SMA: Software Modeling and Analysis

Practical Session

Week 03
Assignment 03

Discussion
Evaluate Smalltalk code.

a) Who new amIClassy.
c) Who new classy1 = Who new classy2.
Exercise 01 | Class identity

a) Who new amIClassy.
   True: Super is used in the context of a object.

   True: Both elements represent the same object.

c) Who new classy1 = Who new classy2.
   True: Both elements represent the same object.
Pharo *object inspection*.

Find all abstract methods of the class `Collection`:

```plaintext
Collection methods select:
    [:eachMethod | eachMethod isAbstract]
```
Pharo object inspection #2.
What is the name of Pharo’s class hierarchy root class? 
ProtoObject

What is its purpose?
It augments all objects with some “x-ray” capabilities to developers.
Pharo *object inspection* #3.

How many super classes does the class Collection have?

*Collection allSuperclasses size.* → 2

How many direct and indirect subclasses does it have?

*Collection subclasses size.* → 14

*Collection allSubclasses size.* → 101

*Indirect subclasses: 101 – 14 = 87*
Pharo architecture review.
Where is “new” defined?
“new“ is first defined in the class Behavior.

Describe also Pharo’s method resolution strategy for the “new” message.
When the message new is sent to a class it is being resolved throughout its metaclass chain.
Assignment 04

Preview
A04 - Exercise 01 | Hierarchy traversal

Write a method.

Find the *longest inheritance chain* among all Smalltalk classes in the Pharo programming environment.
Write a *method*.

Find all *abstract method overrides* in the Pharo system.
Write a *method*.

Find all *query method implementing classes*.

*Hint: Query methods are prefixed with is, was, or will.*
Write a method.

Find all root methods in the off-the-shelf Pharo image.

Hint: A “root method” is a method whose selector has been implemented in a class, such that the super class of that class does not understand it.
Dynamic extension of code.

Step 1:
Redefine code, add instance variable, add method receiver.

Step 2:
Execute code and observe results.
One more thing...
You have to **attend the lecture** to reveal such slides.*

*Disclaimer:
The content that has been shown on this slide is irrelevant for the exam.

:-)