FACULTY OF INFORMATION TECHNOLOGY CTU IN PRAGUE

Review report of a final thesis

Student:	Remy Rojas
Reviewer:	Ing. Jaroslav Kuchař, Ph.D.
Thesis title:	Blockchain Based RDF Management
Branch of the study:	Web and Software Engineering

Date: 28. 1. 2019

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:
This thesis addresses relevant topics for the web of data using modern approaches - the decentralisation, tracking changes and provenance of the RDF statements based on the blockchain technology. All assignments of the topic have been addressed. The student introduces aspects of the blockchain technology, investigates use cases and applies on RDF.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
2. Main written part	*65 (D)*

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:
The thesis text is only 38 pages long + set of listings as an appendix. The text is shorter than is expected for the regular master thesis. However, I have to admit the text is very well written, well structured, readable and there are no useless parts. Factual, logical and formal level of the work is also great. I only miss several sections that can improve the overall quality and answer possible questions; there is no comparison of potential technologies that can be used; it seems to me Corda is considered as the only one choice. I would like to see more details about the design of the SW (e.g. requirements, design, implementation, ..), the thesis covers mainly the overall design and specific parts related to Corda. It mixes design and implementation parts. It would also be nice to have any information what steps should possible adopters do, to use the proposed solution and what are the advantages and disadvantages.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
3. Non-written part, attachments	*80 (B)*

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 result of the thesis is a working solution that fulfils all assignments. The author should more precisely defend the selected technologies. I consider missing comments in source codes as another issue of the provided implementation. It reduces the understandability for interested parties.

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 evaluation supports the idea that solutions based on the blockchain can be used for this scenario. As was already mentioned, it is not clear how difficult is the deployment in the real use case.

Evaluation criterion: *No evaluation scale.*

5. Questions for the defence

Criteria description:
Formulate questions that the student should answer during the Presentation and defence of the FT in front of the SFE Committee (use a bullet list).

Questions:

- Could you present alternative technologies/frameworks enabling blockchain implementations? What are the advantages and disadvantages?
- What are the typical steps that are required for any real deployment? E.g. on the DBpedia?
- What are the issues of the distributed model? E.g. from the distributed queries point of view?

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

6. The overall evaluation

70 (C)

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 thesis is short on the one hand. On the other hand, it contains a lot of theory, implementation and experiments. It is evident that the student understands the topic very well. Although there are several mentioned issues, the student did a nice piece of work mainly as a proof of concept solution.

Signature of the reviewer: