FACULTY
OF INFORMATION
TECHNOLOGY
CTU IN PRAGUE

Review report of a final thesis

Reviewer:	Ing. Petr Máj
Student:	Nilay Baranwal
Thesis title:	Structured printing framework
Branch / specialization:	Web and Software Engineering
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Evaluation criteria

1. Fulfillment of the assignment

▸ [1] **assignment fulfilled**
[2] assignment fulfilled with minor objections
[3] assignment fulfilled with major objections
[4] assignment not fulfilled

I believe the assignment as stated in the thesis has been fulfilled by the student. A logging framework working with structured data has been designed and its prototype implemented. There are inaccuracies and shortcomings in both the written part and the actual software (see below), but generally, I believe the assignment has been fulfilled.

2. Main written part

55 / 100 (E)

The written part has been quite hard to evaluate. On one hand the level of English language used and the general readability very much above average. On the other hand the written part suffers from some serious problems both large and small. To say just a few: there are missing ends of sentences (such as on page 2), graphs appear in places where none are expected (page 21) and are generally clipped in a wrong way. While I would be perfectly willing to ignore minor problems like these, overall, they suggest that not enough time was spent on the written part. There are larger issues as well: The comparison of current logging techniques is very much Java biased (with one kernel example thrown in). Furthermore the thesis concerns itself heavily with realtime visualization of the logs, neglecting the fact that most logging is usually analyzed and visualized offline (granted the framework developed in the thesis supports offline visualization as well, but one would assume many of the motivations for the thesis simply disappear with offline analysis and this is never discussed). The section where use cases are presented seems overly formal, and repetitive to me. The actual information it contains can be presented far more concisely. But my biggest issue is with the evaluation chapter: I sorely miss overhead & throughput comparison with existing solutions, including plain strings in a file. The graphs presented contain a weird background whose

purpose I cannot figure out, the violins go below 0 where this should not be possible. Their discussion is quite shallow and misses key evaluations: The latency of the updaters would obviously depend on the size of graphs, tables, etc. Yet no scalability graphs are provided. Furthermore the actual overhead of the thin client is never measured. This greatly diminishes the usefulness of the evaluation chapter.

3. Non-written part, attachments 65 /100 (D)

The software is not linked from the thesis even though it lives in a repository. Actually using the software is by no means straightforward - a lot of documentation is missing and it definitely took me more than the hour claimed by the thesis to be a really complex configuration step of existing solutions. That said, with better documentation and some cleanup of issues (I had to update a few files to get running), the software seems to be working. The technologies used seems sound as well (see my questions below).

4. Evaluation of results, publication outputs and awards 65 /100 (D)

I would have liked much deeper evaluation of the results themselves in the thesis itself. After reading the thesis and looking at the code, I can imagine this being used in the wild, provided the shortcomings described in this evaluation are fixed. Because this would require a considerable effort I mark this section as D, but there definitely is a potential.

The overall evaluation 60 /100 (D)

Overall, both the software and the written part fulfil the requirements. However, both artifacts require major improvements if the work is to be useful: In case of the software, a lot of documentation and careful checking of the released version should be done for it to be production ready. The whole system needs much more thorough testing (I did not find any) as its robustness, a requirement for any logging platform is far from proven. The written part requires proofreading, cleanup, and much improved evaluation section. Thanks to these, I grade the work overall as D.

Questions for the defense

1) What is your overhead over the simple logging used in most applications (i.e. strings to file) on the client side.
2) How does your system detect/handle missing log messages (i.e. some rows in a table or points in a graph missing) in the presence of fire & forget client?

Instructions

Fulfillment of the assignment

Assess whether the submitted FT defines the objectives sufficiently and in line with the assignment; whether the objectives are formulated correctly and fulfilled sufficiently. In the comment, specify the points of the assignment that have not been met, assess the severity, impact, and, if appropriate, also the cause of the deficiencies. If the assignment differs substantially from the standards for the FT or if the student has developed the FT beyond the assignment, describe the way it got reflected on the quality of the assignment's fulfilment and the way it affected your final evaluation.

Main written part

Evaluate whether the extent of the FT is adequate to its content and scope: are all the parts of the FT contentful and necessary? Next, consider whether the submitted FT is actually correct – are there factual errors or inaccuracies?

Evaluate the logical structure of the FT, the thematic flow between chapters and whether the text is comprehensible to the reader. Assess whether the formal notations in the FT are used correctly. Assess the typographic and language aspects of the FT, follow the Dean's Directive No. 26/2017, Art. 3.

Evaluate whether the relevant sources are properly used, quoted and cited. Verify that all quotes are properly distinguished from the results achieved in the FT, thus, that the citation ethics has not been violated and that the citations are complete and in accordance with citation practices and standards. Finally, evaluate whether the software and other copyrighted works have been used in accordance with their license terms.

Non-written part, attachments

Depending on the nature of the FT, comment on the non-written part of the thesis. For example: SW work – the overall quality of the program. Is the technology used (from the development to deployment) suitable and adequate? HW – functional sample. Evaluate the technology and tools used. Research and experimental work – repeatability of the experiment.

Evaluation of results, publication outputs and awards

Depending on the nature of the thesis, estimate whether the thesis results could be deployed in practice; alternatively, evaluate whether the results of the FT extend the already published/known results or whether they bring in completely new findings.

The overall evaluation

Summarize which of the aspects of the FT affected your grading process the most. The overall grade does not need to be an arithmetic mean (or other value) calculated from the evaluation in the previous criteria. Generally, a well-fulfilled assignment is assessed by grade A.