FACULTY
OF INFORMATION
TECHNOLOGY
CTU IN PRAGUE

Review report of a final thesis

Reviewer:	RNDr. Jakub Klímek, Ph.D.
Student:	Aykut Sahin
Thesis title:	Real-time scheduling algorithms applicable for embedded systems
Branch / specialization:	Web and Software Engineering
Created on:	16 July 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

The assignment is quite straightforward and fulfilled completely.

2. Main written part

50 / 100 (E)

The text is written in a very informal way, containing quite a lot of grammar errors.
The problem is clearly defined, however, it is unclear how the 5 studied scheduling algorithms were selected, and why 5 and not more (or less).
Documentation of how to run the experiment is missing in the text. It is only present in README.md in the code.
There is no discussion about design of the code to be produced and the choices made.
There is only information about how the files from the FreeRTOS implementation were modified.

3. Non-written part, attachments

50 / 100 (E)

The code of the scheduling algorithms is about 400 lines of code, implementing 3 scheduling algorithms in FreeRTOS. The code contains almost no comments. This seems quite weak for a bachelor's thesis.

4. Evaluation of results, publication outputs and awards

50 / 100 (E)

The results are quite informal, and the number of algorithms surveyed and implemented is not representative.

The overall evaluation

50 /100 (E)

The assignment was fulfilled, because it contained no quantitative criteria. However, in a bachelor thesis with a focus on surveying and testing out algorithms, I would expect more than 5 most basic ones to be surveyed, and more than just 3 implemented and experimented with. From a bachelor thesis in the Web and Software Engineering specialization, I would also expect a more formal approach to the software engineering part, such as making the experiment repeatable comfortably using a docker image, creating proper documentation or commenting the code properly.

Questions for the defense

1. How were the 5 studied scheduling algorithms selected? There are many more algorithms, so why these 5?
2. Why are the 3 scheduling algorithms implemented as preprocessor if-then-else blocks in each of the scheduling functions, creating the need to choose the scheduling algorithm at compile time? Could this be done using function pointers, which would also enable us to switch the scheduling algorithm at runtime?

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. 52/2021, 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.

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.