

Numbers

| | |
|---------------------------------------|---|
| <code>parse-integer</code> | Parses an integer from a string |
| <code>floor, ceiling</code> | Truncates toward negative/positive infinity |
| <code>round</code> | Rounds to the nearest integer |
| <code>mod, rem</code> | Modulus/remainder of a truncating division |
| <code>1+, 1-</code> | Returns a new value (inc/dec)remented by a number |
| <code>incf, decf</code> | 📌 Macros to (inc/dec)rement in place |
| <code>=, /=</code> | Mathematical value equality (types ignored) |
| <code>>, >=, <, <=</code> | Order comparison |

Characters

Strings

| | |
|---------------------|---|
| <code>format</code> | Returns a formatted output string when the <i>destination</i> is <code>nil</code> |
|---------------------|---|

Sequences

| | |
|-------------------------|--|
| <code>elt</code> | Access elements with an integer index |
| <code>length</code> | |
| <code>count</code> | Count the appearances of an element |
| <code>find</code> | Finds an item or returns <code>nil</code> |
| <code>position</code> | The first index of an element |
| <code>search</code> | Returns the start position of a sequence in another sequence |
| <code>remove</code> | Removes all the occurrences of an item |
| <code>substitute</code> | Replaces all occurrences of an item |

Lists

| | |
|----------------------|---|
| <code>mapcar</code> | Successively applies a function to each element of a list |
| <code>maplist</code> | Like <code>mapcar</code> , but its function receives a <code>cons</code> cell instead of its element (therefore, the function has access to the rest of the list) |
| <code>mapcan</code> | Like <code>mapcar</code> , but the results are combined into a list |
| <code>mapcon</code> | Like <code>mapcan</code> , but applied to <code>maplist</code> |

Vectors

Hash Tables

Things to remember

| | |
|--------------------|--|
| Object Oriented | All values in a Common Lisp program are instances of some <code>class</code> . Furthermore, all classes are organized into a single hierarchy rooted at the class <code>T</code> . |
| Starting a project | SBCL and Quicklisp installation and a project template |

Equality

| | |
|---------------------|--|
| <code>eq</code> | Object identity (don't use with numbers or chars) |
| <code>eql</code> | 👍 Considers equivalent two objects of the same class with the same numeric or char value |
| <code>equal</code> | Lists with the same structure and contents, strings with the same characters |
| <code>equalp</code> | Ignores differences in case or in numerical type (<code>1 == 1 .0</code>) |

Functions

| | |
|--|--|
| <code>defun</code> | |
| <code>lambda</code> | Returns an anonymous function |
| <code>return -from</code> | Immediately returns a value from a function (or a <code>block</code>) |
| <code>funcall</code> | Invokes a function from a function object |
| <code>apply</code> | Works like <code>funcall</code> , but receives the arguments as a list |
| <code>&optional, &key, &rest, &allow-other-keys</code> | Different ways to capture function arguments |

Standard Control Constructs

| | |
|---------------------|--|
| <code>if</code> | The <i>else</i> form is optional |
| <code>when</code> | Like <code>if</code> , but returns <code>nil</code> if the condition is <i>falsy</i> and evaluates multiple body forms |
| <code>unless</code> | Like <code>when</code> , but executes its body only when the condition is <i>falsy</i> |



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IO

`format` Produces formatted output to *stdout* when the *destination* is `t`

format language

`a, s,` Interpolate argument in human readable format; interpolate as *Lisp* readable

`%, &` Newline; newline if not at the beginning of a line

Object-Oriented

`defgeneric` Defines an abstract operation (*polymorphism*)

`defmethod` Defines an implementation of a generic function

`call-n ext -method` Similar to an invocation to a super-class method

`defclass` New named class; some slot options are: `:reader`, `:writer`, `:accessor`, `:initarg`, `:initform`, `:documentation`, `:allocation`

`slot-value` Returns the value of slot in the object (**setf**-able)

`with-slots, with-accessors` Binds a slot/accessor to a symbol that can be used in its body



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