Understanding Return

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http://www.pharo.org
What You Will Learn

- How to return a value from a method and a block
- The default return values
4 Cases

- Method with a return statement
- Method without a return statement
- Block without a return statement
- Block with a return statement
Returning a Value From a Method

Use the caret ^ to return a value from a method

```ruby
Number >> squared
"Answer the receiver multiplied by itself."
^ self * self
```
Default Method’s Return Value

A method with no caret \(^\) returns self

```
Game >> initializePlayers
    self players
    at: 'tileAction'
    put: ...
```

is equivalent to

```
Game >> initializePlayers
    self players
    at: 'tileAction'
    put: ...
\(^\) self  "<-- optional"
```
Blocks return the value of their last expression

```
[ :x | 
  x + 33.
  x + 2 ] value: 5
> 7
```

The caret ^ in a block has a special meaning...
A Caret in a Block Returns from the Method

A caret in a block quits the enclosing method

```
Integer>>factorial
  "Answer the factorial of the receiver."

  self = 0 ifTrue: [ ^ 1 ].
  self > 0 ifTrue: [ ^ self * (self − 1) factorial ].
  self error: 'Not valid for negative integers'
```

- When returning (with caret ^) from a block, the method defining the block is terminated
- Further readings: http://deepintopharo.org
What you Should Know

- The caret \(^*\) always terminates the method
- A method returns `self` by default
- A block returns the result of its last expression