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UNIX™ System V
DOCUMENTER'S WORKBENCH™
Software Release 2.0

Handbook for New Users

NOTICE

The information in this document is subject to change without notice. AT&T assumes no responsibility for any errors that may appear in this document.

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Introduction

If you have limited experience using the DOCUMENTER'S WORKBENCH Software, this reference handbook is designed for you. It shows various files before and after formatting and explains the role of each request or macro in the "input" file.

You should not use this handbook to learn how to use DOCUMENTER'S WORKBENCH Software tools; the *DOCUMENTER'S WORKBENCH Software User's Guide* (310-004) is the authoritative primer. Annotated, concrete examples for **nroff**, **mm**, **tbl**, **neqn/eqn**, **troff**, and **pic** are provided here to jog your memory after you use the *User's Guide*.

Two other documents are available for the more experienced DOCUMENTER'S WORKBENCH Software user. The *DOCUMENTER'S WORKBENCH Software Technical Discussion and Reference Manual* (310-005) is the source for technical details, and the *DOCUMENTER'S WORKBENCH Software Handbook* (310-008) is a memory jogger for people with technical expertise.

How to Read this Handbook

1. First, this handbook presents an input, or source, file in unformatted form (**input**). The source files presented here also appear wholly or partially in the "Sampler" of the *User's Guide*, and they are available for you to copy (see the Preface to the "Sampler").
2. Next, each macro or request in the **input** file is explained.
3. This handbook next suggests where in the *User's Guide* or in the *Technical Discussion and Reference Manual* to find more information about the DOCUMENTER'S WORKBENCH Software components used in the example.
4. Command lines for formatting the file are presented next. These command lines show you how to store the formatted output in a file and how to send the formatted output to a printer or, where appropriate, to a phototypesetter.
5. Finally, this handbook shows the formatted file (**input.out**).

This handbook observes the following rules:

[]   specifies an optional argument

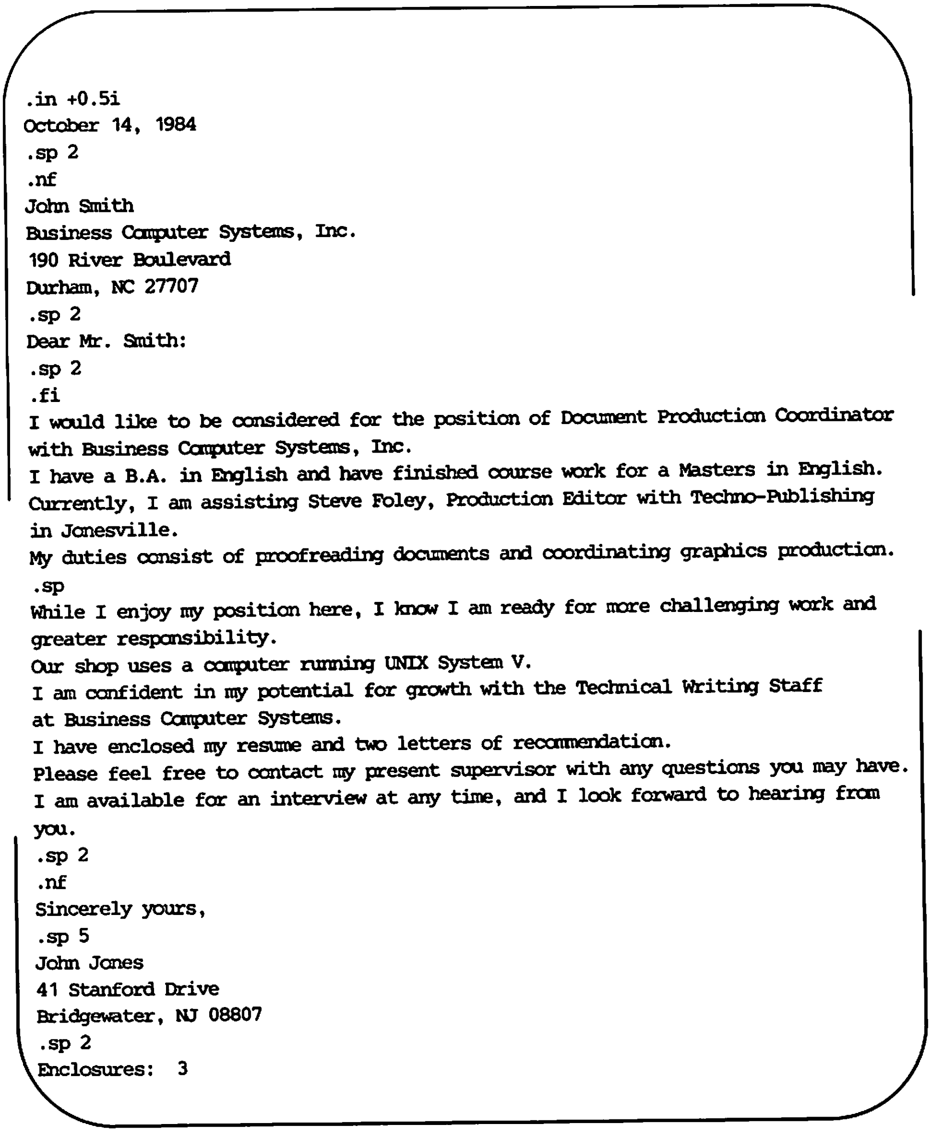
Italic text   shows where you may substitute appropriate values

