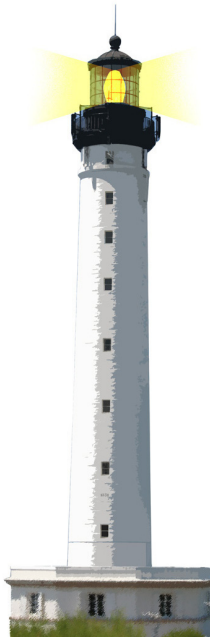
Methods: the elementary unit of reuse

Obvious but important

S. Ducasse



Pharo

http://www.pharo.org

Executing a method is reusing its code

Obvious but it is alwatys good to hear it again

- Defining method enriches the API of an object
- Calling a method is the first level of reuse

Study

```
inpectionPillarTree
  <inspectorPresentationOrder: 35 title: 'PillarTree'>

  ^ SpTreePresenter new
    roots: { self };
    children: [ :aNode | aNode children ];
    display: [ :each |
      String
        streamContents: [ :stream |
          stream
            nextPutAll: each class name.
            each class = PRHeader ifTrue:
              [ stream nextPutAll: '( level ';
              nextPutAll: each level asString;
              nextPutAll: ' )' ].
      ] ];
    yourself
```

Why the client of a document is forced to define this behavior?

Reuse is your friend!

Better define a method

```
displayStringOn: stream
  stream
      nextPutAll: each class name.
      each class = PRHeader ifTrue:
        [ stream nextPutAll: '( level ';
        nextPutAll: each level asString;
        nextPutAll: ' )' ]
```

Reuse is your friend!

Call (reuse) a method!

```
inpectionPillarTree
  <inspectorPresentationOrder: 35 title: 'PillarTree'>
  ^ SpTreePresenter new
    roots: { self };
    children: [ :aNode | aNode children ];
    display: [ :each |
      String
        streamContents: [ :stream |
          each displayStringOn: stream ].
      ] ];
    yourself
```

Annoying logic repetition

```
...
stream := WriteStream on: (String new: 1000).
#(1 2 3) printOn: stream.
stream contents
```

streamContents: to the rescue

```
String streamContents: [:s | #(1 2 3) printOn: stream ]
```

- Encapsulate creation
- Optimized
- Hide details
- Encapsulate termination

```
SequenceableCollection class >> streamContents: blockWithArg
  ^ self new: 100 streamContents: blockWithArg

SequenceableCollection class >> new: newSize streamContents: blockWithArg

  | stream |
  stream := WriteStream on: (self streamSpecies new: newSize).
  blockWithArg value: stream.
  "If the write position of stream is at the end of the internal buffer of stream (
      originalContents),
  we can return it directly instead of making a copy as contents would do"
```

Another example of action encapsulation

```
'tintin' asFileReference readStreamDo: [:s | s next... ]
```

```
AbstractFileReference>> readStreamDo: aBlock
  | stream |
  stream := self readStream.
  ^ [ aBlock value: stream ]
    ensure: [ stream close ]
```

- Initialize
- and gracefully terminates

Stepping back

- Encapsulate logic in powerful API
- Avoid spreading knowledge in clients
- Avoid duplication of logic in clients

A course by

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