VIII.3.3-LOOKUP3 3 VARIABLE TABLE LOOKUP OPERATION

Identifier: LOOKUP3

Operation Number: 53

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Parameter Array: The FORTRAN identifier used for the parameter array
for this Operation is P. The contents of the P array are:

Position	Contents
1	Operation version number (integer)
2-19	General name or title or description
20	Number of P array positions used (integer)
21-22	First independent argument time series identifier (x)
23	First independent argument data type code
24	First independent argument data time interval
25-26	Second independent argument time series identifier (z)
27	Second independent argument data type code
28	Second independent argument data time interval
29-30	Dependent argument time series identifier (y)
31	Dependent argument data type code
32	Dependent argument time interval
33	Units of 'Z-segment' array:
	'ENGL' = English
	'METR' = metric (default)
34	Number of elements in the 'Z-segment' array

Note that, internal to the operation, the number of data values per time step (for Multi Value time step data types only) will be held in the decimal portion of P(24) and P(28).

The following contents define the relationships between the 2 independent arguments and the dependent argument. This sequence of Z, X1, Y1, X2, Y2, X3 and Y3 values define the 'Z-segment'. A minimum of 2 points of first and second independent arguments are required for each dependent argument.

34+   Z - second independent argument

35+   X1 - first independent argument, first value

36+   Y1 - dependent argument, first value

37+   X2 - first independent argument, second value

38+   Y2 - dependent argument, second value

39+   X3 - first independent argument, third value

40+   Y3 - dependent argument, third value

The total number of positions required in the P array is 33 plus the number of points in the 'Z-segment' array.

Subroutine Names and Functions:

Subroutine	Function
PIN53	Input values, makes checks and stores values in P array
TAB53	Make entries into the Operations Table
PRP53	Print information stored in the P array
PUC53	Punch input cards
EX53	Execute the Operation

Subroutines PIN53, PRP53 and PUC53 have the standard argument lists as described in Section VIII.4.3.

SUBROUTINE EX53 (P,D1X,D2Z,SY)

Function

This is the execution control routine for Operation LOOKUP3.

Argument List

Argument	Input/ Output	Type	Dimension	Description
P	Input	R*4	Variable	Parameters, options and time series information
D1X	Input	R*4	Variable	First independent variable time series values
D2Z	Input	R*4	Variable	Second independent variable time series values
SY	Output	R*4	Variable	Resultant dependent variable time series values

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SUBROUTINE TLU53 (A1,A2,TABLE,R)
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Function

Given the first independent argument (A1), second independent argument
(A2) and a table of family of curves (array TABLE), this routine
interpolates for a dependent result (R).

Argument List

Argument	Input/ Output	Type	Dimension	Description
A1	Input	R*4	1	First independent value
A2	Input	R*4	1	Second independent value
T	Input	R*4	Variable	3-variable relationship ('Z-segment' array)
R	Output	R*4	1	Dependent result

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SUBROUTINE TAB53 (TO,LEFT,IUSET,NXT,LPO,PO,LCO,TS,MTS,LWORK,IDT)
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Identification: This is the Operations Table entry routine for
Operation LOOKUP3.

Argument List: The arguments for this subroutine are similar to the
arguments for the Operations Table entry subroutines for other
Operations. A description of the arguments is contained in Section
VIII.4.2-TAB.

Operations Table Array: The contents of the TO array are:

Position	Contents
1	The number of this Operation
2	Location of next Operation in T array
3	Location of parameters in P array
4	Location of carryover in C array
5	Location of first independent argument time series in D array
6	Location of second independent argument time series in D array
7	Location of dependent argument time series in D array