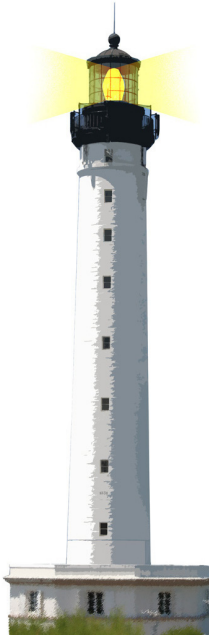
Loops



Loops

- Loops are expressed as messages
- Many different ones
  - Plain loops
  - Conditional loops
- Messages sent to numbers, collections or blocks
- Iterators

Loops: timesRepeat:

To repeat a given number of times an action

```
4 timesRepeat: [ self doSomething ]
```

Loops: to:do:

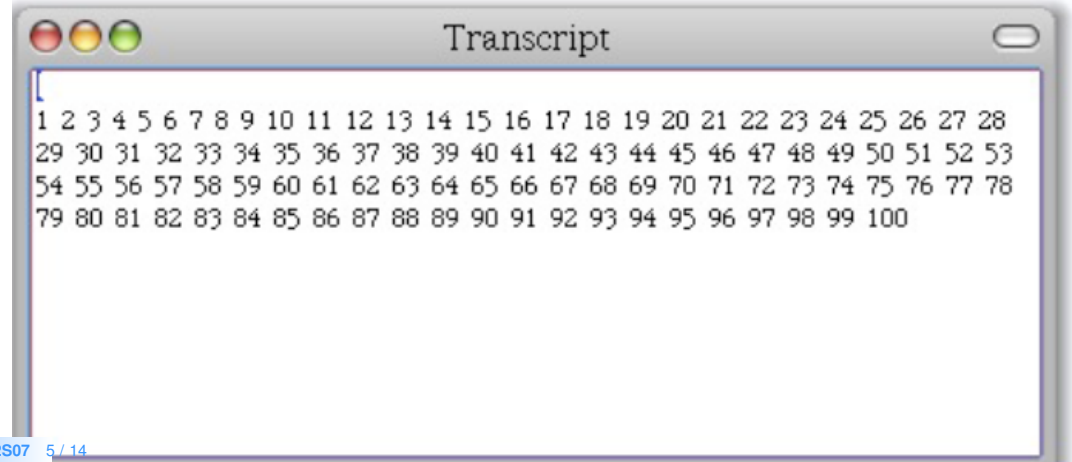
```
1 to: 100 do:
   [ :i | ... i ... ]
```

to:do: is a method defined on Number

Example: to:do:

The block is executed with the temporary i taking values from 1 to 100

```
1 to: 100 do:
   [ :i | Transcript show: i ; space ]
```



Loops: to:by:do:

```
0 to: 100 by: 3 do: [ :i | ... i ... ]
```

to:by:do: is also a method defined on Number

Example: to:by:do:

The block is executed with i taking values from 1 to 100 by step of 3

```
1 to: 100 by: 3 do:
   [ :i | Transcript show: i ; space ]
```

Transcript

```
1 4 7 10 13 16 19 22 25 28 31 34 37 40 43 46 49 52 55 58 61 64 67 70 73 76
79 82 85 88 91 94 97 100
```

Basic Iterators Overview

- do: (iterate)
- collect: (iterate and collect results)
- select: (select matching elements)
- reject: (reject matching elements)
- detect: (get first element matching)
- detect:ifNone: (get first element matching or a default value)
- includes: (test inclusion)
- and a lot more...

Loops: do:

```
aCol do: [ :each | ... ]
```

The block is executed with each taking as value all the elements of aCol

Example: The iterator do:

```
#(15 10 19 68) do:
    [:i | Transcript show: i ; cr ]
```

Loops: whileTrue:

```
[ ... ] whileTrue: [ ... ]
```

Executes the argument, aBlock, as long as the value of the receiver is true

```
Color >> atLeastAsLuminentAs: aFloat
  | revisedColor |
  revisedColor := self.
  [ revisedColor luminance < aFloat ]
    whileTrue: [ revisedColor := revisedColor slightlyLighter ].
  ^ revisedColor
```

Loops: whileTrue

Executes the receiver, as long as its value is true

```
[ ... ] whileTrue
```

Equivalent with whileFalse and whileFalse:

Summary

- Loops are expressed as messages
- Many different ones
  - Plain loops
  - Conditional loops
- Messages sent to numbers, collections or blocks
- Iterators

A course by

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