IUCOMP	CERN Program Library	V304

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Submitter :
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Search a Vector for a Given Element

These routines all search through a vector for a given element. The calling sequences and the default returns are different.

Structure:

`FUNCTION` subprograms
User Entry Names: `IUCOMP`, `IUCOLA`, `IUFIND`, `IUFILA`, `IUHUNT`, `IULAST`

Usage:

`IUCOMP(IT,IVEC,N)` or `IUCOLA(IT,IVEC,N)`

returns the relative address in the array `IVEC` of the first (or the last) word which is equal to `IT`, or zero if `IT` is not contained in `IVEC(1), ... ,IVEC(N)` or if $\mathtt{N} = 0$.

`IUFIND(IT,IVEC,JL,JR)` or `IUFILA(IT,IVEC,JL,JR)`

returns the relative address in the array `IVEC` of the first (or the last) element between `IVEC(JL)` and `IVEC(JR)` ($\mathtt{JL} \leq \mathtt{JR}$) which equals `IT`, or $\mathtt{JR} + 1$ if `IT` is not contained in `IVEC(JL),IVEC(JL+1), ... ,` `IVEC(JR)` or if $\mathtt{JL} > \mathtt{JR}$.

`IUHUNT(IT,IVEC,N,INC)`

returns the relative address of the first word among `IVEC(1),IVEC(INC+1),IVEC(2*INC+1), ...` of array `IVEC` (the search does not go beyond `IVEC(N))` which equals `IT`, or zero if `IT` is not found or if $\mathtt{N} = 0$.

`IULAST(IT,IVEC,N)`

returns the relative address of the last word which, in the array `IVEC` of `N` elements, is not equal to `IT`, or zero if $\mathtt{N} = 0$ or if all elements in `IVEC` equal `IT`.

Notes:

`IVEC` and `IT` above may be of type `INTEGER` or `REAL`, but the comparison is done in type `INTEGER`.

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