ iþ on_ ì
select_ consol_ output¼ yo_ don'_ se_ any printer options. O_
iþ yo_ ente_ ß ì
give_ lef_ margi_ t_ use¼ th_ outpu_ centerin_ optio_ i_
disabled« (T_ cente_ ì
th_ outpu_ afte_ zeroin_ ß previously-give_ lef_ margin¼ on_
ha_ t_ manua_ly ì
ente_ 'y° t_ centerin_ a_ ß non-zer_ lef_ margi_ set_
centerin_ t_ 'no'._ ì
Non-applicabl_ men_ item_ ar_ no_ displayed.

-
- ä_ä_ _
__- beware of hardware differences in printers. If in doubt,
make the ì
printer type 'dumb' and avoid bit-mapped graphics output.

-
- ä_ä_ _
__- Outputting to a file automatically sets the line width to
the maximum. ì
You probably will want to reduce it to something reasonable -
especially if ì
you ask for auto-centering.

- ____4____+0_____ _
è

Options:

Upo_ entr_ t_ th_ prograø on_ i_ place_ directl_ i_ "chang_
parametersó mode« ì
A options menu is shown: (The actual menu will have
inappropriate entries ì
missing, they will appear as they become pertinent.)

Signs Version: v5.0, 10 Sep 89
Mode: _Change Params_

----- _Options and I/O Parameters_ -----

T-	Sign type -> Sign	_I_-	Input
Device ->	File		
B-	Block/Letter type -> Letters	_R_-	FileName to
Read ->	Signs.in		
F-	Font File -> Font.usp	_N_-	Number of
Copies ->	1		
W-	Width Multiplier -> 1	_O_-	Output
device ->	Printer		
H-	Height Multiplier -> 1	_S_-	Device
Size ->	Normal		
V-	Inverse Video -> Off, Normal	_Y_-	Printer
Type ->	Epson		
A-	Auto-Centering -> Yes	_P_-	Pitch
chars/inch ->	Squeezed [17]		
M-	Given left margin -> none defined	_L_-	
Lines/Inch ->	Twelve		
G-	Given Width -> not given	_C_-	Color of
Print ->	Black		
Q-	Quit and Return back to OS	_D_-	Graphics
Density ->	Single		
_X,<cr>-	eXit Change Parm	_E_-	rEcord Output
In ->	Signs.out		

Width available ->	_136_	Font width:	_10_
Height:	_12_		
		Enter option letter	

On the options menu one can change:

-

- ä_ä_ _

__- _Sign type:_ Signs are horizontally printed across page,
banners ì
are vertically printed down page

-

- ä_ä_ _

```

__- _Block type:ô Th_ caracte_ tha_ make_ u_ th_ sign_ ca_
eithe_ b_ th_ î
lette_ printed¼ soli_ block¼ o_ a single 'dot' (bits)« Block_
ma_ b_ mad_ tw_ î
ways¼ b_ over striking severa_ character_ o_ b_ sendin_ ß
printe_ ß singl_ î
user-defined character. (The default single block character
is 177 which is î
defined as a block in the IBM-PC extended character set. Your
printer will î
probably print something else. Mileage will vary._ Iu on_
select_ singl_ î
block¼ i_ wil_ as_ wha_ caracte_ t_ send« Enter the decimal
number of the î
character. Fo_ bit-mapping¼ eac_ 'block° become_ ß singl_ do_
i_ th_ graphic_ î
mod_ o_ ß printer« Whe_ enterin_ bi_ mode¼ th_ widt_ ou th_
outpu_ lin_ i_ î
automaticall_ se_ to whatever is appropriate for the printer
defined.

```

```

_
_   ä_ä_ _
__- _Font file:ô On_ ca_ chang_ th_ nam_ ou th_ fon_ fil_ t_
b_ use_ a_ an_ î
time« Iu th_ filename_ entere_ i_ no_ found¼ a_ erro_ messag_
an_ '????° wil_ î
b_ show_ fo_ th_ filename« Iu found¼ th_ siz_ ou th_ fon_
wil_ b_ shown« A_ î
filename extension of .FNT is assumed if not entered. Program
will complain î
if the file is not found or a associated index with a .FNT
extension.

