Loops

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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 ]
```
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:

```plaintext
#(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:
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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