

STRING FUNCTIONS

(string<? a b) returns #true if string a comes before string b, alphabetically; otherwise returns #false.
(string>? a b) returns #true if string a comes after string b, alphabetically; otherwise returns #false.
(string=? s t) returns #true if strings s and t are identical, and #false otherwise.
(string? x) returns #true if x is a Str, and #false otherwise.
(string-length s) return the number of characters in s.
(string->number s) returns the number corresponding to string s, or #false if s doesn't contain a number.
(number->string n) return a Str containing the digits of n.
(string-append s t) return a (Str) containing all the characters in
(substring s a b) returns a string consisting of the characters in s from positions a to b - 1, inclusive.
(substring s a) returns a string consisting of the characters in s from positions a to the end of the string s.
(string->list s) returns the list of characters in string s.
(list->string loc) returns the string corresponding to the list of characters loc.

LIST FUNCTIONS

(cons v lst) constructs a list with first element v followed by list lst.
(empty? lst) returns #true if lst is empty, and #false otherwise.
(first lst) returns the first element in the nonempty list lst.
(rest lst) returns the rest of the nonempty list lst.
(length lst) returns the number of elements in the list lst.

OTHER FUNCTIONS

(abs x) returns x if $x \geq 0$, and $-x$ otherwise.
(equal? x y) returns #true if x and y are equal, #false otherwise.
(= x y) returns #true if numbers x and y are equal, #false otherwise. It is an error if either parameter is not a number.
(expt x y) returns x^y .
(even? n) returns #true if n is even and #false if n is odd. Note 0 is even.
(odd? n) returns #true if n is odd and #false if n is even.
(integer? n) returns #true if n is an integer, #false otherwise.
(max x y) returns the larger of x and y.
(min x y) returns the smaller of x and y.
(zero? x) returns #true if x is 0 and #false otherwise.
(negative? n) returns #true if a number n is less than 0, and #false if it is greater or equal to 0.
(positive? n) returns #true if a number n is greater than 0, #false if it is less than or equal to 0.
(quotient m d) returns the quotient (integer part) when m is divided by d.
(remainder m d) returns the remainder when m is divided by d.

TESTING FUNCTIONS

(check-expect act exp) tests whether act and exp are equal.
(check-within act exp tol) tests whether $|\text{act} - \text{exp}| \leq \text{tol}$

HIGHER ORDER FUNCTIONS

(map F (list x0 x1 x2 ... xn)) => (list (F x0) (F x1) (F x2) ... (F xn))
(foldr F base (list x0 x1 x2 ... xn)) => (F x0 (F x1 (F x2 ... (F xn base))))
(filter F L) return a list containing all values xi in L for (F xi) returns #true.