Bold text   shows where you must type exactly what is specified

Check with your system administrator for locally available output devices (printer or phototypesetter).

nroff

input:



```
.in +0.5i
October 14, 1984
.sp 2
.nf
John Smith
Business Computer Systems, Inc.
190 River Boulevard
Durham, NC 27707
.sp 2
Dear Mr. Smith:
.sp 2
.fi
I would like to be considered for the position of Document Production Coordinator
with Business Computer Systems, Inc.
I have a B.A. in English and have finished course work for a Masters in English.
Currently, I am assisting Steve Foley, Production Editor with Techno-Publishing
in Jonesville.
My duties consist of proofreading documents and coordinating graphics production.
.sp
While I enjoy my position here, I know I am ready for more challenging work and
greater responsibility.
Our shop uses a computer running UNIX System V.
I am confident in my potential for growth with the Technical Writing Staff
at Business Computer Systems.
I have enclosed my resume and two letters of recommendation.
Please feel free to contact my present supervisor with any questions you may have.
I am available for an interview at any time, and I look forward to hearing from
you.
.sp 2
.nf
Sincerely yours,
.sp 5
John Jones
41 Stanford Drive
Bridgewater, NJ 08807
.sp 2
Enclosures:  3
```

Explanation

.in +0.5i indents all text one-half inch from the left margin

.sp 2 places two lines of space between the lines it separates

.nf turns off line filling

.fi turns on line filling

.sp 5 places five lines of space between the lines of text it separates

NOTE

"The Formatter **nroff**: a Tutorial" in the *User's Guide* teaches you how to control attributes of your formatted document, including the margins, indentation, hyphenation, number of characters per line, and lines per page. It also discusses number registers and strings. The chapter titled "**nroff/troff** Technical Discussion" in the *Technical Discussion and Reference Manual* comprehensively discusses **nroff** and provides the **nroff**(1) manual page.

Command Lines

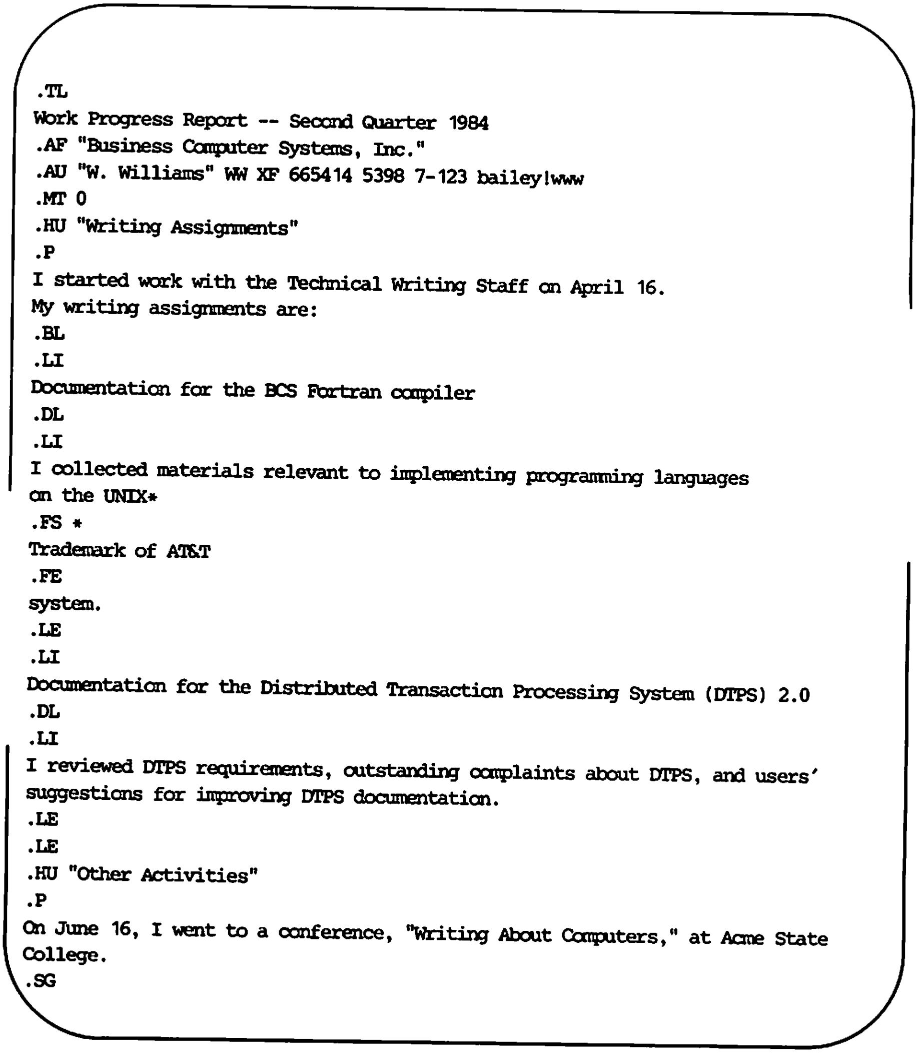
nroff [*options*] **input > input.out**
or
nroff [*options*] **input** | *printer*

input.out

```
October 14, 1984


John Smith
Business Computer Systems, Inc.
190 River Boulevard
Durham, NC 27707


Dear Mr. Smith:


I would like to be considered for the position  of  Document
Production  Coordinator with Business Computer Systems, Inc.
I have a B.A. in English and have finished course work for a
Masters  in English.  Currently, I am assisting Steve Foley,
Production Editor with Techno-Publishing in Jonesville.   My
duties  consist  of  proofreading documents and coordinating
graphics production.

While I enjoy my position here, I know I am ready  for   more
challenging  work and greater responsibility.  Our shop uses
a computer running UNIX System  V.   I  am  confident  in  my
potential  for  growth  with the Technical Writing Staff at
Business Computer Systems.  I have enclosed  my  resume  and
two  letters of recommendation.  Please feel free to contact
my present supervisor with any questions you may have.  I am
available  for  an interview at any time, and I look forward
to hearing from you.


Sincerely yours,




John Jones
41 Stanford Drive
Bridgewater, NJ 08807


Enclosures:  3
```

mm

input:



```
.TL
Work Progress Report -- Second Quarter 1984
.AF "Business Computer Systems, Inc."
.AU "W. Williams" WW XF 665414 5398 7-123 bailey!www
.MT 0
.HU "Writing Assignments"
.P
I started work with the Technical Writing Staff on April 16.
My writing assignments are:
.BL
.LI
Documentation for the BCS Fortran compiler
.DL
.LI
I collected materials relevant to implementing programming languages
on the UNIX*
.FS *
Trademark of AT&T
.FE
system.
.LE
.LI
Documentation for the Distributed Transaction Processing System (DTPS) 2.0
.DL
.LI
I reviewed DTPS requirements, outstanding complaints about DTPS, and users'
suggestions for improving DTPS documentation.
.LE
.LE
.HU "Other Activities"
.P
On June 16, I went to a conference, "Writing About Computers," at Acme State
College.
.SG
```

Explanation

.TL	formats the lines that follow it (until the next macro) as the title of a formal memorandum
.AF	formats the name of the firm, "Business Computer Systems, Inc."
.AU	formats information about the author
.MT	chooses a formal memorandum type
.HU	formats an unnumbered heading
.P	begins a new paragraph
.BL	initializes a bullet list
.LI	specifies that the text that follows is a list item
.DL	initializes a dash list
.FS	signals the beginning of footnote text
.FE	signals the end of footnote text
.LE	signals the end of a list
.SG	prints the signature line

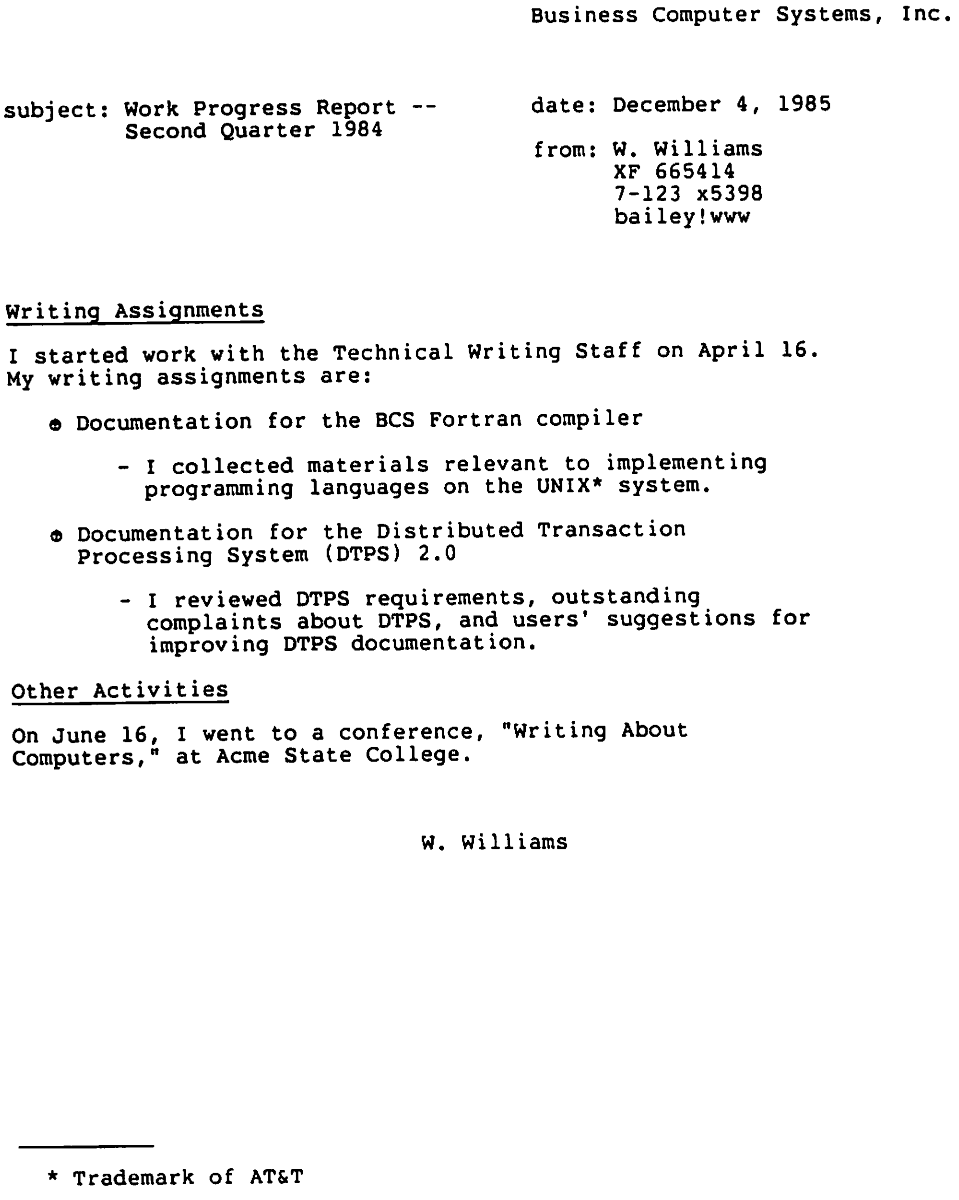
NOTE

"The **mm** Macro Package: a Tutorial" in the *User's Guide* teaches you how to format documents with **mm** using its defaults and, for some macros, teaches you how to refine the way they work. The chapter titled "**mm** Technical Discussion" in the *Technical Discussion and Reference Manual* comprehensively discusses this package. It also provides manual pages for the **mm** and **mmt** commands (**mm**(1), **mmt**(1)) and the **mm** macro package (**mm**(5)).

Command Lines

```
mm [options] input > input.out
        or
mm [options] input |printer
        or
mmt [options] input |phototypesetter
```

input.out



Business Computer Systems, Inc.

subject: Work Progress Report --
Second Quarter 1984

date: December 4, 1985

from: W. Williams
XF 665414
7-123 x5398
bailey!www

Writing Assignments

I started work with the Technical Writing Staff on April 16. My writing assignments are:

- Documentation for the BCS Fortran compiler
  - I collected materials relevant to implementing programming languages on the UNIX* system.
- Documentation for the Distributed Transaction Processing System (DTPS) 2.0
  - I reviewed DTPS requirements, outstanding complaints about DTPS, and users' suggestions for improving DTPS documentation.

Other Activities

On June 16, I went to a conference, "Writing About Computers," at Acme State College.

W. Williams

* Trademark of AT&T

tbl

<TAB> means to press the TAB key.

input:

```
.TS
box, center;
c c c
l l l.
Language<TAB>Authors<TAB>Primary Use
.sp
_
APL<TAB>IBM<TAB>Mathematics, Applications
Basic<TAB>Dartmouth<TAB>Teaching, Applications
C<TAB>BTL<TAB>Systems, Applications
COBOL<TAB>Many<TAB>Business Applications
Fortran<TAB>Many<TAB>Scientific Applications
LISP<TAB>M.I.T.<TAB>Artificial Intelligence
Pascal<TAB>Stanford<TAB>Teaching, Systems
PL/1<TAB>IBM<TAB>Applications
SNOBOL4<TAB>AT&T<TAB>Applications
.TE
```

Explanation

.TS signals the beginning of a table

box, center; tells **tbl** to center the output and enclose the entire table in a box. The comma between the two words delimits each instruction. The character ";" ends global options, telling **tbl** that what follows is the format section.

c c c
l l l. makes up the format section, and tells **tbl** that there are three columns in the table. In the first row, each column should be centered, and in the second and following rows, each column should be flush left. The character "." ends the format section, telling **tbl** that what follows is text to be put in the table.

.sp places one line of space between the lines of text that it separates

_ draws a line the width of the table between the text lines that it separates

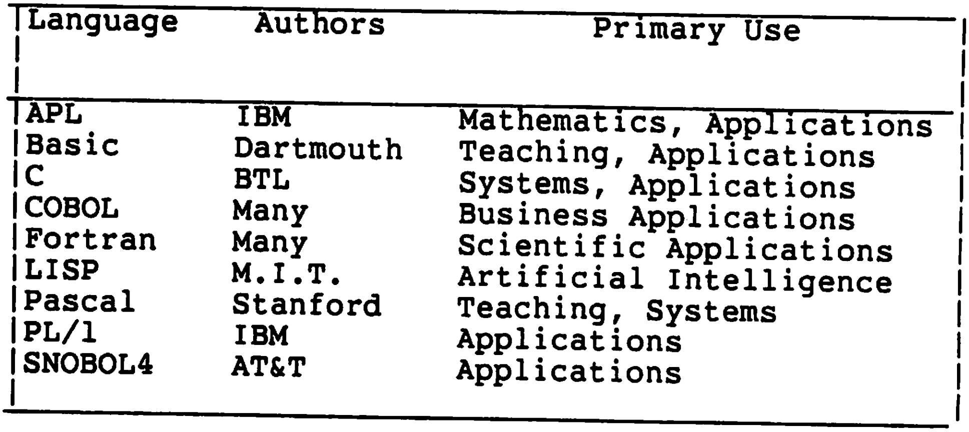
.TE signals the end of a table

NOTE "The Preprocessor **tbl**: a Tutorial" in the *User's Guide* teaches you how to prepare tables of varying degrees of complexity. The chapter "**tbl** Technical Discussion" in the *Technical Discussion and Reference Manual* comprehensively discusses this preprocessor. It also provides a manual page for the **tbl(1)** command.

Command Lines

```
tbl –TX input | nroff –mm –Tlp [options] | col > input.out
        or
tbl –TX input | nroff –mm –Tlp  [options] | col | printer
        or
mm –t –Tlp [options] input > input.out
        or
mm –t –Tlp [options] input | printer
        or
tbl input | troff –mm –Ttty_type [options] | phototypesetter
        or
mmt –t –Ttty_type [options] input | phototypesetter
```

