The two attached MSPM sections are an attempt to solve some of the recurring problems involved in passing strings as arguments between procedures, especially when conversion from varying to non-varying strings (or vice-versa) results in extreme inconvenience on the part of the programmer.
Identification

Length function for PL/I strings
lg$bs, lg$cs, lg$max_bs, lg$max_cs
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Purpose

The functions described below obtain the current or maximum length of PL/I strings which have been passed as arguments to a procedure. They differ from the generic length functions in PL/I by performing properly when string parameters do not quite match between caller and callee; i.e., they permit varying strings to be passed to procedures in which they are declared non-varying, and vice-versa. The functions also provide the equivalent of a max_length function, to be used when one needs to know not the current length but the maximum length of a varying string. These functions are coded in EPLBSA as one segment; they could be replaced by equivalent changes to the length built-in function in EPL (and a new function max_length) to execute the code in line.

Usage and Implementation

dcl x {bit, char}(*), /*argument of procedure*/
   (lg$bs, lg$cs, 
    lg$max_cs, lg$max_cs)
entry ext fixed bin(17), 
   (n, max_n) fixed bin(17);

n = lg$ {bs, cs} (x)
max_n = lg$ max bs, max cs (x);

The functions examine the dope for the string x (BP.2.02) and extract the requisite length information: If x is non-varying, then the pairs of functions (lg$bs, lg$max_bs) and (lg$cs, lg$max_cs) return identical values. If x is a varying string, then lg$bs and lg$cs return the "current length" of x, while lg$max bs and lg$max cs return the maximum length of x. For the "cs" entries, the length in bits is divided by 9 before the value is returned.
Error Checking

If invalid dope is passed for the string x, an error code of 1 is recorded using the standard error procedures of BY.11, and "lg_err" is signalled. For the "cs" entries, an error code of 2 is recorded if there is a remainder after the division and "lg_err" is signalled.