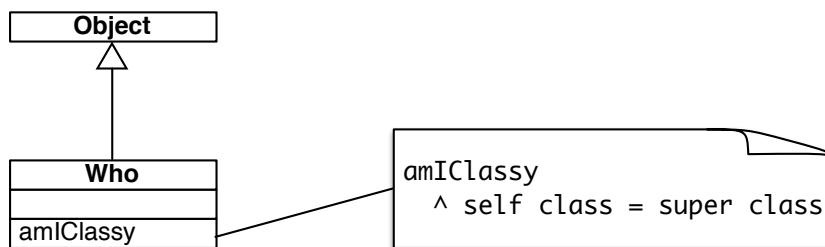


## Smalltalk: Understanding Classes and Metaclasses

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



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>.