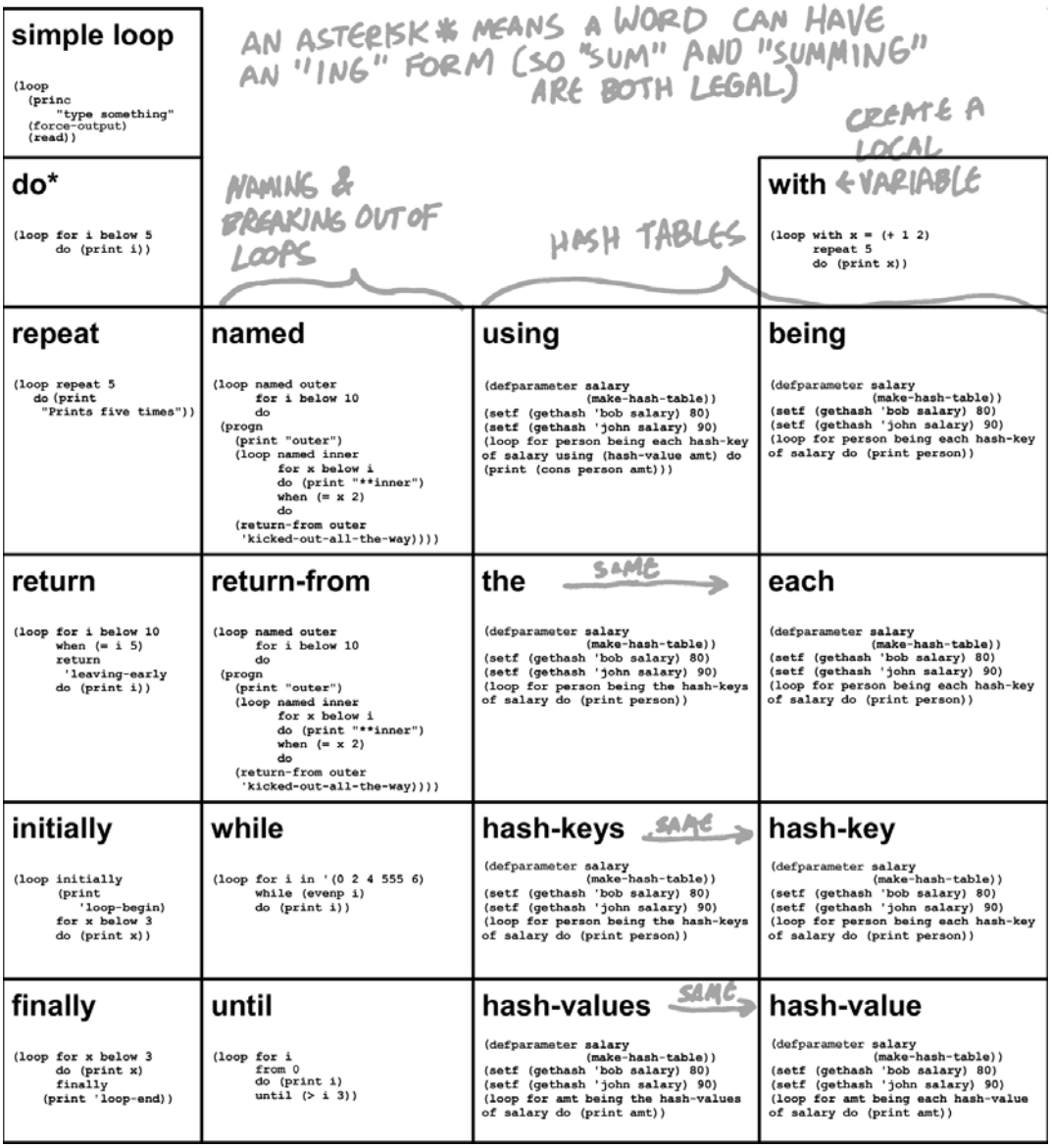
Periodic Table of the Loop Macro



simple loop

```
(loop
  (princ
     "type something"
  (force-output)
  (read))
```

do*

```
(loop for i below 5
      do (print i))
```

with

```
(loop with x = (+ 1 2)
      repeat 5
      do (print x))
```

repeat

```
(loop repeat 5
   do (print
    "Prints five times"))
```

named

```
(loop named outer
      for i below 10
      do
 (progn
   (print "outer")
   (loop named inner
         for x below i
         do (print "**inner")
         when (= x 2)
         do
   (return-from outer
    'kicked-out-all-the-way))))
```