input.out

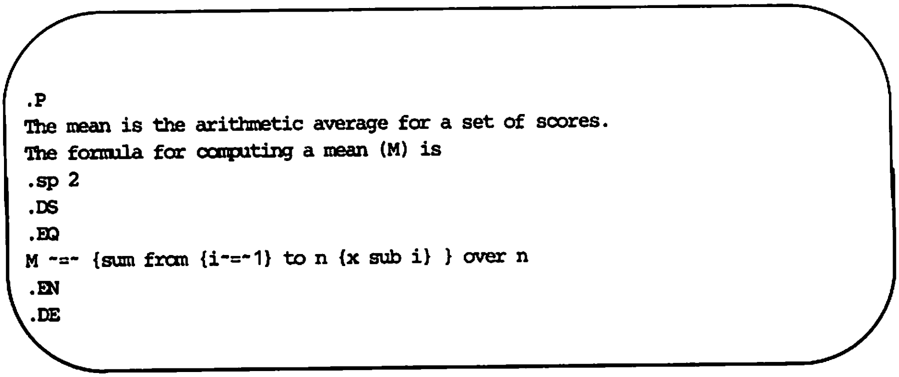


```
Language    Authors              Primary Use

APL         IBM          Mathematics, Applications
Basic       Dartmouth    Teaching, Applications
C           BTL          Systems, Applications
COBOL       Many         Business Applications
Fortran     Many         Scientific Applications
LISP        M.I.T.       Artificial Intelligence
Pascal      Stanford     Teaching, Systems
PL/1        IBM          Applications
SNOBOL4     AT&T         Applications
```

neqn/eqn

neqn prepares equations for the **nroff** formatter. **eqn** prepares them for **troff**.

input:



```
.P
The mean is the arithmetic average for a set of scores.
The formula for computing a mean (M) is
.sp 2
.DS
.EQ
M ~=~ {sum from {i~=~1} to n {x sub i} } over n
.EN
.DE
```

Explanation

.P (an **mm** macro) begins a new paragraph

.sp 2 (an **nroff** request) places two lines of space between the text it separates

.DS (an **mm** macro) starts a static display. When you put an equation in a document formatted with **mm** macros, you must put it inside a static display (shown here) or a floating display.

.EQ tells **neqn/eqn** that what follows, here

```
M ~=~ {sum from {i~=~1} to n {x sub i} } over n
```

is a displayed equation to be formatted. `sum`, `from`, `to`, `sub`, and `over` are **eqn** instructions. The character "~" translates into a space.

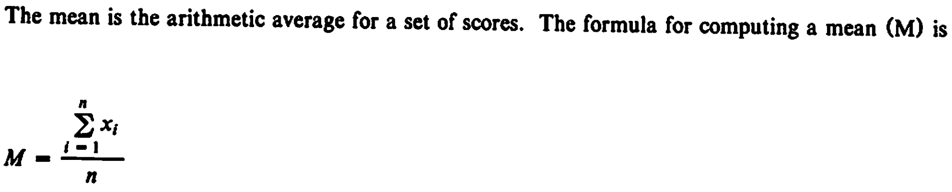
.EN	ends the displayed equation
.DE	ends the static display

The chapter titled "The Preprocessor **neqn/eqn**: a Tutorial" in the *User's Guide* teaches you about this preprocessor. The chapter "**eqn** Technical Discussion" in the *Technical Discussion and Reference Manual* comprehensively discusses its use. The *Technical Discussion and Reference Manual* also provides manual pages for **neqn(1)** and **eqn(1)**.

Command Lines

neqn input | **nroff** [*options*] > **input.out**
or
neqn input | **nroff** [*options*] | *printer*
or
eqn input | **troff** [*options*] > **input.out**
or
eqn input | **troff** [*options*] | *phototypesetter*

input.out:



The mean is the arithmetic average for a set of scores. The formula for computing a mean (M) is

$$M = \frac{\sum_{i=1}^{n} x_i}{n}$$

troff

input:

```
.rs
.sp 4
.ps 14
.vs 16
.ls 2
.P
However sophisticated your printer is, \fItroff\fR can probably handle your font
control.
By placing .ft on a line by itself before the line of text you want to change
or \f before the word or words you want to change, you can modify your typography.
.ft I
This is a line of italic made with .ft I (italic).
.br
.ft B
If you prefer a heavier emphasis, use bold roman type made with .ft B (bold).
.br
.ft H
For the clean appearance of a sans serif type, use .ft H (Helvetica).
.br
.ft R
Roman is the most popular, of course.
.P
The \f allows for a finer level of control:
The individual \fIitalic\fR, \fBbold\fR, or \fHHelvetica\fR word can be done
in-line.
.P
All printers were not made equal, so consult your systems manager to find what
is available.
.ps 10
.vs 12
.ls 1
```

