FACULTY
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TECHNOLOGY
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Review report of a final thesis

Reviewer: Vitaly Bragilevsky, MSc.
Student: Ondřej Kvapil
Thesis title: Haskell Dynamic Tracing
Branch / specialization: Computer Science
Created on: 6 June 2021

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 think that the assignment is fulfilled: the dynamic tracing framework is designed and implemented and the data it collects can be easily queried. One issue could be the scalability beyond the simple examples required in the assignment, but I find this requirement hard to be guaranteed.

2. Main written part   100 /100 (A)

The FT is a very good reading. I think that descriptional parts are useful as an overview of GHC internals. All the details are precise and correct. The FT goes from a general overview to a domain exploration. It compares possible approaches to fulfill the assignment and explains the final choice. Implementation details are presented in a clear and precise way. The language is smooth and easy to read.

3. Non-written part, attachments   98 /100 (A)

I think that the actual code is still under development. The shortcomings discussed in FT need to be fixed before applying in practice. Nevertheless, these are purely technical issues that shouldn't affect the evaluation is any significant way.

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

I'm absolutely sure that this work can be used as the first step in a very important research in the area of laziness in Haskell. Despite general feeling, we have no evidence

that laziness is used extensively in Haskell. I believe that this is so, but it'd be nice to have real data. The tool that is developed here will help to collect all that data.

The overall evaluation   100 /100 (A)

By implementing dynamic tracing in Haskell Ondřej demonstrates a very high level of knowledge of Haskell and GHC internals. I think the assignment was quite hard in the first place. The fact that it was fulfilled shows his good professional skills.

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.