using

```
(defparameter salary
              (make-hash-table))
(setf (gethash 'bob salary) 80)
(setf (gethash 'john salary) 90)
(loop for person being each hash-key
of salary using (hash-value amt) do
(print (cons person amt)))
```

being

```
(defparameter salary
              (make-hash-table))
(setf (gethash 'bob salary) 80)
(setf (gethash 'john salary) 90)
(loop for person being each hash-key
of salary do (print person))
```

return

```
(loop for i below 10
      when (= i 5)
      return
       'leaving-early
      do (print i))
```

return-from

```
(loop named outer
      for i below 10
      do
 (progn
   (print "outer")
   (loop named inner
         for x below i
         do (print "**inner")
         when (= x 2)
         do
   (return-from outer
    'kicked-out-all-the-way))))
```

the

```
(defparameter salary
              (make-hash-table))
(setf (gethash 'bob salary) 80)
(setf (gethash 'john salary) 90)
(loop for person being the hash-keys
of salary do (print person))
```

each

```
(defparameter salary
              (make-hash-table))
(setf (gethash 'bob salary) 80)
(setf (gethash 'john salary) 90)
(loop for person being each hash-key
of salary do (print person))
```

initially

```
(loop initially
      (print
         'loop-begin)
      for x below 3
      do (print x))
```

while

```
(loop for i in '(0 2 4 555 6)
      while (evenp i)
      do (print i))
```

hash-keys

```
(defparameter salary
              (make-hash-table))
(setf (gethash 'bob salary) 80)
(setf (gethash 'john salary) 90)
(loop for person being the hash-keys
of salary do (print person))
```

hash-key

```
(defparameter salary
              (make-hash-table))
(setf (gethash 'bob salary) 80)
(setf (gethash 'john salary) 90)
(loop for person being each hash-key
of salary do (print person))
```

finally

```
(loop for x below 3
      do (print x)
      finally
    (print 'loop-end))
```

until

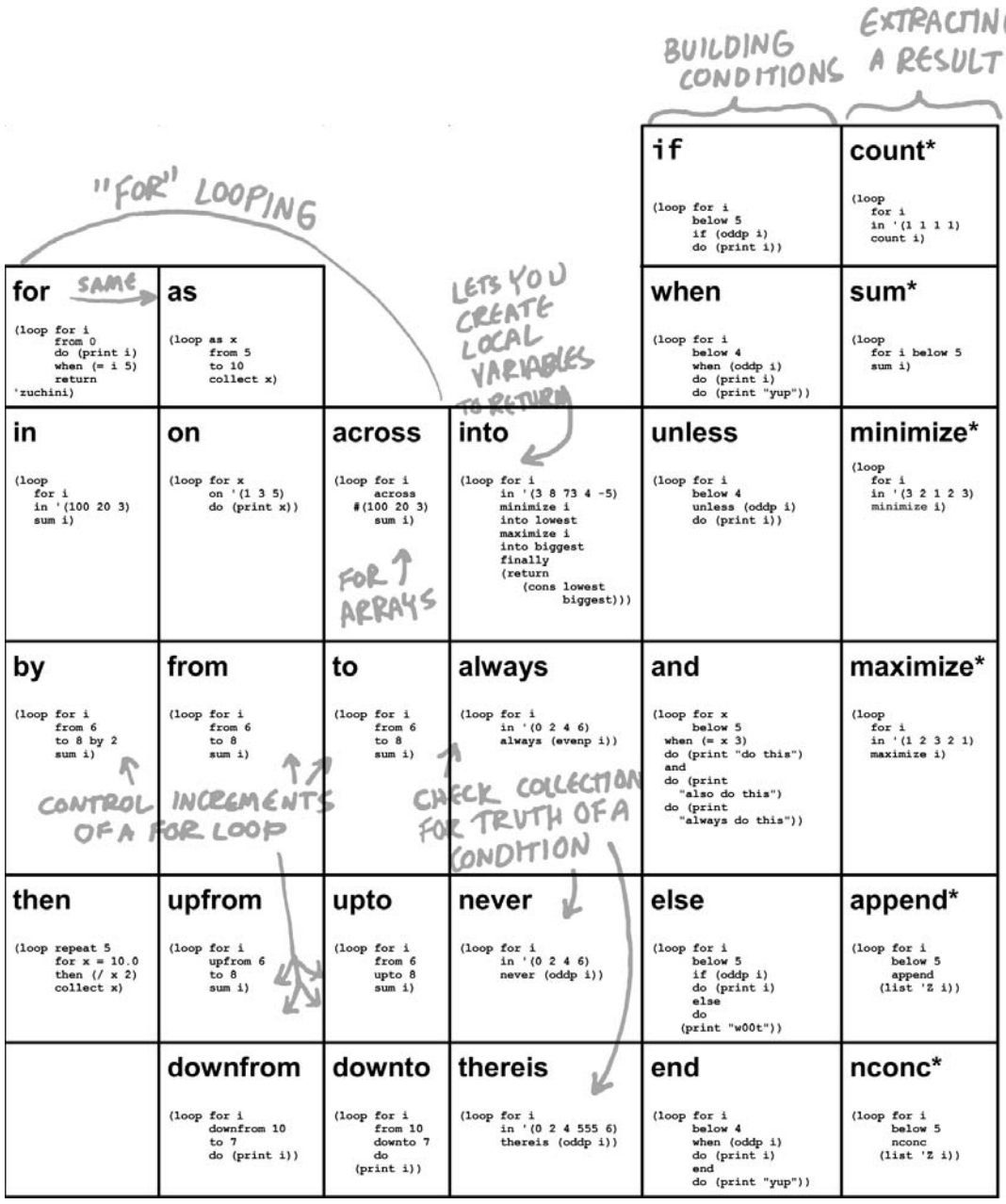
```
(loop for i
      from 0
      do (print i)
      until (> i 3))
```