Explanation

.rs	turns no-space mode off
.sp 4	places four lines of space between the lines it separates
.ps 14	sets the point size to 14 (ignored by **nroff**)
.vs 16	sets vertical spacing between output lines to 16 points
.ls 2	sets line-spacing to 2, that is, one line of space is placed between each pair of output lines.
.P	(an **mm** macro) begins a new paragraph
.ft I	changes the font to italics
.br	forces a line break
.ft B	changes the font to bold
.ft H	changes the font to Helvetica
.ft R	changes the font to roman
\f	changes font in the middle of a line, e.g., **\f1** changes font to roman wherever it appears in the text
.ps 10	changes point size to 10
.vs 12	changes vertical spacing to 12
.ls 1	Sets line spacing to 1, which is the default

NOTE

The tutorial titled "The Formatter **troff**: a Tutorial" in the *User's Guide* teaches you about local motion, font and point size changes, basic graphics, as well as the programming capabilities of **troff**. The chapter "**nroff/troff** Technical Discussion" in the *Technical Discussion and Reference Manual* comprehensively discusses **troff**. It also provides a manual page for **troff**(1).

Command Lines

troff −mm [*options*] **input** | *phototypesetter*

or

mmt [*options*] **input** | *phototypesetter*

input.out:

However sophisticated your printer is, *troff* can probably handle your font control. By placing .ft on a line by itself before the line of text you want to change or \f before the word or words you want to change, you can modify your typography. *This is a line of italic made with .ft I (italic).*

If you prefer a heavier emphasis, use bold roman type made with .ft B (bold).

For the clean appearance of a sans serif type, use .ft H (Helvetica).

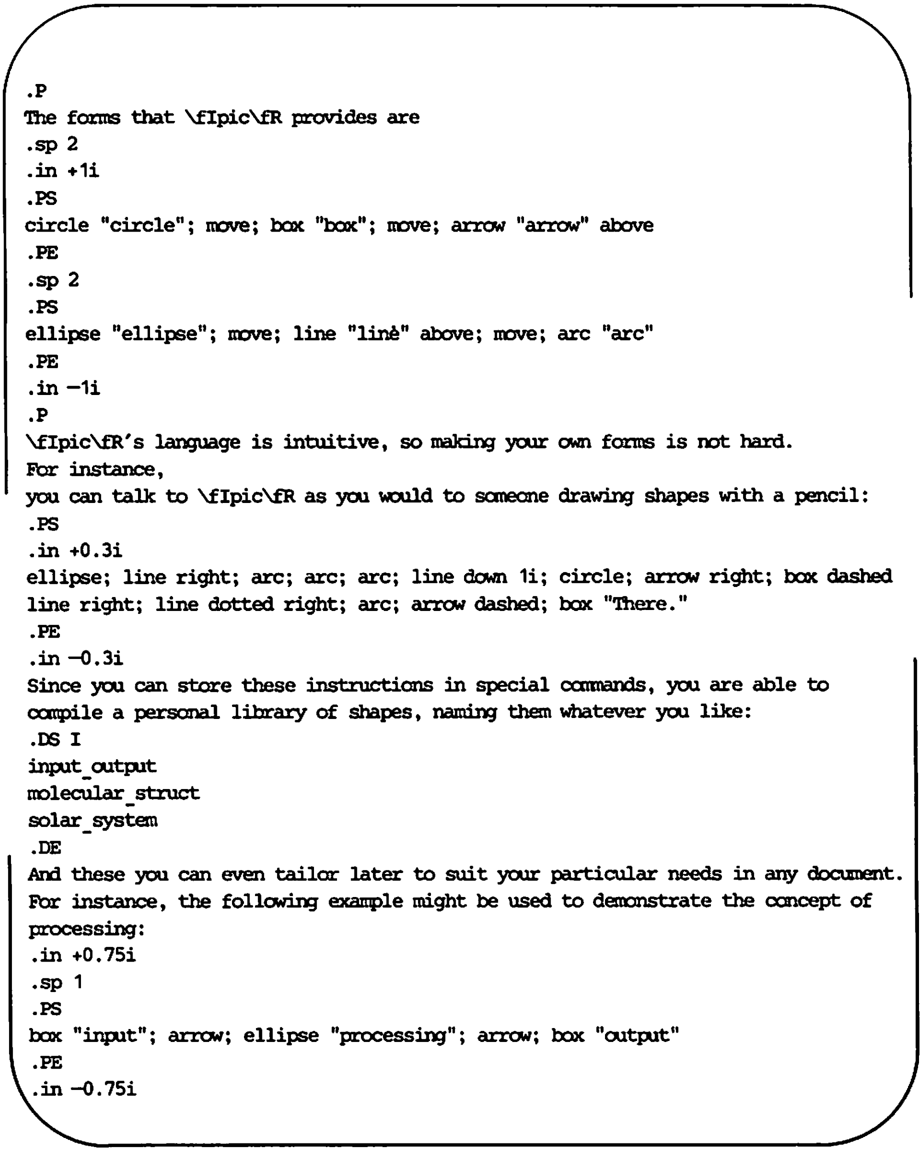
Roman is the most popular, of course.

