Smalltalk: Understanding Classes and Metaclasses

Please submit this exercise to the git repository before 10h15, October 7, 2014. Don’t forget to register to the SDE student list. Also register for the course by Oct 10!

Exercise 1

Based on the following UML diagram

```
Object
    \-- Who
        \-- amIClassy
            \-- Who new amIClassy

^ self class = super class
```

what will be the result of the following expression?

```
Who new amIClassy
```

Explain your answer.

Exercise 2

What is the value of the expression `Point new class superclass class class`? What is the value of the expression `Point new class superclass class class class class`? Explain your answer.

Exercise 3

Find all the abstract methods of the class `Collection`.

- Hint: An abstract method has the body `self subclassResponsibility`. Send `methods` to get the methods of a class, and use `messages` to get the messages sent by a method.

Exercise 4

How deep is the Pharo class hierarchy? Find the deepest class ignoring metaclasses.

- Hint: use the method `Class>>subclasses`

Exercise 5

How deep is the `Collections` hierarchy? What is the deepest class?
Additional exercise

Based on the code from the lecture and exercise (CallGraph-exercises.st, Calls.txt), write the appropriate source code and answer the following question:

- Find all classes containing at least two methods.

Note: For these exercise please refer to Chapters 3 to 9 and Chapter 13 of the Pharo by Example book. Note: For the Exercise 3, 4, 5 and Additional exercise, file out the appropriate source code and commit the .st files to the git repository on https://bitbucket.org.