Identification

The EPL run-time routine, index_
index_$indexc_,
index_$indexb_

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Purpose

Index_ implements the PL/I function <u>index</u> where the function
value=integer=

   a) the index of the first element of the first argument
       such that starting at this element, the second
       argument appears as a substring
   b) 0, if no·such argument satisfying (a) exists or if
       either of the arguments is of length 0.

For indexc_, an element is 9 bits.
For indexb_, an element is 1 bit.

Usage

The two possible calls are:

            call index_$indexc_ (c1,c2,i)
            call index_$indexb_ (b1,b2,i)

c1 and c2 are character strings, varying or non-varying
b1 and b2 are bit strings, varying or non-varying
i is a binary integer

The statement

            i = index (a,b)

is implemented in EPL by one of the following calls:

            call stgop_$ixcs_(a,b,i);

            call stgop_$ixbs_(a,b,i);

(See BN.7.09 for a description of stgop_$ixcs_ and stgop_$ixbs_.)

Implementation

There are two separate substring search loops:

1. For substrings of < 36 bits.
    Here only part of a word is compared each time.
    The machine operation CMK is used to avoid loading
    and shifting for every element. Because of the
    overlap this loop is much slower than 2.

2. For substrings of $\geq$ 36 bits.
    A search is made for a match on the first 36 bits
    of the substring. The accumulator and quotient
    registers are fully utilized for the comparisons.
    When a match is found, if the substring = 36 bits,
    the match is complete. If the substring > 36 bits,
    a dummy specifier is written for the first argument
    of the substring. Then strcmp_$eqb_ (See BN.7.12
    for strcmp_) is called with these 2 arguments. If
    the strings are equal, the match is complete. If
    they are not equal, the search in the loop is resumed.

Errors

If either of the arguments is not a string, stops with
oct 0.