The \f allows for a finer level of control: The individual *italic*, **bold**, or Helvetica word can be done in-line.

All printers were not created equal, so consult your systems manager to find what is available.

pic

input:



```
.P
The forms that \fIpic\fR provides are
.sp 2
.in +1i
.PS
circle "circle"; move; box "box"; move; arrow "arrow" above
.PE
.sp 2
.PS
ellipse "ellipse"; move; line "linè" above; move; arc "arc"
.PE
.in -1i
.P
\fIpic\fR's language is intuitive, so making your own forms is not hard.
For instance,
you can talk to \fIpic\fR as you would to someone drawing shapes with a pencil:
.PS
.in +0.3i
ellipse; line right; arc; arc; arc; line down 1i; circle; arrow right; box dashed
line right; line dotted right; arc; arrow dashed; box "There."
.PE
.in -0.3i
Since you can store these instructions in special commands, you are able to
compile a personal library of shapes, naming them whatever you like:
.DS I
input_output
molecular_struct
solar_system
.DE
And these you can even tailor later to suit your particular needs in any document.
For instance, the following example might be used to demonstrate the concept of
processing:
.in +0.75i
.sp 1
.PS
box "input"; arrow; ellipse "processing"; arrow; box "output"
.PE
.in -0.75i
```

Explanation

.P — (an **mm** macro) begins a new paragraph

.sp 2 — (a **troff** request) puts two lines of space between the lines of text it separates

.in +1i — indents one inch all text that follows. Other instances of **.in** in this example indent text various distances.

.PS — tells **pic** that what follows should be interpreted as instructions to draw a picture. In this example, the basic shapes that **pic** offers are drawn, labeled by their names; for example, `circle "circle"` instructs **pic** to put a circle around the word "circle." `circle`, `move`, `box`, `arrow`, and `above` are keywords for **pic**. More elaborate pictures are drawn after these shapes are labeled.

.PE — ends a picture for **pic**

.DS I — (an **mm** macro) starts an indented static display

.DE — (an **mm** macro) ends the static display

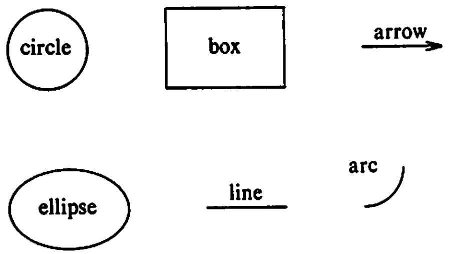
NOTE "The Preprocessor **pic**: a Tutorial" in the *User's Guide* teaches you how to draw with **pic**. The *Technical Discussion and Reference Manual* provides a manual page for the **pic**(1) command.

Command Lines

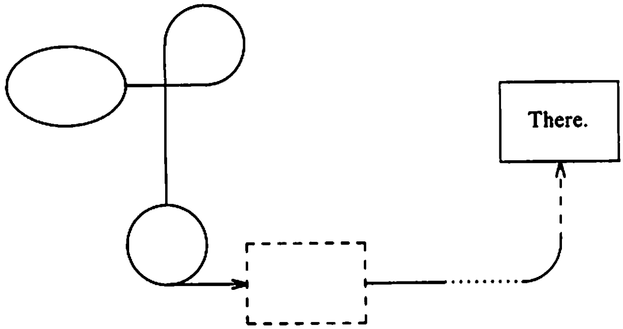
pic input | troff -mm [*options*] | *phototypesetter*
or
mmt −p [*options*] **input** | *phototypesetter*

input.out:

The forms that *pic* provides are



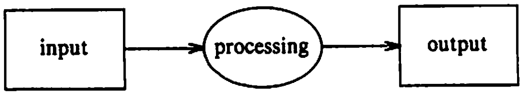
pic's language is intuitive, so making your own forms is not hard. For instance, you can talk to *pic* as you would to someone drawing shapes with a pencil:



Since you can store these instructions in special commands, you are able to compile a personal library of shapes, naming them whatever you like:

input_output
molecular_struct
solar_system

And these you can even tailor later to suit your particular needs in any document. For instance, the following example might be used to demonstrate the concept of processing:



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