

V.3.3-LOOKUP 2 VARIABLE TABLE LOOKUP OPERATION

Identifier: LOOKUP

Application: All programs

Description: This Operation computes output time series values based on the input time series value and a table that defines the relationship between the two time series.

Uses of this Operation can include the computation of channel losses in a reach of a river where the losses are not a constant percentage of flow or the determination of velocity for a give discharge.

Allowable Data Time Intervals: 1, 2, 3, 4, 6, 8, 12 and 24 hours

Time Series Used: The input time series must have been previously defined and can have any units or data type. The output time series can also be of any units and data type but must have the same time interval as the input time series. If the input time series allows missing values, the output time series must also allow missing values.

Input Summary: The card input for this Operation is as follows:

<u>Card</u>	<u>Format</u>	<u>Columns</u>	<u>Contents</u>
1	I5	1-5	Number of pairs of table lookup points
	4X,I1	10	Input units indicator: 0 = English units -1 = Metric units
2	2A4	1-8	Input time series identifier
	2X,A4	11-14	Input time series data type
	4X,I2	19-20	Input time series data time interval
3	2A4	1-8	Output time series identifier
	2X,A4	11-14	Output time series data type
	4X,I2	19-20	Output time series data time interval
4	6F12.4	1-12 13-24 25-36 37-48 49-60	Points which make up the table - corresponding pairs of input and output values with input values in increasing order

<u>Card</u>	<u>Format</u>	<u>Columns</u>	<u>Contents</u>
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Repeat card 4 for additional points.

Sample Input and Output: Sample input is shown in Figure 1. Sample output from the parameter print routine is shown in Figure 2. There is no output from the execution routine.

Error and warning messages: The error and warning messages generated by this Operation and the corrective action to take when they occur are:

1. **\*\*ERROR\*\*** NUMBER OF POINTS IN THE TABLE LOOKUP IS XX  
IT MUST BE GREATER THAN 1.

Action: Specify the number of points in the lookup table to be at least 2.

2. **\*\*ERROR\*\*** UNITS FLAG IS XX  
IT MUST BE 0 OR 1.

Action: Specify a units flag of 0 or 1.

3. **\*\*ERROR\*\*** INPUT TIME SERIES TIME INTERVAL IS XX.  
OUTPUT TIME SERIES TIME INTERVAL IS YY.  
THESE MUST BE THE SAME.

Action: Select input and output time series with the same time interval.

Carryover Transfer Rules: There is no carryover for this Operation.

Punch Card Limitations: None

Figure 1. Sample Card Input For Operation LOOKUP

- Column -															
5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80
48	0														
BMDWE	PELV	24													
BMDWE	RSTO	24													
	1458.	0.				1467.		8980.			1475.			17850.	
	1483.	27530.				1491.		38110.			1499.			49610.	
	1507.	62300.				1515.		76300.			1523.			91900.	
	1531.	109200.				1539.		128200.			1547.			149100.	
	1549.	154600.				1551.		160200.			1553.			165900.	
	1555.	171900.				1557.		178000.			1559.			184000.	
	1561.	190100.				1563.		196600.			1565.			202700.	
	1567.	209700.				1569.		216300.			1571.			222800.	
	1573.	229900.				1575.		237000.			1577.			244000.	
	1579.	251600.				1581.		258600.			1583.			266200.	
	1585.	273800.				1587.		281300.			1589.			288900.	
	1591.	297000.				1593.		305000.			1595.			313100.	
	1597.	321600.				1599.		329200.			1601.			337300.	
	1603.	345850.				1605.		354400.			1607.			363000.	
	1609.	371570.				1611.		380100.			1613.			389200.	
	1615.	398300.				1617.		407400.			1619.			416440.	

Figure 2. Sample Output From Operation LOOKUP Print Parameter Routine

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WGRFC TABLE LOOKUP OPERATION
NUMBER OF TABLE LOOKUP POINTS= 48.
INPUT TIME SERIES ID=BMDWE      TYPE=PELV TIME INT= 24. DATA UNITS=FT
OUTPUT TIME SERIES ID=BMDWE     TYPE=RSTO TIME INT= 24. DATA UNITS=CFSD
      INPUT          OUTPUT
      POINTS        POINTS
1458.000          .000
1467.000          8980.000
1475.000          17850.000
1483.000          27530.000
1491.000          38110.000
1499.000          49610.000
1507.000          62300.000
1515.000          76300.000
1523.000          91900.000
1531.000          109200.000
1539.000          128200.000
1547.000          149100.000
1549.000          154600.000
1551.000          160200.000
1553.000          165900.000
1555.000          171900.000
1557.000          178000.000
1559.000          184000.000
1561.000          190100.000
1563.000          196600.000
1565.000          202700.000
1567.000          209700.000
1569.000          216300.000
1571.000          222800.000
1573.000          229900.000
1575.000          237000.000
1577.000          244000.000
1579.000          251600.000
1581.000          258600.000
1583.000          266200.000
1585.000          273800.000
1587.000          281300.000
1589.000          288900.000
1591.000          297000.000
1593.000          305000.000
1595.000          313100.000
1597.000          321600.000
1599.000          329200.000
1601.000          337300.000
1603.000          345850.000
1605.000          354400.000
1607.000          363000.000
1609.000          371570.000
1611.000          380100.000
1613.000          389200.000
1615.000          398300.000
1617.000          407400.000
1619.000          416440.000
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