hash-values

```
(defparameter salary
              (make-hash-table))
(setf (gethash 'bob salary) 80)
(setf (gethash 'john salary) 90)
(loop for amt being the hash-values
of salary do (print amt))
```

hash-value

```
(defparameter salary
              (make-hash-table))
(setf (gethash 'bob salary) 80)
(setf (gethash 'john salary) 90)
(loop for amt being each hash-value
of salary do (print amt))
```




```
(loop for i
      from 0
      do (print i)
      when (= i 5)
      return
'zuchini)
```

```
(loop as x
      from 5
      to 10
      collect x)
```

```
(loop
   for i
   in '(100 20 3)
   sum i)
```

```
(loop for x
      on '(1 3 5)
      do (print x))
```

```
(loop for i
      across
   #(100 20 3)
      sum i)
```

```
(loop for i
      in '(3 8 73 4 -5)
      minimize i
      into lowest
      maximize i
      into biggest
      finally
      (return
         (cons lowest
               biggest)))
```

```
(loop for i
      from 6
      to 8 by 2
      sum i)
```

```
(loop for i
      from 6
      to 8
      sum i)
```

```
(loop for i
      from 6
      to 8
      sum i)
```

```
(loop for i
      in '(0 2 4 6)
      always (evenp i))
```

```
(loop repeat 5
      for x = 10.0
      then (/ x 2)
      collect x)
```

```
(loop for i
      upfrom 6
      to 8
      sum i)
```

```
(loop for i
      from 6
      upto 8
      sum i)
```

```
(loop for i
      in '(0 2 4 6)
      never (oddp i))
```

```
(loop for i
      downfrom 10
      to 7
      do (print i))
```

```
(loop for i
      from 10
      downto 7
      do
   (print i))
```

```
(loop for i
      in '(0 2 4 555 6)
      thereis (oddp i))
```

```
(loop for i
      below 5
      if (oddp i)
      do (print i))
```

```
(loop for i
      below 4
      when (oddp i)
      do (print i)
      do (print "yup"))
```

```
(loop for i
      below 4
      unless (oddp i)
      do (print i))
```

```
(loop for x
      below 5
  when (= x 3)
  do (print "do this")
  and
  do (print
    "also do this")
  do (print
    "always do this"))
```

```
(loop for i
      below 5
      if (oddp i)
      do (print i)
      else
      do
     (print "w00t"))
```

```
(loop for i
      below 4
      when (oddp i)
      do (print i)
      end
      do (print "yup"))
```

```
(loop
   for i
   in '(1 1 1 1)
   count i)
```

```
(loop
   for i below 5
   sum i)
```

```
(loop
   for i
   in '(3 2 1 2 3)
   minimize i)
```

```
(loop for i
      from 6
      to 8
      sum i)
```

```
(loop for i
      below 5
      append
    (list 'Z i))
```

```
(loop for i
      below 5
      nconc
    (list 'Z i))
```