FILE: DKEYDOC

Compliments of FRESS

A File Retrieval and Editing SyStem

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DISPLAY KEYWORDS

This NEWSLETTER assumes a knowledge of FRESS and of FRESS regular keywords.[1]

Display keywords are a new form of keywords that may be attached as a data field to any kind of structure except area orders. They are used to control whether or not an individual piece of structure is visible, both in online display and when Fullprinting. In the case of blocks, the display keywords also control whether the text inside the block will be visible. Display keywords and "regular" keywords are similar in many respects. However, they are motivated by different requirements and have some different effects. A discussion of these matters is in Section 4.

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[1]For a discussion of regular keywords, see FRESS Reference Manual - Structure and Comands, pp. 23-25.

2.1 KEYWORD EFFECTS

The effect of a display keyword on each kind of structure is as follows:

Display keyworded label: Display keyword governs whether label can be viewed online. Label may be retrieved even if keyword is in effect.

Display keyworded tag: Keyword governs whether tag can be seen online. Anotation keyworded request strings (SKA command) cannot take effect either online or offline unless tags can be seen.

Display keyworded reference tag: keyword governs whether reference tag can be viewed online or printed offline.

Display keyworded jump: Keyword governs whether jump can be "seen" online. Jump cannot be taken unless it can be seen. Regular keyworded jumps cannot be used for either online display or offline printing unless display keyword of that jump is "on".

Display keyworded splice: Keyword governs whether splice can be "seen" online. Splice will not take effect either in online display or offline print unless it can be seen.

Display keyworded blocks: Keyword governs whether blocks can be displayed online or printed offline. In the case of decimal blocks, a non-displayed block will cause the remaining blocks to be renumbered as though the block was not there.

2.2 COMMAND FORMATS

Commands that create structure have been changed to add display keyword parameters. The following list gives all the new formats. In general, the display keyword parameter(s) have been added at the end of the other optional parameters.[1] The display keyword parameter is indicated by <dkeys>. The following commands are in the form specified in FRESS User's Guide, p. 93, or FRESS Reference Manual - Structure and Commands, p. 38.

For labels:

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[1]Optional parameters are indicated with the superscript "°".

ML <lp>º<dkeys>º<label>

For annotation tags:

IA <lp>º<keys>º<dkeys>º<text>

MA <scope><keys>º<dkeys>º

RTA <lp1>º<keys>º<dkeys>º<lp2>

[The display keywords will be attached only to the annotation tag, not to the annotation block.]

For decimal reference tags:

MDR <lp>º<dkeys>º<n>

MDRD <lp1>º<dkeys>º<lp2>

For jumps and splices:

MJ <lp1><lp2><expl1>º<expl2>º<keys>º<dkeys1>º<dkeys2>º<vs1>º<vs2>º

MS <lp1><lp2><expl1>º<expl2>º<keys>º<dkeys1>º<dkeys2>º<vs1>º<vs2>º

[<dkeys1> are the display keywords to be attached to the jumps and splices, <dkeys2> will be attached to the pmujs and ecilpses. Note that the order of the other parameters has also been changed.]

For blocks:

IBL <lp>º<label>º<keys>º<dkeys>º<text>

MB <scope><label>º<keys>º<dkeys>º

IDB <lp>º<label>º<keys>º<dkeys>º<text>

MDB <scope><label>º<keys>º<dkeys>º

[The <dkeys> will appear only on the block start, not on the block end. This is the same format as for regular keywords on blocks.]

2.3 APPEARANCE OF DISPLAY KEYWORDS

Display keywords appear, surrounded by dollar signs, as the first data field on a piece of structure. The following list shows examples of each possible piece of structure with display keywords:

%L$dkey1$(label)

```
%T|$dkey2$"regkey"     (annotation tag)

%T$dkey3$  '3.7'     (decimal reference tag)

%J$dkey4$"regkey"explainer%%

%<$dkey6$(blocklabel)"regkey"
```

Whether or not the display keyword data field will be shown online is controlled by the viewspec settings "p" and "dk". "dk" controls the display of any keyword fields on blocks (display or regular); "p" controls the display of the display keywords. Both of these must be "on" (the default) to view the display keyword fields.[3] NOTE: "dk", and "p" govern whether keyword data fields are displayed; whether the keywords take effect is independent of the display of their data fields.

2.4 MULTIPLE KEYWORDS

It is possible to have multiple display keywords. Each keyword string can be no longer than 255 characters. Each individual keyword can be no longer than 16 characters. Keywords in a string are separated by ";". The following is a sample of a possible string: $all;ch1;music;20th century$. Using "¬" (not), "|" (or), and "&" (and), boolean display requests are possible. See Fress Reference Manual - Structure and Commands, pp. 23-25, for further information on keywords strings, and boolean requests.

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[3]For more details on viewspecs see FRESS Reference Manual - Structure and Comands, p. 28.

3 USING DISPLAY KEYWORDS

Display keywords may be used for a variety of purposes. In an online browsing system they can be used to selectively hide pieces of structure to avoid cluttering the display. In both online reading and offline printing they can be used to show alternative versions of a single document, as shown in Section 3.3.

3.1 SKD COMMAND

You may choose which pieces of structure will be visible or Fullprinted by setting a "display keyword request string". This is done using the command Set Keyword Display Request String:

SKDisplay <bool>º[<wind>º]

When a piece of structure with a display keyword string is encountered, either in online display or when Fullprinting, the keyword string is compared to <bool>. If they do not match, the piece of structure will be skipped. If the structure is a block, all text inside the block, as well as any imbedded blocks, will also be skipped. Example: If you wish to display all blocks that are concerning privacy and computers or privacy and census data, then, assuming appropriate keywords, the following command would have the desired result:

SKD/privacy&(computers|censusdata)

3.2 NOTES

Several important things should be noted:

1) If you create a piece of structure with a display keyword string without previously setting the display keyword request string to match, the newly created structure will be invisible. This can be confusing: no error message will be printed, but it will appear (incorrectly) that the command was not executed or text was deleted. To avoid this confusion, always use the SKD command to set up the appropriate display keyword request string before creating any display keyworded structure.

2) If you travel nonlinearly (for example, using a Get Label or Jump command) into a block which is protected from display by a display keyword string, the message:

   INVISIBLE TEXT

   will be printed on the terminal. You must then use the Return command, or some other nonlinear travel, to get back to displayable text.

   If you do a Get Label to a display keyworded point or block, or Jump to a display keyworded jump or pmuj and the request string does not match, the display will begin after the invisible piece of structure. In this case, no message will be printed.

3) Editing commands affect only what is displayed. Editing commands that have location pointers inside nondisplayed blocks, will not take effect. On the other hand, if an edit is performed that includes invisible text in its scope, the invisible text will also be affected by the edit (SO WATCH OUT).

4) Each display keyworded hypertext string or block should include one keyword that is on all keyworded strings and blocks. When that keyword is set, the cost of using display keywords will be negligible; editing can then be done without incurring display cost problems and without worry of editing "over" invisible text.

5) Set the proper SKD before getting a file. If no keyword is in effect, then FRESS will create an empty display buffer.[4] That is, if an entire file is covered by display keywords, but no display keyword is in effect, FRESS will, after a get file command, search the entire file for a displayable block. This search and subsequent failure consumes computer resources.

6) When using various display keywords for selective Fullprinting of portions of a file, be sure and set the display buffer at the bottom of the file before doing the SKD command. Fullprint does not use the display buffer, but the SKD command does effect the display buffer. Thus if a user is at the bottom of a file before SKD is executed, the cost of setting up a display buffer before the Fullprint will be avoided.

7) Display keyword fields (and regular keyword fields) cannot be added to structure after it has been created, but must

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[4]For information on display buffers, see FRESS User's Guide, pp. 4-7.

be inserted at the time of creation. Subsequently display keyword fields can be edited, augmented, or deleted.[5] So it is prudent when creating structure to add keyword fields if there is any possibility of subsequent use. (Those who wish to add keyword fields to previously created blocks can create a command macro which will have the same effect. For assistance in doing this, contact a member of the FRESS staff.)

3.3 SELECTIVE PRINTING

Display keywords can be used, in combination with decimal blocks, to facilitate printing of a large document in small pieces. When one is writing and editing a large document, it is generally desirable to be able to print out only those chapters which have been revised since the last printing. At the same time, if decimal blocks are included, it is desirable to have the section numbers in the partial printout match the section numbers in the full printout. The following file organization will allow this:

```
[standard format macros]
!.h1=!-s1-.
%<$1;all$!.h1=!-h1-.%>
%< '1'
%<$1;all$text in block 1, including nested blocks %>%> '1'
!.h1=!-s1-.
%<$2;all$!.h1=!-h1-.%>
%< '2'
%<$2;all$text in block 2, including nested blocks %>%> '2'
     .
     .
     .
```

The outer blocks are decimal blocks which, having no keywords, will always be included in a printout. Inside these are display keyworded blocks that control whether the text in the decimal block will be printed. Thus, specifying:

```
SKD/2
```

will cause only Section 2 text to be printed when the Fullprint command is issued. However, since the decimal block 1 will be printed, without the text inside it, Section 2 will still be numbered 2. Similarly, to print sections 2 and 4, the command would be:

```
SKD/2|4
```

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[5]For information on how to edit keyword strings see FRESS Reference Manual - Structure and Comands, p. 31.

