FACULTY OF INFORMATION TECHNOLOGY CTU IN PRAGUE

Supervisor's statement of a final thesis

Student: Valeriy Lyalin

Supervisor: Ing Michal Peroutka

Thesis title: Comparison of storing data flows in graph and relational database

Branch of the study: Web and Software Engineering

Date: 6. 6. 2020

Evaluation criterion:	The evaluation scale: 1 to 4.
1. Fulfilment of the assignment	***1 = assignment fulfilled,*** *2 = assignment fulfilled with minor objections,* *3 = assignment fulfilled with major objections,* *4 = assignment not fulfilled*

Criteria description:
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.

Comments:
The student fully fulfilled the assignment of the bachelor's thesis. He correctly grasped the difficult issue of comparing technologies. He showed the ability to evaluate different database engines and correctly discussed his next steps. He analyzed various ways of solving data storage in a graph database and because of that he was able to reach a valid goal in the implementation.

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
2. Main written part	*100 (A)*

Criteria description:
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.

Comments:
I positively evaluate the number of individual references, which in my opinion exceeded the scope of the bachelor's thesis. The number of sources that was used showcases the student's effort to understand the complex problem of graph databases in depth, and not only superficially. The logical structure of the thesis is factually in order and the individual parts are interconnected in a meaningful sense. The majority of citations are web-based. Given the age and dynamics of change in this topic, I consider this a logical and correct approach.

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
3. Non-written part, attachments	*95 (A)*

Criteria description:
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.

Comments:
The quality of the implementation corresponds to current trends in the concept of REST API applications both technologically as well as architecturally. Subsequent database parts are dealt with correctly and in the expected quality. I evaluate positively the effort to do test driven development and the implementation of individual search algorithms. Individual experiments of the database engine load for given algorithms are repeatable.

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
4. Evaluation of results, publication outputs and awards	*90 (A)*

Criteria description:	
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.	

Comments:

The results can be used in practice and give a realistic idea of the scalability of research algorithms in individual databases using different approaches. The results corresponds with the hypothesis and confirm the expectations placed upon graph databases and their use.

Evaluation criterion:	The evaluation scale: 1 to 5.
5. Activity and self-reliance of the student	5a: **_1 = excellent activity,_** _2 = very good activity,_ _3 = average activity,_ _4 = weaker, but still sufficient activity,_ _5 = insufficient activity_ 5b: **_1 = excellent self-reliance,_** _2 = very good self-reliance,_ _3 = average self-reliance,_ _4 = weaker, but still sufficient self-reliance,_ _5 = insufficient self-reliance._

Criteria description:	
From your experience with the course of the work on the thesis and its outcome, review the student's activity while working on the thesis, his/her punctuality when meeting the deadlines and whether he/she consulted you as he/she went along and also, whether he/she was well prepared for these consultations (5a). Assess the student's ability to develop independent creative work (5b).	

Comments:

The student demonstrated the ability to analyse the issue independently, to orientate in the database engines and was also able to meet the deadlines set for partial tasks.

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
6. The overall evaluation	95 (A)

Criteria description:	
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.	

Comments:

The student fulfilled the expectations given by the assignment and the written form has exceeded the expectations with both its extent and quality. The student demonstrated independence and ability to think, evaluate and decide on the technologies used. He was able to produce a high-quality and tested code. From the architectural point of view, the student did not invent anything unexpected and used the standard patterns for applications of given scale.

Signature of the supervisor: