FACULTY
OF INFORMATION
TECHNOLOGY
CTU IN PRAGUE

Supervisor's statement of a final thesis

Student:	Bc. Martin Petráček
Supervisor:	Ing. Tomáš Zahradnický, Ph.D.
Thesis title:	LLVM Obfuscator
Branch of the study:	System Programming

Date: 4. 6. 2018

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:
I consider the assignment of Mr. Petracek to be fulfilled.

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
2. Main written part	*95 (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:
The written part meets criteria for diploma theses. The thesis is methodically divided into 5 chapters clearly dividing design from implementation and from evaluation of the results.

I only find minor typographic glitches in form of overflowing words from the page mirror.

Though there are only 19 references, the bibliography is rich and refers to journal papers, conference papers, books, and web sources.

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
3. Non-written part, attachments	*100 (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 student provided a functional tool capable of obfuscating LLVM internal representation.

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

A product of the thesis is a design and implementation of an obfuscation tool. The tool can be used in development lifecycle and protect intellectual property contained in source code by increasing analysis time and effort. Since the tools is built on LLVM, it can be used with a variety of programming languages.

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 actively worked on the thesis and produced a working obfuscation tool.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
6. The overall evaluation	99 (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:

I hereby do recommend the diploma thesis of Mr. Martin Petracek for defence and grade it with A (excellent).

Signature of the supervisor: