

# Object-Centric Instrumentation with Pharo

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# Illustrations

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# Introduction

This booklet is about object-centric instrumentation in Pharo. An instrumentation is object-centric if it applies to one specific object (or a set of objects), without consideration of its class. It means the instrumentation can be applied on one object, leaving untouched all other instances of its class, or to an heterogeneous set of instances of different classes. This booklet gives an overview of available object-centric instrumentation techniques in Pharo, either present in the standard distribution or available on download. We will not go into deep technical usage description, nor into implementation details. Each chapter illustrates one solution with examples, and gives the necessary references if one wants to go deeper in the study of the solution. Each solution is evaluated against a set of criteria presented in Chapter 2, along with a short performance overhead evaluation.





# What we are talking about

## 2.1 Illustration example

## 2.2 Evaluation criteria

- constraints: make a list and evaluate all solutions?
- flexibility: no constraint on the source code
- granularity: method, AST, other?
- integration: is it integrated into the system?
- self preservation: case of proxies?

## 2.3 Performance overhead evaluation

- source code with instrumentation example
- describe the used method
- describe the limitations of the method







# Anonymous subclasses

## 3.1 What are Talents

## 3.2 Example

### Installing Talents

aa

### Example

bb

#### Listing 3-1 Installation from Github

```
Metacello new
  baseline: 'Talents';
  repository: 'github://tesonep/pharo-talents/src';
  load.
```

#### Listing 3-2 Installation from Github

```
talent := Trait named: 'MyTalent'.
talent compile: 'add: anObject
anObject logCr.
super add: anObject'.
col := OrderedCollection new.
col addTalent: talent.
col add: 'This is an added object.'
```

### 3.3 Evaluation

cc

■ **Note** this is a note annotation.

■ **To do** this is a todo annotation

Country	Capital
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# Talents

Talents is this.

## 4.1 What are Talents

## 4.2 Example

### Installing Talents

aa

### Example

bb

## 4.3 Evaluation

cc

### Listing 4-1 Installation from Github

```
Metacello new
  baseline: 'Talents';
  repository: 'github://tesonep/pharo-talents/src';
  load.
```

**Listing 4-2** Installation from Github

```
talent := Trait named: 'MyTalent'.
talent compile: 'add: anObject
anObject logCr.
super add: anObject'.
col := OrderedCollection new.
col addTalent: talent.
col add: 'This is an added object.'
```

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# Proxies

## 5.1 What are Talents

## 5.2 Example

### Installing Talents

aa

### Example

bb

#### Listing 5-1 Installation from Github

```
Metacello new
  baseline: 'Talents';
  repository: 'github://tesonep/pharo-talents/src';
  load.
```

#### Listing 5-2 Installation from Github

```
talent := Trait named: 'MyTalent'.
talent compile: 'add: anObject
anObject logCr.
super add: anObject'.
col := OrderedCollection new.
col addTalent: talent.
col add: 'This is an added object.'
```

### 5.3 Evaluation

cc

**Note** this is a note annotation.

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# Reflectivity

Talents is this.

## 6.1 What are Talents

## 6.2 Example

### Installing Talents

aa

### Example

bb

## 6.3 Evaluation

cc

### Listing 6-1 Installation from Github

```
Metacello new
  baseline: 'Talents';
  repository: 'github://tesonep/pharo-talents/src';
  load.
```

**Listing 6-2** Installation from Github

```
talent := Trait named: 'MyTalent'.
talent compile: 'add: anObject
anObject logCr.
super add: anObject'.
col := OrderedCollection new.
col addTalent: talent.
col add: 'This is an added object.'
```

■ **Note** this is a note annotation.

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# Low-level techniques

## 7.1 Example

### Installing Talents

aa

### Example

bb

#### Listing 7-1 Installation from Github

```
Metacello new
  baseline: 'Talents';
  repository: 'github://tesonep/pharo-talents/src';
  load.
```

#### Listing 7-2 Installation from Github

```
talent := Trait named: 'MyTalent'.
talent compile: 'add: anObject
anObject logCr.
super add: anObject'.
col := OrderedCollection new.
col addTalent: talent.
col add: 'This is an added object.'
```

7.2 Evaluation

cc

- **Note** this is a note annotation.
- **To do** this is a todo annotation

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France	Paris
Belgium	Brussels



# Conclusion

## 8.1 Example

### Installing Talents

aa

### Example

bb

#### Listing 8-1 Installation from Github

```
Metacello new
  baseline: 'Talents';
  repository: 'github://tesonep/pharo-talents/src';
  load.
```

#### Listing 8-2 Installation from Github

```
talent := Trait named: 'MyTalent'.
talent compile: 'add: anObject
anObject logCr.
super add: anObject'.
col := OrderedCollection new.
col addTalent: talent.
col add: 'This is an added object.'
```

## 8.2 Evaluation

cc

■ **Note**    this is a note annotation.

■ **To do**    this is a todo annotation

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# Bibliography

