Review report of a final thesis

Czech Technical University in Prague   **Faculty of Information Technology**

Student:	Bc. Jiří Bican
Reviewer:	Ing. Jan Baier
Thesis title:	Implementation of the ACB compression method improvements in the Java language
Branch of the study:	Web and Software Engineering

Date: 30. 1. 2017

Evaluation criterion:	The evaluation scale: 1 to 5.
1. Difficulty and other comments on the assignment	*1 = extremely challenging assignment,* *2 = rather difficult assignment,* ***3 = assignment of average difficulty,*** *4 = easier, but still sufficient assignment,* *5 = insufficient assignment*

Criteria description:
Characterize this final thesis in detail and its relationships to previous or current projects. Comment what is difficult about this thesis (in case of a more difficult thesis, you may overlook some shortcomings that you would not in case of an easy assignment, and on the contrary, with an easy assignment those shortcomings should be evaluated more strictly.)

Comments:
The main task is an ordinary analysis and a new implementation of existing algorithm.

Evaluation criterion:	The evaluation scale: 1 to 4.
2. 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 thesis meets the assignment statement. In Comments indicate parts of the assignment that have not been fulfilled, completely or partially, or extensions of the thesis beyond the original assignment. If the assignment was not completely fulfilled, try to assess the importance, impact, and possibly also the reason of the insufficiencies.

Comments:
The thesis assignment clearly states "Test and compare these variants based on time and space complexity and compression ratios on various corpuses." and there is a promise about various experiments at the beginning of the the measurements part. However, according to the fifth chapter, no comparison between C++ and Java implementation has been done. Additionally, the new improvement (with a "special attention" from the author) was also not tested. Although the assignment mentions various corpuses, only the Cantebury corpus was used. Personally, I would expect at least one graph in the measurement chapter.

Evaluation criterion:	The evaluation scale: 1 to 4.
3. Size of the main written part	*1 = meets the criteria,* ***2 = meets the criteria with minor objections,*** *3 = meets the criteria with major objections,* *4 = does not meet the criteria*

Criteria description:
Evaluate the adequacy of the extent of the final thesis, considering its content and the size of the written part, i.e. that all parts of the thesis are rich on information and the text does not contain unnecessary parts.

Comments:
I consider the experiments inadequate. All other criteria has been met.

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
4. Factual and logical level of the thesis	*85 (B)*

Criteria description:
Assess whether the thesis is correct as to the facts or if there are factual errors and inaccuracies. Evaluate further the logical structure of the thesis, links among the chapters, and the comprehensibility of the text for a reader.

Comments:
The thesis is well structured, terms are defined and described. Provided information is correct. I have only one small rebuke to the conclusion. The inventor of the ACB method is called George Buyanovsky.

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
5. Formal level of the thesis	*60 (D)*

Criteria description:
Assess the correctness of formalisms used in the thesis, the typographical and linguistic aspect s, see Dean's Directive No. 14/2015, Article 3.

Comments:
There are defects in the typography (incorrect types of opening quotes, hyphens and dashes, text overflows; overflows, double dashes and carets in the user manual). The English part of the abstract is not on one page. Typo in English keywords (contextm content). Inconsistent usage of the term Java vs. java.

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

6. Bibliography	90 (A)

Criteria description:
Evaluate the student's activity in acquisition and use of studying materials in his thesis. Characterize the choice of the sources. Discuss whether the student used all relevant sources, or whether he tried to solve problems that were already solved. Verify that all elements taken from other sources are properly differentiated from his own results and contributions. Comment if there was a possible violation of the citation ethics and if the bibliographical references are complete and in compliance with citation standards.

Comments:
Without remarks.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
7. Evaluation of results, publication outputs and awards	75 (C)

Criteria description:
Comment on the achieved level of major results of the thesis and indicate whether the main results of the thesis extend published state-of-the-art results and/or bring completely new findings. Assess the quality and functionality of hardware or software solutions. Alternatively, evaluate whether the software or source code that was not created by the student himself was used in accordance with the license terms and copyright. Comment on possible publication output or awards related to the thesis.

Comments:
The implementation has been done. In my opinion, there is no new or revolutionary approach. The improvements are doubtful, due to the lack of experiments.

Evaluation criterion:	*No evaluation scale.*
8. Applicability of the results	

Criteria description:
Indicate the potential of using the results of the thesis in practice.

Comments:
This thesis provides the ACB method in the Java language and it could be probably used in some sort of Java compression library.

Evaluation criterion:	*No evaluation scale.*
9. Questions for the defence	

Criteria description:
Formulate any question(s) that the student should answer to the committee during the defence (use a bullet list).

Questions:
1. Why did you used only the Cantebury Corpus?
2. How fast/slow is the Java implementation compared to the C++ one?

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
10. The overall evaluation	70 (C)

Criteria description:
Summarize the parts of the thesis that had major impact on your evaluation. The overall evaluation **does not** have to be the arithmetic mean or any other formula with the values from the previous evaluation criteria 1 to 9.

Comments:
All objections has been already written. The thesis is acceptable, I recommend it to the defence.

Signature of the reviewer: