SMA:
Software Modeling and Analysis

Practical Session
Week 06
Assignment 05

Discussion
• Is code reading a problem? Argue the answer.
   *Yes, it is! Developers spend usually more than 50% of their time on code reading.*

• Give an example where a custom tool improved the productivity in addressing a problem or issue.
  
  | status indicators | → awareness of project state |
  | customized IDE plug-ins | → report a variety of issues |
  | DIY tools | → help in fixing things... |
How many classes in Pharo contain the `<gtView>` pragma?

547 classes have built-in support for GT inspector.

Code:

```plaintext
results := Set new.
#gtView gtPragmas do: [ :method |
   results add: (method classBinding value name)].
results sorted: [ :a :b | a < b ].
```
ii) Improve `DateAndTime` so that GT inspector can visualize them with the following “Human Readable” format:

`YYYY-MM-DD HH:MM`

```
DateAndTime>>gtHumanReadableFor: aView
<gtView>
^aView textEditor
   title: 'Human Readable';
   text: [self asStringYMDHM]
```
What are supported annotation names in live documents?

Example:
${\texttt{class:}Object}$ contains the annotation name \texttt{class} which tells the live document to use the appropriate visualization for classes.

11 annotation names can be found in \texttt{GtDocumentConstants}: changes, class, example, examples, explanation, icebergFile, inputFile, method, parametrizedExample, slides, xdocList
Exercise 03 | Live documents

ii) Create a live document that always shows the current number of classes available in Pharo.

Expected result: I consist of 18605 classes.

Live document code:
I consist of ${example:
BaselineOfGToolkit>>#allClasses|
label=#size}$classes.

Corresponding logic code:
BaselineOfGToolkit>>#allClasses
<gtExample>
^ SystemNavigation default allClasses
Assignment 06

Preview
Download and set up Pharo 9.0 with the full version of Roassal3.
Smalltalk *coding.*
Build a *sunburst visualization* to analyze test coverage of the `Collection` class hierarchy.
Smalltalk coding.
Build a tree layout visualization to gather an overview of classes with subclasses that contain the string `Array` in their names.
Smalltalk coding.
Create a visualization to analyze the class dependencies between the Collection class hierarchy and the RSLLayout class hierarchy.
Visualization reasoning.
Comment on the strengths and limitations of each visualization you just created.

Sunburst visualization
Strengths: ...
Limitations: ...

Tree layout visualization
Strengths: ...
Limitations: ...

Node-link visualization:
Strengths: ...
Limitations: ...