```

```

_
_   ä_ä_ _
__- _Mult w,Mult h:ô Th_ outpu_ ma_ b_ doubled¼ tripled¼ etc«
i_ bot_ widt_ î
and height. Enter your choice, the program will simply not
print any î
characters that overflow the output line.
_ ____4____+0_____
è_
_   ä_ä_ _

```

```
-- _Inverse video:ô Doe_ wha_ yo_ think| space_ ar_ printe_
a_ th_ block ì
character, and the character is printed as a space. Not
available with 'bit-ì
blocks.' The single-strike block character (default 177) will
be printed ì
between characters.
```

```
-
- ä_ä_ _
-- _Centering:ô Ip n_ give_ offset¼ answe_ iþ outpu_ b_
centere_ o_ pag_ ì
o_ flus_ t_ lef_ margin.
```

```
-
- ä_ä_ _
-- _Given Margin:ô Ente_ ho_ man· character_ should b_ sen_
befor_ ì
printin_ sign_ o_ banner« Thi_ ha_ th_ effec_ op ß lef_
margi_ fo_ sign_ o_ ì
movin_ banne_ 'left' o_ 'right' o_ th_ outpu_ device« (B·
playin_ wit_ th_ ì
give_ offse_ an_ revers_ formfeed¼ on_ ca_ ge_ multipl_ line_
i_ Banne_ ì
format.)
```

```
-
- ä_ä_ _
-- _Given width:ô Ip no_ zero¼ th_ prograø wil_ us_ thi_
figur_ fo_ th_ ì
maximuø numbe_ op character_ pe_ outpu_ line« Als_ centering¼
ip on¼ wil_ b_ ì
base_ o_ thi_ widt_ ip no_ zero« Automaticall· se_ t_
Max_Lengt_ upo_ ì
entering bit-mapped mode (block_type = bit).
```

```
-
- ä_ä_ _
-- _Quit:ô on_ ca_ qui_ froø th_ option_ men_ wit_ ß 'Q'«
On_ migh_ nee_ ì
thi_ ip yo_ forge_ th_ nam_ op th_ font file t_ us_ an_ sign_
won'_ le_ yo_ ì
exi_ unti_ yo_ giv_ i_ ß goo_ name.
```

```
-
```

```

-      ä_ä_ _
__- _eXit:_ Upo_ entr· op ß 'X° o_ <cr>¼ on_ i_ place_ i_
"inpu_ textó ì
mode«

```

```

-      ä_ä_ _
__- _Input device:ô On_ ca_ ente_ th_ outpu_ line_ on_ a_ ß
tim_ froø th_ ì
keyboar_ o_ tak_ theø i_ ß bunc_ froø ß designate_ tex_ file«
Th_ default_ ì
filenam_ i_ SIGNS.IN« Ip inpu_ froø ß file¼ on_ ca_ specif·
ho_ man· copie_ ì
yo_ want« + formfee_ i_ sen_ betwee_ copie_ ip outpu_ t_ ß
printer.

```

```

-      ä_ä_ _
__- _File to Read:_ Name of the file to take input from,
multiple lines are ì
output separately.

```

```

-      ä_ä_ _
__- _Number:_ If reading from a file, how many copies to
output.

```

```

-      ä_ä_ _
__- _Output device:ô Specif· outpu_ shoul_ b_ sen_ t_ th_
consol_ screen¼ ß ì
tex_ file¼ o_ th_ lst| device« Ip recordin_ outpu_ i_ ß file¼
th_ default_ ì
nam_ i_ SIGNS.OUT« Ip printing¼ on_ can| ente_ wha_ pitc_
shoul_ b_ use_ (1_ ì
pica¼ 1_ elite¼ 17 squeeze_ o_ 2_ tin· [squeeze_ give_ 13_
character_ pe_ 8ó ì
line])+ ho_ man· line_ pe_ inc_ shoul_ b_ use_ (6¼ 8¼ 10¼ o_
12)+ an_ colo_ ì
(black¼ blue¼ gree_ o_ red).

