

Booleans and Conditions

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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:`
- ...

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 and not an error
```

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

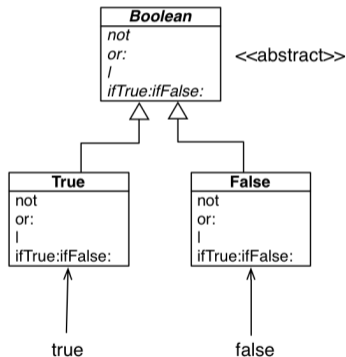
Yes ifTrue:ifFalse: is a message!

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

- Conceptually `ifTrue:ifFalse:` is a message sent to an object: a boolean!
- `ifTrue:ifFalse:` is in fact radically optimized by the compiler but you can implement another one such as `siAlors:sinon:` and try it at home.

Boolean Implementation

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



To see more have a look at the [Essence of Dispatch Lecture](#).

Conditionals

Conditionals: ifTrue:ifFalse:

- Booleans are objects
- Conditionals are messages sent to booleans or block
- `ifFalse:` and `ifFalse:ifTrue:`
- `ifTrue:` and `ifTrue:ifFalse:`

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

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

ifTrue:ifFalse: other examples

index isZero

ifFalse: [values at: index]

ifTrue: [self privateAt: key put: aBlock value]

Conditionals expressed on collections

Conditionals: isEmpty: ifNotEmpty:

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

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

- 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