**FACULTY
OF INFORMATION
TECHNOLOGY
CTU IN PRAGUE**

Supervisor's statement of a final thesis

Supervisor:	Ing. Petr Máj
Student:	Bc. Ivo Strejc
Thesis title:	Tiny x86 - Architecture Simulator for Educational Purposes
Branch / specialization:	System Programming
Created on:	31 May 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

Overall, I am extremely pleased with the student's work. While I have some reservations towards the written part (see below), the design and the code itself have exceeded my expectations and I have already used the work actively in the NI-GEN course.

2. Main written part   75 / 100 (C)

The thesis is reasonably written overall, but it is obvious that it would greatly benefit from more improvements. My main complaints are:
(1) the thesis sells itself short - often very interesting design decisions are only briefly mentioned as as such does not really aid in understanding the code.
(2) it is often harder to follow and it would clearly benefit from more examples, figures and text. Not to mention a spell-checker.
On the other side, these might be due to the fact that the student was forced to write in English, for which I am very grateful.

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

I have no comments to the code part of the thesis other than praise for the student. It uses modern C++ standards and balances the complexity and modernity really well. The virtual machine is very well designed and can be easily extended in the future, both in term of instructions and features. The weak point of the code is the compiler, however its creation was intentionally marginalized to allow more time for the development of the VM so I have no objections here.

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

The work has already been used as an integral part of the NI-GEN course. I am extremely pleased with the results and will continue to use it in the future. The code quality and extensibility is excellent and I hope to find more students to build upon this work in the future as well. In terms of publications, I believe the work is interesting enough that it could be presented on education focused venues such as SPLASH-E.

5. Activity of the student

▸ **[1] excellent activity**
   [2] very good activity
   [3] average activity
   [4] weaker, but still sufficient activity
   [5] insufficient activity

Cooperation with the student was excellent throughout the course of the thesis.

6. Self-reliance of the student

   [1] excellent self-reliance
▸ **[2] very good self-reliance**
   [3] average self-reliance
   [4] weaker, but still sufficient self-reliance
   [5] insufficient self-reliance

Student is extremely capable of working independently, seeking advice only when needed with well formulated questions and opinions of his own.

The overall evaluation   100 / 100 (A)

Although the thesis document clearly lacks behind the actual project in its quality, this difference is made worse by the stellar quality of the project itself. On this front I have nothing but praise for the student's efforts. Given the above evaluation, I have no other option than to evaluate the thesis with full marks.

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.

Activity of the student

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.

Self-reliance of the student

From your experience with the course of the work on the thesis and its outcome, assess the student's ability to develop independent creative work.

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.