```

```

-      ä_ä_ _
__- _Device size:ô Ip printing¼ indicat_ whethe_ printe_ i_
8ó wid_ o_ 14ó ì

```

wide« If displayin_ o_ screen% indicat_ whethe_ termina_ i_ 8_ character_ i_ wid_ o_ 132« Outpu_ widt_ fo_ fil_ outpu_ i_ whateve_ wa_ previousl_· se_ wit_ i_ ß maximum of Max_Lengt_. Specif_ ß give_ widt_ i_ yo_ wan_ centerin_ t_ ß i_ different width.

—
— ä_ä_ _
__- _Printer:_ Either Epson, IDS, HP or 'dumb'. Dumb printer are not sent i_ any control codes and are not capable of dot-graphics.

— ____4____+0_____ _
è_

— ä_ä_ _
__- _Pitch, Lines:_ Set to whatever you want for best appearance. Not i_ available for dumb printers. Dot-graphics reset this parameter to whatever is i_ appropriate for graphics.

—
— ä_ä_ _
__- _Color:_ The IDS printers support color.

—
— ä_ä_ _
__- _Density:_ Epson and HP printers have different graphic output i_ densities. Characters will change size and shape as this is varied.

—
— ä_ä_ _
__- _Output file:_ Name of file to store output in.

Not_ tha_ th_ siz_ of th_ fon_ i_ us_ i_ displayed afte_ th_ fon_ fil_ ha_ i_ bee_ opened% a_ wel_ a_ th_ calculate_ availabl_ outpu_ spac_.

The input text mode has a menu of contro_ character_:


```

    _^P_: Change parameters      _^F,^L_: Send Formfeed to LST
    _^X_: Restart Input
    _^C,^D_: Done, quit to OS    _^R,^T_: Send Reverse Formfeed
    _^H_: Backspace
    _<ret>_: Process Input        _^A_: Alternate Input
    -----
    -----

```

```

-
-   ä_ä_ _
__- send a formfeed to the printer ('^F' or '^L'),
-
-   ä_ä_ _
__- send a reverse formfeed to printer to return to TOF
(' ^T'),
-
-   ä_ä_ _
__- goto the options menu and change the program parameters
(' ^P'),
-
-   ä_ä_ _
__- exit program ('^C' or '^D'),
-
-   ä_ä_ _
__- backspace ('^H' or <del>),
-
-   ä_ä_ _
__- ask to redisplay the menu again ('^R'),
-
-   ä_ä_ _
__- delete entered line and start over ('^X'), or
-
-   ä_ä_ _
__- enter alternate input routine to enter non-ASCII
characters ('^A')
-
-   ä_ä_ _
__- anything else is entered into the line to be printed.

```

(You _CAN_ mix input and control characters, i.e. enter the input line, strikeì
 ß ^+ t_ chang_ th_ parameters¼ an_ retur_ t_ inpu_ lin_
 withou_ losin_ ì
 anything.)


```

Th_ alternat_ inpu_ routin_ (^A_ prompt_ yo_ t_ ente_ ß
DECIMAL cod_ ou ß ì
character« Thes_ ca_ b_ pu_ t_ goo_ us_ iµ the font file has
define_ mor_ ì
tha_ th_ standar_ 9+ ASCII character_. Entrie_ greate_ tha_
255 ar_ rejected¼ ì
other_ ar_ appende_ t_ th_ inpu_ string« Th_ decima_ valu_ i_
echoe_ a_ th_ ì
characte_ i_ appended« Ente_ ß <cr+ t_ retur_ t_ norma_
input«

```

_Hardware:ä

```

-
-   ä_ä_ _
__There is hardware-specific code in the source in several
procedures: ì
(I've tried to but them all in the prt.pas include file.)

```

```

-
-   ä_ä_ _
__Procedure set_up_prt contains all the character sequences
necessary to ì
set and reset the printers in the various modes (10, 12, 17,
20 pitch.) The ì
code included in the distribution copy is for the IDS
MicroPrism (or Prism), ì
Epson, and HP LaserJet. You will have to change it for any
other printer _ ____4____+0_____ __ìèmodel.
Note: the IDS printers can't do 20 pitch.

