UNSTAK

This subroutine is used to unstack items from the top of the stack until an item is reached whose stack priority SPR, is less than the value given by the parameter, or until the stack is empty. In general, items are unstacked directly into the object program (in some cases after extensive typechecking) with the following exceptions:

(i)   If the stack priority SPR of the current item is 12, the variable P (set up by TAKE or EXP) determines whether to generate INDA or INDR.

(ii)   If the SPR of the current item is 8 (i.e. it is a relational operator) the parameter should not be 8 as this would mean an incorrect use of relational operators, e.g:

$$x < y + z < 4$$

(iii) If the top of the stack is else E, TYPBOX and LOKTYP must be checked to produce the special case;

        UJ   PP+2
        Update ADDRES
        I → R1

when LOKTYP is zero and the else part turns out to be real. (This is a consequence of the single pass technique).

(iv)   Another special case is where the delimiter from the stack is :=, the necessary conversion may be R→I if the left hand side is integer.

(v)   Where the delimiter from the stack is an arithmetic or relational operator, further typechecking is necessary, and special primitives may be compiled, as in the cases of integer ↑ 2 or Real ↑ integer.

ERRORS

FAIL 34;   incorrect use of relational operator.

FAIL 64;   illegal use of subscript variable.

FAIL 104; <u>Div</u> has real operand.