

**NAME**

PRNHST – Print a histogram as a horizontal bar chart.

**SYNOPSIS**

**CALL PRNHIST(NUNIT,TITLE,LT,NOBS,PDF,LPDF,NC,MARGIN, RC)**

NUNIT	is the INTEGER*4 logical I/O unit on which to print the histogram
TITLE(LT)	is the CHARACTER*1 title of the histogram
LT	is the INTEGER*4 number of characters in TITLE
NOBS	is the INTEGER*4 number of observations in the histogram
PDF(LPDI,2)	is the REAL*8 tabular probability density of the data, such as from HIST
LPDI	is the INTEGER*4 leading dimension of PDF
NC	is the INTEGER*4 number of histogram cells used in PDF
MARGIN	is the INTEGER*4 desired width of the bar chart, in characters
RC	is the INTEGER*4 return code; see below

**DESCRIPTION**

First the routine sanity-checks its input parameters. Next it finds from PDF the extreme values of the data and of the probability density function. Then it finds a scale factor so that the longest histogram bar will fit within the MARGIN specified, and computes the lengths of the bars. Finally it constructs a format for printing the cell boundary values, prints up to 79 characters of TITLE, and prints the histogram.

**SEE ALSO**

HIST, which computes a sample probability density function from data

**DIAGNOSTICS**

These are the possible return codes.

- 0 all went well
- 1 NUNIT has a bad value
- 2 a histogram parameter has a bad value
- 3 the display margin is too narrow or too wide
- 4 format string construction failed

**LINKAGE**

gfortran source.f -L\${HOME}/lib -lmisc

**AUTHOR**

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**EXAMPLE**

```
REAL*8 PDF(6,2)
INTEGER*4 RC
NOBS=0
DO 1 I=1,6
    PDF(I,1)=DFLOAT(I)
    NOBS=NOBS+I*I
    PDF(I,2)=DFLOAT(NOBS)
1 CONTINUE
NC=5
MARGIN=50
CALL PRNHST(6,'sample output',13,NOBS,PDF,6,NC,MARGIN,RC)
STOP
END
```

When this program is compiled and run it produces the output below.

```
unix[1] a.out
```

```
sample output
1.00 .
2.00 ....
3.00 .....
4.00 .....
5.00 .....
6.00
```

```
unix[2]
```