

SystemFunctions

The MRQL System Functions

Infix arithmetic operators: +, -, *, /, %, <, <=, >, >=

Constants: PI

In the following system functions, a stands for any type, numeric stands for any numerical value, and all functions on bags can be applied to other collections types too.

Name	Input	Output	Description
=	(a,a)	boolean	equality (infix)
<>	(a,a)	boolean	not equal (infix)
+	(string,string)	string	string concatenation (infix)
+	(bag(a),bag(a))	bag(a)	bag union (infix)
..	(long,long)	bag(long)	a list of long integers from min to max (infix)
min	(numeric,numeric)	numeric	the minimum numerical value
max	(numeric,numeric)	numeric	the maximum numerical value
abs	numeric	numeric	the absolute value
log	numeric	float /double	natural logarithm
exp	numeric	float /double	e raised to the power of the value
pow	(double,double)	double	raise to the power
round	float	int	rounding a float into an integer
round	double	long	rounding a double into a long
@	double	double	where @ is a math function from Java Math package (sin, cos, tan, asin, acos, atan, sqrt, ceil, floor, rint)
toShort	string	short	convert a string to a short
toInt	string	int	convert a string to an int
toLong	string	long	convert a string to a long
toFloat	string	float	convert a string to a float
toDouble	string	double	convert a string to a double
toBool	string	boolean	convert a string to a boolean
string	a	string	convert any MRQL type to a string
contains	(string,string)	boolean	true if the first string contains the second string
length	string	int	string size
substring	(string,int,int)	string	substring from beginIndex to endIndex
split	(string,string)	string	Splits this string around matches of the given regular expression
trim	string	string	Returns a copy of the string, with leading and trailing whitespace omitted
replace	(string,string, string)	string	Replaces each substring of this string that matches the literal target sequence with the specified literal replacement sequence
replaceAll	(string,string, string)	string	Replaces each substring of this string that matches the given regular expression with the given replacement
replaceFirst	(string,string, string)	string	Replaces the first substring of this string that matches the given regular expression with the given replacement
startsWith	(string,string)	boolean	Tests if this string starts with the specified prefix
toLowerCase	string	string	Converts all of the characters in this String to lower case
toUpperCase	string	string	Converts all of the characters in this String to upper case
count	bag(a)	long	the number of elements in the bag
sum	bag(numeric)	numeric	sum of all values
max	bag(numeric)	numeric	maximum of all values
min	bag(numeric)	numeric	minimum of all values
avg	bag(numeric)	float /double	average of all values
some	bag(boolean)	boolean	true if any value in the bag is true
all	bag(boolean)	boolean	true if all the values in the bag are true
exists	bag(a)	boolean	true if the bag is not empty

member	(a,bag(a))	boolean	true if the element is a member of the bag
union	(bag(a),bag(a))	bag(a)	bag union (infix)
intersect	(bag(a),bag(a))	bag(a)	bag intersection (infix)
except	(bag(a),bag(a))	bag(a)	bag difference (infix)
text	XML	string	the text content of an XML node
text	list(XML)	string	the concatenated text content of an XML sequence
tag	XML	string	the tagname of an XML element node
random	int	int	return a random number between 0 and the argument - 1 (an impure function))
inv	a	Inv(a)	invert the total order <= of the value