### Functions

Note: an error will be generated if a function call is not properly formed or if the parameters are of an incorrect type or an incorrect value.

#### String and Character Functions

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>LEFT</strong> (ThisString : STRING, x : INTEGER) RETURNS STRING</td>
<td>returns leftmost ( x ) characters from ThisString</td>
<td>LEFT(&quot;ABCDEFGH&quot;, 3) returns &quot;ABC&quot;</td>
</tr>
<tr>
<td><strong>RIGHT</strong> (ThisString : STRING, x : INTEGER) RETURNS STRING</td>
<td>returns rightmost ( x ) characters from ThisString</td>
<td>RIGHT(&quot;ABCDEFGH&quot;, 3) returns &quot;FGH&quot;</td>
</tr>
<tr>
<td><strong>MID</strong> (ThisString : STRING, x : INTEGER, y : INTEGER) RETURNS STRING</td>
<td>returns a string of length ( y ) starting at position ( x ) from ThisString</td>
<td>MID(&quot;ABCDEFGH&quot;, 2, 3) returns &quot;BCD&quot;</td>
</tr>
<tr>
<td><strong>LENGTH</strong> (ThisString : STRING) RETURNS INTEGER</td>
<td>returns the integer value representing the length of ThisString</td>
<td>LENGTH(&quot;Happy Days&quot;) returns 10</td>
</tr>
</tbody>
</table>

**LCASE** (ThisChar : CHAR) RETURNS CHAR
returns the character representing the lower-case equivalent of ThisChar
Non upper-case alphabetic characters are returned unchanged.
Example: LCASE('W') returns 'w'

**UCASE** (ThisChar : CHAR) RETURNS CHAR
returns the character representing the upper-case equivalent of ThisChar
Non lower-case alphabetic characters are returned unchanged.
Example: UCASE('a') returns 'A'

**TO_UPPER** (ThisString : STRING) RETURNS STRING
returns a string formed by converting all characters of ThisString to upper case.
Example: TO_UPPER("Error 803") returns "ERROR 803"

**TO_LOWER** (ThisString : STRING) RETURNS STRING
returns a string formed by converting all characters of ThisString to lower case.
Example: TO_LOWER("JIM 803") returns "jim 803"

**NUM_TO_STR** (x : <datatype1>) RETURNS <datatype2>
returns a string representation of a numeric value.
Note: \(<\text{datatype1}>\) may be REAL or INTEGER, \(<\text{datatype2}>\) may be CHAR or STRING
Example: NUM_TO_STR(87.5) returns "87.5"

**STR_TO_NUM** (x : <datatype1>) RETURNS <datatype2>
returns a numeric representation of a string.
Note: \(<\text{datatype1}>\) may be CHAR or STRING, \(<\text{datatype2}>\) may be REAL or INTEGER
Example: STR_TO_NUM("23.45") returns 23.45
IS_NUM(ThisString : <datatype>) RETURNS BOOLEAN
returns the value TRUE if ThisString represents a valid numeric value.
Note: <datatype> may be CHAR or STRING
Example: IS_NUM("-12.36") returns TRUE

ASC(ThisChar : CHAR) RETURNS INTEGER
returns an integer value (the ASCII value) of character ThisChar
Example: ASC('A') returns 65, ASC('B') returns 66 etc.

CHR(x : INTEGER) RETURNS CHAR
returns the character whose integer value (the ASCII value) is x
Example: CHR(65) returns 'A', CHR(66) returns 'B' etc.

**Numeric Functions**

INT(x : REAL) RETURNS INTEGER
returns the integer part of x
Example: INT(27.5415) returns 27

RAND(x : INTEGER) RETURNS REAL
returns a real number in the range 0 to x (not inclusive of x).
Example: RAND(87) could return 35.43

**Date Functions**

Note: date format is assumed to be DD/MM/YYYY unless otherwise stated.

DAY(ThisDate : DATE) RETURNS INTEGER
returns the current day number from ThisDate
Example: DAY(04/10/2003) returns 4

MONTH(ThisDate : DATE) RETURNS INTEGER
returns the current month number from ThisDate
Example: MONTH(04/10/2003) returns 10

YEAR(ThisDate : DATE) RETURNS INTEGER
returns the current year number from ThisDate
Example: YEAR(04/10/2003) returns 2003

DAYINDEX(ThisDate : DATE) RETURNS INTEGER
returns the current day index number from ThisDate where Sunday = 1, Monday = 2 etc.
Example: DAYINDEX(12/05/2020) returns 3

SETDATE(Day, Month, Year : INTEGER) RETURNS DATE
returns a variable of type DATE with the value of <Day>/<Month>/<Year>
Example: SETDATE(26, 10, 2003) returns a date corresponding to 26 October 2003

TODAY() RETURNS DATE
returns a variable of type DATE corresponding to the current date.
Text File Functions

EOF(FileName : STRING) RETURNS BOOLEAN
returns TRUE if there are no more lines to be read from file FileName
Note: the function will generate an error if the file is not already open in READ mode.

Operators

Note: an error will be generated if an operator is used with a value or values of an incorrect type.

<table>
<thead>
<tr>
<th>Operator</th>
<th>Description</th>
<th>Example</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>&amp;</td>
<td>concatenates (joins) two strings</td>
<td>&quot;Summer&quot; &amp; &quot; &quot; &amp; &quot;Pudding&quot; evaluates to &quot;Summer Pudding&quot;</td>
<td>may also be used to concatenate a CHAR with a STRING</td>
</tr>
<tr>
<td>AND</td>
<td>performs a logical AND on two Boolean values</td>
<td>TRUE AND FALSE evaluates to FALSE</td>
<td></td>
</tr>
<tr>
<td>OR</td>
<td>performs a logical OR on two Boolean values</td>
<td>TRUE OR FALSE evaluates to TRUE</td>
<td></td>
</tr>
<tr>
<td>NOT</td>
<td>performs a logical NOT on a Boolean value</td>
<td>NOT TRUE evaluates to FALSE</td>
<td></td>
</tr>
<tr>
<td>MOD</td>
<td>finds the remainder when one number is divided by another</td>
<td>10 MOD 3 evaluates to 1</td>
<td></td>
</tr>
<tr>
<td>DIV</td>
<td>finds the quotient when one number is divided by another</td>
<td>10 DIV 3 evaluates to 3</td>
<td></td>
</tr>
</tbody>
</table>

Comparison Operators

<table>
<thead>
<tr>
<th>Operator</th>
<th>Description</th>
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</tr>
</thead>
<tbody>
<tr>
<td>=</td>
<td>used to compare two items of the same type</td>
<td>returns TRUE if the condition is true, otherwise returns FALSE</td>
<td></td>
</tr>
<tr>
<td>&gt;</td>
<td>Notes:</td>
<td>may be used to compare types REAL and INTEGER</td>
<td></td>
</tr>
<tr>
<td>&lt;</td>
<td>may be used to compare types CHAR and STRING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;=</td>
<td>case sensitive when used to compare types CHAR or STRING</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;=</td>
<td>cannot be used to compare two records</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;&gt;</td>
<td>Examples:</td>
<td>&quot;Program&quot; = &quot;program&quot; evaluates to FALSE</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Count = 4 evaluates to TRUE when variable Count contains the value 4</td>
<td></td>
</tr>
</tbody>
</table>

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