

AB44.4.2

Changing Line Lengths in Random Files.

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In a book that is both random access and compressible, the lines (and pages) may become of any length up to the physical limit when it is first written by sequential means (the only way to move the logical file end away from the position (1,1,1) where it is left by "establish"). After that, there is no way in which individual lines (or pages) can be shortened or lengthened. Implementers whose operating system provides a convenient system for doing this may care to provide an environment enquiry "clip line possible", and to implement the following "clipping" superlanguage feature.

In addition to the logical end of file pointer {10.3.1.6.cc} maintained by the implementer, let there be an additional "local logical end" pointer which points to some position in the current line and which normally points to the end of the line unless the logical end of file is in that line, in which case the two pointers coincide.

Let a procedure "clip line", of mode PROC(REF FILE)VOID, be provided whose effect, on books and channels where its use is permitted, is to set "write mood" and then to expand the current line to some physical limit (as in the pseudo comment in "put char" {10.3.3.1.b+25}) and to set the logical end to the current position. Subsequent calls of "put" within this line push the local end forward just as is done with the logical end of file in "put char" at present {10.3.3.1.b+21}. The contents of the line between the local logical end and the physical end are inaccessible (calls of the "on line end" event would be made), and calls of "space" in this area write blanks. Whenever the logical file end is within the current line, the two logical file pointers are always moved together.

As soon as the line ceases to be current (due to a call of "newline" or "set" or even "close"), the line is compressed to wherever the local logical end has now reached (or, if the book is not "compressible", it is filled with blanks to its physical end). Thus, a user who wishes to rewrite a line in the middle of his random-access file "set"s to the start of the line (or to the middle of it if he only wishes to rewrite the last part of it) and calls "clip line". He then "put"s new characters as required and in due course when he calls "newline" or "set"s elsewhere, the line will be rewritten with its new contents and (if "compressible") its new length.

Although it is not necessarily suggested that the "clip line" facility should necessarily be possible on books and channels other than those for which "compressible", "put" and "set" are all "possible", it may be observed that its properties are in fact well defined in other cases (and useful applications can even be imagined). Also, it is clear that "clip page" and "clip file" facilities could also be defined (and even implemented) in an entirely analagous manner.