```

```

-
-   ä_ä_ _
__Procedure calc_width contains the actual pitches for the ì
various conditions. Squeezed print on the IDS is 16.5 pitch,
Squeezed print ì
on the Epson is 17 pitch. Tiny (20 pitch) is available on the
Epson, not on ì
the IDS.

```

```

-
-   ä_ä_ _
__Procedur_ out_cha_ output_ 'Block_Char'¼ (define_ a_ #12+ i_
th_ CONS+ ì

```

```

bloc_ a_ th_ default._   Thi_ printer_ ß singl_ pas_ bloc_ fo_
th_ ID+ ì
printer«  Apparentl_ th_ standar_ mod_ o_ th_ Epso_ printe_
doesn'_ hav_ ß ì
one-pas_ bloc_ characte_ (onl_ i_ 'IBM-mode'._ + advis_ no_
t_ us_ bloc_ mod_ ì
wit_ th_ Epson¼ us_ overstri_k_ mod_ t_ prin_ block_ o_ defin_
th_ singl_ pas_ ì
'block° characte_ a_ ß '*° o_ 'X'.

```

```

-
-   ä_ä_ _
__Procedur_ mai_ output_ string_ t_ th_ printe_ fo_ formfee_
(^+ - that'_ ì
prett_ standard_ an_ revers_ formfee_ (<esc>H0$<esc>G0ñ -
that'_ no_ ì
standard).

```

```

-
-   ä_ä_ _
__Procedure out outputs one graphics line. The graphics line
is varying ì
lengths, depending on the mode and is contained in the char
array gout_1 and ì
gout_2. Triple and Quad density for the Epson interleaves the
tow graphics ì
lines.

```

```

-
-   ä_ä_ _
__To change number or characters for creating the overstrike
block, ì
adjust the os-char string to the appropriate characters. The
length of ì
os_char determines the number of strikes (currently the
maximum length is 5).

```

Notes on Programming Techniques:

```

-
-   ä_ä_ _
__+ hav_ ß tendenc_ t_ writ_ m_ Pasca_ procedure_ an_
function_ to_ lon_ ì

```

accordin_ t_ classica_ thought« (S_ muc_ fo_ classica_
 thought._ However¼ ì
 th_ lon_ procedure_ al_ contai_ jus_ on_ ideß (o_ menu_ an_
 couldn'_ b_ easil_ ì
 an_ clearl_ broken« Main¼ out_sign¼ out_banner¼ an_
 check_sig_ ar_ als_ to_ ì
 lon_ accordin_ b_ m_ Pasca_ Perfesser« (Wha_ doe_ h_ know¼
 anyhow+ - ho_ t_ ì
 spel_ professo_ fo_ one!_ Anywhat¼ I'l_ somebod_ els_ figur_
 ß goo_ wa_ t_ ì
 brea_ i_ up.

-
 - ä_ä_ -
 __I've_ eve_ use_ ß coupl_ op GOTO'_ (heresy!_ wher_ i_ wa_
 easie_ t_ us_ ì
 on_ tha_ t_ figur_ ou_ ho_ t_ loo_ it« Ther_'s to_ man_ loop_
 a_ i_ is« ì
 Purist_ wil_ complai_ tha_ ther_ ar_ to_ man_ globa_ variable_
 an_ + shoul_ ì
 have passed the record variable by pointer. Having learned by
 style from ì
 FORTRAN, I'm a long ways from being a purist.

-
 - ä_ä_ -
 __Speakin_ op style¼ m_ styl_ op programmin_ i_ differen_ froø
 most¼ + d_ ì
 a lot op dBas_ I+ programmin_ s_ hav_ picke_ u_ it_ styl_ an_
 translate_ i_ t_ ì
 Pascal« I_ particular¼ BEGIN/EN- pair_ ar_ *not- necessaril_
 matche_ u_ i_ ì
 indenting¼ bu_ flo_ contro_ statement_ mor_ tha_ tw_
 statement_ apar_ *are- ì
 an_ ß terminato_ i_ used« Ip there'_ ß natura_ 'END° there¼
 fine+ otherwis_ ß ì
 {end² i_ used« Tr_ it¼ + lik_ it.