To print all blocks and text, you would specify:

SKD/all

Although this example showed the method for printing only specified sections at the highest "chapter" level, it can be extended to control the printing and numbering of subsections as well.

In this example, there is a macro which temporarily redefines the heading level given the first decimal level. Heading level 1 is redefined to be a !-s1-. The purpose of this is to avoid many blank pages when printing just one section of the file. This format macro is followed by another which redefines heading level 1 as !-h1-. This latter macro is inside a block that is keyworded the same as the text of the block that follows it. Thus when that block is printed, level 1 blocks will start a new page. The "m" option of the Fullprint command must be used for these to take effect.[6]

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[6]For an explanation of the "m" option see FRESS Reference Manual - Structure and Comands, pp. 14, 15.

4 DISPLAY KEYWORDS VS. REGULAR KEYWORDS

In building an online retrieval system, either regular keywords or display keywords can be used to perform some of the same functions in a file. The purpose of this section is to specify the trade-offs so that users may make an informed choice.

4.1 EXTERNAL DIFFERENCES

Regular keywords allow the user to retrieve blocks by using the BTContinuous and BTDiscrete commands. FRESS retrieves by constructing a list of all the blocks which have keywords matching the request string and then displaying them in sequence (with BTC) or one at a time upon request (with BTD and TR). The order of items in the trail is determined by the order in which they were inserted in the file and not their current file location.

The block trail with regular keywords was designed for pulling selected, related items from an otherwise disorganized file to create a "new" ordered file. For example, the Career Development Office at Brown uses regular keyworded blocks to retrieve names of individuals coded by job preferences.

Display keywords allow the user to selectively view those blocks that have keywords matching the request string specified with the SKDisplay command. Unlike regular keyworded block trails, the file is scanned sequentially as it is displayed online or Fullprinted. When a block start is encountered, the accompanying keywords are checked against the request string. If they match, the block is displayed. If they do not match, the other end of the block is retrieved and display continues after the block end. The order of items displayed is, therefore, determined by their current file location.

Display keywords were designed to selectively display portions of an otherwise organized file. For example, the Poetry course taught with the aid of FRESS (Brown's English 16), used display keywords to govern which portions of online material was available to the students at various times in the course.

Differences from the perspective of function include:

1) When BTC or BTD is used to retrieve blocks they are retrieved in the order in which the blocks were added to the file. Display keyworded blocks, on the other hand, are displayed in the order in which they occur in the file.

2) There is an internal limit (currently set at 100) on how many blocks can be retrieved using BTC and BTD. There is no such limit with display keywords because there is no list made of the blocks satisfying the request.

3) After doing a retrieval with either BTC or BTD you may TRAIL through the list (TRAIL means skip to the next block start in the block trail). This can be useful if the blocks contain much text and you wish only to scan the entries. When using display keywords, you must scroll or locate through all the text in the blocks as well (although this can be circumvented by Jumping on the block start to get to the other end).

4) Blocks without display keywords will always be displayed. Blocks without regular keywords, however, can never be retrieved with BTC or BTD.

5) Currently, a Fullprint will not follow a block trail set up with BTC or BTD. Until this is changed, display keywords must be used for selecting particular blocks for Fullprinting.

6) On Jumps and Annotation Tags display and regular keywords have completely different functions. The function of the display keyword is to determine whether or not the structure is to be displayed online. The regular keyword determines under what conditions the jump is to be taken or the annotation to be displayed automatically (online or Fullprinting offline). These functions are not, however, independent of each other. If the display keyword is not "on", the jump is not "seen" by FRESS and so cannot be automatically taken.

4.2 INTERNAL DIFFERENCES

Although the crossover points are by no means clear, something should be said about efficiency considerations. BTC and BTD can result in a long list-compilation process if the request string has a complex combination of keywords or each keyword specified is associated with many blocks. However, once this compilation is completed, display of the trail is simple and requires little execution time.

The use of display keywords causes little work in advance of the actual display. However, the display process itself is time-consuming. Each time a block is encountered, its keyword string must be compared to the request string. If the strings do not match, time is spent moving the display point after the block end. This time is not in itself significant, but if multiplied by many blocks with unsatisfied keyword strings, it can become very

time-consuming. Similarly, moving the display to the beginning of the next block in a trail uses some small amount of execution time; if the blocks being displayed are small and therefore such retrievals are done frequently, the execution time used may become significant.

4.3 FOR INSTANCE

For selective offline printing, display keywords must be used. However, if the SKD command is invoked while the user is located at the bottom of the file, then there are no cost or display disadvantages.

For selective online viewing of a file with a large number of blocks, each having a small amount of material (online bibliographies or keyworded lists of names), block trails with regular keywords are the best choice.

For a bibliography to be displayed both online and offline, both display and regular keywords should be installed.

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