Understanding class names

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For the experiment

For each participant

- Allocate between 30 min and 1h
- Record your screen during your experiment
- Please express your thoughts loudly,
- Take notes of the changes on class names you would like to rename, and the recurrent patterns you may detect

As a group

- Please compare your notes and compile a single todo -We can join for this session
- Send us: videos + notes + actions you did



Problematics

- How to know if we can trust that a class name indicates the kind of class it is? **Examples:**
 - ClyTableDecorationStrategy is it a strategy or an annotation?
 - ClyVariables is it a query or a result?
- How to assess if class is regularly and coherently named?

Our proposal: Class names Distribution visualisation



What's ClassNames Distribution?





It is a package-centered visualisation of the distribution of class names suffixes in a project with inheritance perspective.

> The visualisation is intended to assist code reviewers in the comprehension of source code, the detection of naming conventions, and their violations (inconsistent naming)





Before explaining the visualisation and its associate tool, let's explain our experiment protocol.

The experiment protocol

- For each project to study
 - Each member of the team will independently:
 - 1. Install the tool and configure it for the project
 - Record his/her screen while using the tool to identify class name inconsistencies. Don't hesitate to loudly explain what you have in mind if you also record the micro.
 - 3. Note on a separate document or directly rename in his/her image the classes inconsistently named. We need to keep track on the changes per participant.

The experiment protocol 2

- Make a meeting with all the participant of the experiments to:
 - Discuss about the changes
 - Accept some changes
- Send us feedbacks on:
 - The number of accepted / rejected renaming; in production?

 - The use of the tool in the process
- Send us all this material.

• If you got naming conventions: what were they? were they followed or violated?

The discovery of class name convention violation you were not aware



The tool description

One View per package



A schematic mini project composed of A, B, C, D, E, F hierarchies.

Package: P1



Its corresponding Class Name Distribution visualisation



Root classes have bold borders (CX, DY, BF, AZ, EP)



Package: P1





Single classes are White (BF, AZ)







White means that the class is either: a Trait or belongs to no hierarchy and

has no subclasses



Coherently named hierarchies in Gray





Gray means the hierarchy is consistently named

(Since they're named correctly, do not worry about them)







multiple suffixes (

=> hierarchy is not consistently named => should check why

Here the background is redbecause we have 4 classes from CX

Color of classes starting from the 25th hierarchy

Reset

Instructions

Help

?

Install the tool on a Moose 9 image

- 1. Take a fresh Moose 9 image
- 2. Install your project to evaluate if it is not by default in the image 3. Install Class Name Distribution by executing the following code from a Playground

Metacello new

baseline: 'ClassNameAnalyser';

repository: 'github://NourDjihan/ClassNameAnalyser/src';

load

Open the tool

On the top of your image, click on Library and then ClassNamesDistribution as shown in the left picture. It opens a new window as on the right picture.

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Configure the tool for your project

- 1. In the filter field (4) enter the name of your project to select the corresponding packages (ex: Roassal3-)
- 2. Click on all the packages (3) of your project (the shortcut Ctrl+A works)
- 3. Click on Add packages (5)
- 4. Click on Visualize (9)

Configure the tool for your project This part is optional

Specify a root class if all your class inherits from the same class

- Write a root class name in the field text
 (8) for example: RSObject
- 2. Click on the Visualize button (9)

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Ready to use the tool!!

We will try to understand the inconsistencies in the class naming by looking at the colored hierarchies.

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Import from MSE Export to CSV

The tool's widgets:

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Instructions 2

Help

- **1- Import the MSE file**
- 2- Export the visualisation data into
- a CSV file
- **3-** The list of packages
- 4- Write the name of the
- project (first word of packages names in Pharo)
- 5- Click to add the selected packages
- 6- Click to show the selected packages, (explanation of ClassNames delete some or all. **Distribution principles**)
- 7- Select the token to be extracted from
- the class name

- 8- Define the root class ('Object' by default)
- 9- Click to see the visualisation
- **10- Select the pattern**
- **11-** Patterns explanation
- 12- Reset the visualisation to its first state
- **13- Help of the visualisation**

14- The instructions to follow using the tool.

Mouse hover a class shows the hierarchy of the class: The root class in bold, The arrow is followed by the name of the class itself

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Reset		

Left click on a class highlights the whole hierarchy of the class

The red hierarchy classes are highlighted

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Class boxes in white border indicate suspiscious cases

Summary of the mouse interactions on a class box

- Mouse hover shows the hierarchy of the class:
 - The root class in bold,
 - The arrow is followed by the name of the class itself
- Left click highlights the whole hierarchy of the class (so all the classes of the same color)
- Right click opens the class browser

(if you need more information about the class or want to directly rename it in that case click again on the *Visualize* button (9) to update the visualisation)

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Why having twice the same suffix in different hierarchies (light brown and orange)?

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	Import from MSE Export to CSV
Hierarchy in blue has	 AST-Core AST-Core-Tests AST-Core-Traits
	Alien-Core
16 suffixes in	Announcements-Core
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	Reset

Why would a hierarchy use more than one, or 2 suffixes?

ClassNames Distribution

Color of classes starting from the 25th hierarchy

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