

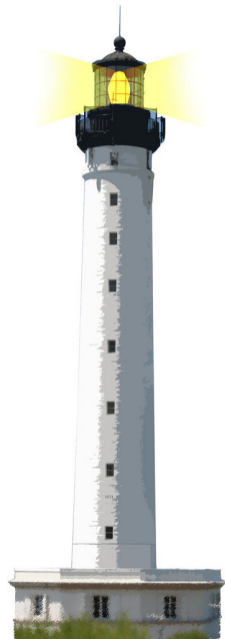
Booleans and Conditions

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W2S08



<http://www.pharo.org>



Booleans

- true is the unique instance of class True
- false is the unique instance of class False

In Pharo, booleans have nothing special

- & | not
- or: and: (lazy)
- xor:
- ifTrue:ifFalse:
- ifFalse:ifTrue:
- ...



Eager and Lazy Logical Operators

`false & (1 error: 'crazy')`

→ an error

- the argument (1 error: 'crazy') is executed because this is a non lazy operator

`false and: [1 error: 'crazy']`

→ `false` "no error!"

- the argument [1 error: 'crazy'] is not executed because it is not necessary



Conditionals

In Pharo, traditional conditional (if, else, while) are messages sent to boolean or block objects



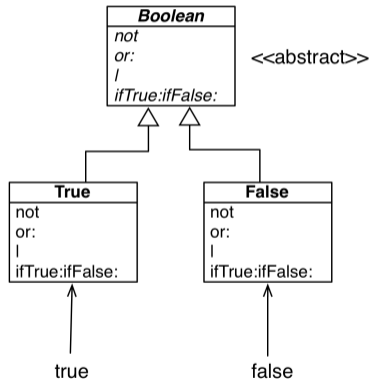
Yes ifTrue:ifFalse: is a message!

```
Weather isRaining  
  ifTrue: [ self takeMyUmbrella ]  
  ifFalse: [ self takeMySunglasses ]
```

- Conceptually ifTrue:ifFalse: is a message sent to an object: a boolean!
- Heavily optimised by the compiler

Boolean Implementation

- true is the unique instance of the class True
- false is the unique instance of the class False



More details in a future lecture (The Essence of Dispatch)

Conditionals: ifTrue: and ifTrue:ifFalse:

ifTrue: [] and ifTrue: [] ifFalse: [] are two different messages

```
forceltalicOrOblique  
  self slantValue = 0  
  ifTrue: [ slantValue := 1 ]
```

```
fullName isEmptyOrNil  
  ifTrue: [ 'FirstnameLastname' translated ]  
  ifFalse: [ fullName ].
```



Conditionals: `ifFalse:` and `ifFalse:ifTrue:`

`ifFalse: []` and `ifFalse: [] ifTrue: []` are two different messages



Conditionals: isEmpty: ifNotEmpty:

```
myProtocol  
  isEmpty: [ 'As yet unclassified' ]
```

```
self listItems  
  ifNotEmpty: [ :aList | aList at: index ]
```

- Notice that when the receiver is not empty we get it as argument
- No need to ask it again



Summary

- Booleans are real objects
- Some conditionals are messages sent to Booleans



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