SMA: Software Modeling and Analysis

Practical Session

Week 03
You have to attend the lecture to reveal such slides.*

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Assignment 02

Discussion
A02 - Exercise 01

Nature of Smalltalk and Pharo.

a) Name three major benefits Pharo provides in comparison to Java.
   intercession, everything can be changed, live environment

b) How can you export the current image of your Pharo working environment?
   left mouse click on the workbench → “Save” or “Save as”
A02 - Exercise 01

Nature of Smalltalk and Pharo.

c) What is a message in Pharo? A block can be thought of as a lambda-expression defining an anonymous function, or as a function object.
Pharo *object inspection*.

a) What is the message that is sent to a superclass to find all its subclasses?

   `subclasses`

b) What is the difference between a String and a Symbol object in Pharo? Why is it important?

   Symbols are immutable and unique. Strings are mutable and not unique. The benefit of using Symbols is the performance gain due to less expensive value comparisons.
Pharo *object inspection*.

c) How can you create an abstract method in Pharo?

```smalltalk
sampleAbstractMethod
  ^self subclassResponsibility.
```

d) Write the a Smalltalk block, and execute it with some specific values.

*Please consider solution sheet (downloadable solution available).*
A02 - Exercise 03

Even more Pharo *coding*.

a) Find the top 10 most frequently invoked methods.

b) Find the top 10 methods invoked on the largest number of different objects.

c) Find all static methods.

*Please consider solution sheet (downloadable solution available).*
code that accesses the CallGraph APIs

result
A02 - Exercise 03

Exercise Procedure

1) Add method name accessor
2) Add and implement receiver accessor
3) Use the CallGraph API to gather all data
Assignment 03

Preview
Evaluate Smalltalk code.

a) Who new amiClassy.
c) Who new classy1 = Who new classy2.
Pharo object inspection.

Find all abstract methods of the class Collection
Pharo object inspection #2.

What is the name of Pharo’s class hierarchy root class?

What is its purpose?
Pharo *object inspection* #3.

How many super classes does the class Collection have?

How many direct and indirect subclasses does it have?
Pharo architecture review.

Where is “new” defined?

Describe also Pharo’s method resolution strategy for the “new” message.