-
 - ä_ä_ -
 __On_ ca_ chang_ m_ default_ b_ changin_ th_ initialized
 'constants° a_ _ ____4____+0_____ ìèth_ to_ op
 th_ file (actually in the include file const.pas)« Warning|
 ip yo_ ì

```

mak_ inpu_ froø o_ outpu_ t_ ß fil_ th_ default¼ yo_ wil_
somehow hav_ t_ ope_ ì
th_ fil_ i_ procedur_ mai_ - + opene_ the files when the user
exits from ì
ask_parameters.

```

```

-
-   ä_ä_ _
__Mos_ procedure_ ar_ i_ 'natural'¼ i.e« FORTRAN¼ order«
(Anothe_ ì
throwback!_ Mai_ come_ first¼ followe_ b. majo_ subroutines¼
close_ ou_ wit_ ì
utilities« Thi_ ha_ th_ effec_ op causing al_ procedure_ an_
function_ t_ b_ ì
FORWAR- declared« (O_ almos_ al_ - mai_ isn't a_ it's first
anyway._ Th_ ì
rea_ progrø a_ th_ en_ simpl. announces itself¼ call_ main¼
an_ announces ì
termination« Pasca_ ca_ b_ readableí Th_ disp_+ an_ ask_+
procedure_ ar_ no_ ì
i_ natura_ orde_ an_ ar_ no_ forwar_ declared« The. ar_
randoml. accesse_ ì
anyhow.

```

```

-
-   ä_ä_ _
__Anothe_ warning| th_ progrø may han_ iþ th_ printe_ i_ th_
define_ ì
outpu_ an_ i_ off-lin_ whe_ yo_ exit« Thi_ happen_ becaus_ ß
rese_ strin_ i_ ì
sen_ t_ i_ eve_ iþ n_ outpu_ i_ done« (assumin_ th_ dum_
printe_ switc_ i_ ì
off._ Thi_ ma. b_ ß concer_ iþ th_ printe_ i_ th_ defaul_
outpu_ an_ on_ ì
exit_ withou_ an. input.

```

```

-
-   ä_ä_ _
__+ carriag_ retur_ t_ th_ entr. promp_ withou_ an. inpu_
character_ wil_ ì
as_ t_ exit« Inpu_ ß space<cr+ iþ yo_ wan_ ß blan_ lin_ to be
output.

```

```

-
-   ä_ä_ _

```

__While_ outputtin_ t_ ß file¼ th_ fil_ wil_ remai_ ope_ unti_
prograø i_ ì
exite_ o_ th_ outpu_ directio_ i_ changed« Thi_ way¼ multipl_
outpu_ line_ ì
ma· b_ store_ i_ on_ file« Remembe_ tha_ whe_ outputtin_ t_ ß
fil_ tha_ th_ ì
widt_ i_ se_ whateve_ th_ previou_ maximuø was« Th_ prograø
ca_ handl_ u_ t_ ì
3000-some caracte_ wid_ output« Auto-centerin_ ma· ad_ mor_
o_ no_ enoug_ ì
space_ tha_ yo_ want¼ s_ se_ ß smaller/large_ widt_ wit_ th_
given-widt_ ì
setting.

Bugs:

-
_ ä_ä_ _
__I did not figure out how to handle negative left-offsets in
the font ì
files when outputting banners. A negative left-offset means
that the cursor ì
should move LEFT that number of dots - for a banner that means
'taking back' ì
lines that have already been output.

-
_ ä_ä_ _
__The algorithm that calculates the actual number of character
across ì
needed for a sign is not correct for all cases - negative
left-offsets throw ì
it off. The effect is when outputting in inverse video, the
border lines are ì
not always the right length.

-
_ ä_ä_ _
__Have fun. If anyone adds new and exciting options, I would
be ì
interested in seeing it. I 'think' all the bugs are out, but
one never ì
knows ...

Robert W. Bloom_ ____4____+0_____

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