BOOLEANS AND CONSTANTS

| Т | NIL |
|------|--------------------------------|
| true | Represents false or empty list |

CONTROL FLOW

| IF | WHEN | COND |
|---|--|----------------------------|
| Executes <i>then</i> if true Otherwise <i>else</i> (if condition then [else]) | Like <i>if</i> , but only has a true branch, we can run multiple expressions | Like a chain of if/else if |

LOGICAL OPERATORS

| NOT | AND OR | | EQUAL | |
|---|---|---|---|--|
| (NOT x) returns T if x is false, else NIL | (AND x y) returns NIL at the first false value, else the last true one | (OR x y) returns the first true value, else NIL | (EQUAL a b) returns T if a and b are equal | |

LIST CONSTRUCTORS

CONST

(cons a b) Constructs a pair from a and b.

(cons 1 '(2 3)); => (1 2 3)

LIST ACCESSORIES

| CAR/FIRST | CDR | SECOND | LENGTH | |
|-----------------------|---|--------|--|--|
| Returns first element | Returns first element Gets the rest of the list excluding the first element | | Returns the number of elements in a list | |

FUNCTION DEF. AND SCOPE

| DEFUN | LABELS | LET | LET* | |
|---|---|---|--|--|
| (defun name (args) body) defines a function | Defines local recursive functions (labels ((name (args) | Creates local variables (let ((var val)) | Like let but allows each variable to depend on the | |

| body)) main-body) | body) | previous one |
|----------------------|-------|--------------|
|----------------------|-------|--------------|

FUNCTION CALLING

| FUNCALL | QUOTE or ' |
|------------------------------------|--|
| Calls a function passes as a value | Prevents evaluation. Example; '(1,2,3) is a literal list. |

ARITHMETIC AND COMPARISON

| Basic arithmetic | | Numeric comparisons | | | | | |
|------------------|---|---------------------|---|---|----|----|---|
| + | - | * | 1 | < | <= | >= | = |