

Method Execution Report

Date: 06/04/2017

Type: FN / NF

System: paintEntries

Session overall:

This session aims at gathering impression of the *Method Execution Report* from practitioners. The session is relatively short, only a few minutes long. The session is divided into two phases. The first phase is about yourself, and the other phase is about the evaluation of the report. Note that all your answers are treated anonymously.

Description:

Method Execution Report is a textual and interactive report that summarizes the execution of a particular method for a given software execution. The report provides an overview of the dynamic calls and time consumption.

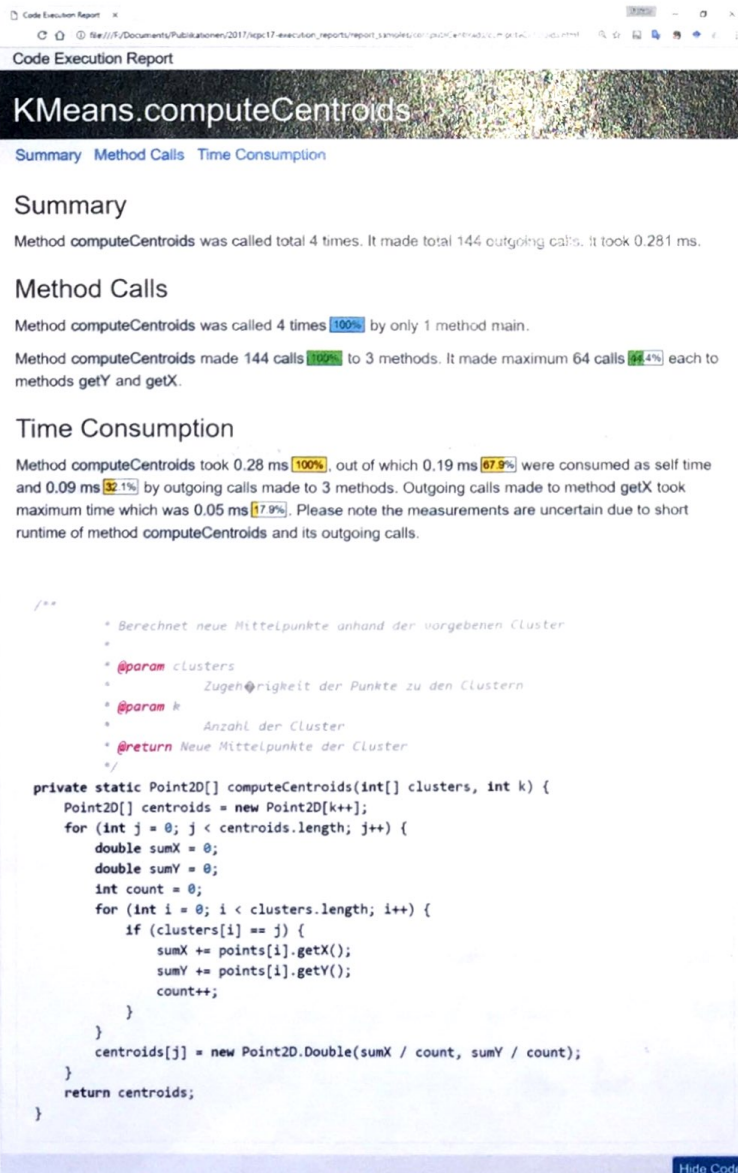


Figure on the left gives an example of the report. The report is structured into three sections, and lists the code of the method.

The summary gives first essential data, including the number of incoming and outgoing calls, and how long the summed executions of the method took.

The second section details the description of the method calls, including the most important caller and callees.

The third part provides further information about the timing.

Phase 1: About yourself

- Are you Female or Male ? *Male*
- How many years of experience do you have in programming? *7*
- How long have you been programming in Java for? *6 years*
- Which Java programming environments (IDE) are you familiar with?

*Eclipse
IntelliJ
netBeans*

- While programming, if your application does not behave as you expect, what do you usually do?
How do you usually debug an application?

*In Java I use the IDE debugger mostly, to track down the misbehaviour.
In other languages, I prefer to print things rather than debug.*

- How do you usually do to improve the performance of a particular method?

Constant refactor, caching, keep a benchmark

Phase 2:

TIME BEGIN: 16:18

QUESTION 1:

What do you think about the content of the textual description?

- I find it easy to understand? (strongly agree, agree, neutral, disagree, strongly disagree)

Please, justify

the language used is clear. However, I would've emphasized on the numbers (make them bold or something), since they are the most important information

- I find it useful? (strongly agree, agree, neutral, disagree, strongly disagree)

Please, justify

For someone who is related to the code it is very useful to know where the methods spend the time, so it is easier to find bottlenecks.

QUESTION 2:

What do you think about the interaction and the visual elements offered by the report?

- I find them easy to understand? (strongly agree, agree, neutral, disagree, strongly disagree)

Please, justify

the colors and design are fine, however it is hard to compare the numbers on the same sentence, since they can be far apart in the sentence.

what should I learn watching the bars where they show the depth?

- I find them useful? (strongly agree, agree, neutral, disagree, strongly disagree)

Please, justify

Colors and number emphasize are good, but do the colors mean something? and again, what is the bar graph meaning?

QUESTION 3:

Overall, do you feel that such a report is useful?

(strongly agree, agree, neutral, disagree, strongly disagree)

Please, justify

yes, because it can help to understand what the code is doing and where it spends most of the execution time. this way, optimization can be focused, to the most called or slower methods.

QUESTION 4:

In what scenarios and for solving which maintenance tasks would developers use Method Execution Reports?

Please, justify

When trying to identify a bottleneck. If there is a method that ~~is~~ is slowing down the execution it can be easily found with such a report.

It is also good for people communicating such problems at each other.

QUESTION 5:

What tools would you use instead of Method Execution Reports to retrieve the same information?

Please, justify

Besides the textual report, I would use visualization tools such as graphs with edges from method caller to method receiver and label those edges with time spent or the times ~~that~~ it was called.

QUESTION 6:

Do you have any suggestion on how to improve the report? Any critic?

Please, justify

I would change the structure of the sentences so the numbers get more focus and such as they can be as easily compared

e.g. 8000 calls
92% in foo()
3% in bar()

If the colors or graphs mean something I would use a legend to clarify.

TIME END: 16:34