

July 13, 1964

CTSS BULLETIN #38

New PRINTF Command for BCD Files

A. SUMMARY:

A new version of PRINTF will be available on July 17, 1964. After this date, the old PRINTF will become CTEST8 and will be removed from the system at a later date.

The new command provides more flexibility in printing BCD files. Both card images and line marked files may be printed. The user may specify which part of the file he wants to print, both vertically (by line or record number), and horizontally (by field specification).

In addition, information is available to identify hard copies: file names, user, system, date, and time.

PRINTF may be used in a chain of commands.

Formats are detailed below. However, it may be noticed that the new command produces usually the same results as the previous one, when the same formats are used.

B. FORMATS:

There are basically three groups of arguments:

PRINTF	names	lines	fields
	1st	2nd	3rd

1. File names compose the 1st group.

e.g. PRINTF ALFA FAP

2. The second group specifies which lines, or records, from the file, are to be printed.

e.g. 15 from 15 through the end
 10 TO 62 from 10 through 62
 22 THRU 27 from 22 through 27

These decimal numbers are interpreted automatically as line sequence numbers, or record numbers.

Sequence numbers are matched with the rightmost numeric fields from card images. Record numbers identify variable length records by their numerical order, starting from 1.

The mode of numbering is selected on the following basis:

- a. "Sequence numbers" are assumed, either with card images files, or line marked files, as long as lines contain 14 words of information.
- b. Reading a record with any number of words different from 14, switches to the mode "Record number". No setback is possible.
- c. Using THRU instead of TO will force the mode "Record number", for either type of files.

The second group may be omitted, and printing will start from the beginning of the file. The third group is then necessarily omitted.

3. The third group is any number of pairs of decimal numbers

$$a_1 b_1 a_2 b_2 \dots a_n b_n$$

where a_i and b_i are taken from 1 to 132.

e.g. 77 81 11 10 1 7 12 72

The printed line will be a concatenation of every field specified by its position in the record read from the file, i.e., from the a_i the character to the b_i character.

a_i and b_i may be in any order, and fields are independent from one another. A field may be partly or entirely repeated, and also printed in reverse order.

If a specification field exceeds the length of some record, the outside characters will be set blanks.

If the last b_n is omitted, it is assumed equal to a_n , i.e. a single character field.

The third group may be omitted. The command will then select a mode of printing according to the mode of numbering lines.

In "Sequence number" mode: char. 73-80, space, char. 1-72.

In "Record number" mode: char. 1 to last char.

Two lines are printed if there are more than 84 characters.

C. TITLE:

A line of information may be printed to record identification about file, user, system, date, and time.

e.g. PRINT MAD U199 3115 MAC610 FEB 29, 1968 1530.1
file user system date time

Such a line will be printed automatically if the command meets either of the following conditions:

1. second AND third group omitted
2. second group: 0 or 1 (and any valid third group)

D. BREAK:

A single push on the QUIT button will stop the printing and terminate the command. Then CHNCOM is called.