

Review of Bachelor's Thesis

Student: Kobyda Simon
Title: Web Application for Certificate Management (id 22969)
Reviewer: Rychlý Marek, RNDr., Ph.D., DIFS FIT BUT

1. **Assignment complexity** **average assignment**
The assignment is of the average complexity. The student is utilizing existing projects, such as Cockpit and Certmonger.
2. **Completeness of assignment requirements** **assignment fulfilled**
The assignment is fulfilled without any major issues. The evaluation, which is the last point in the assignment, could be more thorough (e.g., by comparison with alternative solutions, by analysis of user feedback, etc.).
3. **Length of technical report** **in usual extent**
The technical report consists of 37 pages from the first to the last chapter, and it is of the usual length.
4. **Presentation level of technical report** **75 p. (C)**
The report has a logical structure that follows the development process of the software (design, implementation, testing). Some parts of Chap. 4 "Implementation" should be in Chap. 3 "Design"; e.g., subsections of Sec. 4.3 are describing a UI, not its implementation. Moreover, sections in Chap. 4 "Implementation" describe elaborate lists of various classes and their properties (which should be in appendices or in the source code documentation) while an overall class diagram is missing as well as a description of interesting implementation issues that had to be solved.
5. **Formal aspects of technical report** **85 p. (B)**
The technical report is written in English and both grammar and style are quite good (occasionally, there are some local issues, e.g., errors in the last but one paragraph on p. 16). Also typographical level of the report is good, despite some minor issues, such as missing or unnecessary dots (p. 6 and p. 15); duplicate words (the 2nd line on p. 9); subsections of Sec. 1.1.1 without numbers are referred to in Sec. 2.5; wrong dashes in item lists (p. 15); labeled paragraphs on pages 20 and 21 should be subsections; etc.
6. **Literature usage** **75 p. (C)**
The bibliography consists of 14 items: technical documentation (13 items) and one book, which is satisfactory. There is an error in the 5th item, which is missing a link and date of citation (it is an online resource). All items are correctly used in the report and it is easy to distinguish adopted content from original contribution of the student.
7. **Implementation results** **90 p. (A)**
The student implemented a module of Cockpit software to manage certificates during their life-cycle. The module is using Certmonger to manage and to operate on the certificates in the back-end, so the student focused mostly on a web user interface and its integration into the Cockpit framework and the Certmonger back-end. The result is a functional application with a very good user interface which supports the most common operations on certificates in files or NSSDB. The application is well-designed and its source code is well-structured, however, there are not much comments in the code (despite its quite elaborate description in the thesis).
8. **Utilizability of results**
The software is a part of the Cockpit project and it is useful for basic certificate management. However, some additional functionality might be implemented, e.g., support of an encrypted NSSDB, uploading certificates via a Web browser, monitoring the usage of certificates, etc.
9. **Questions for defence**
 - There are a lot of classes described in the thesis, but a class diagram is missing. Can you show the class diagram?
 - Explain a role of FreeIPA in your project, e.g., when requesting a new certificate.
 - Is there any feedback from users and/or some case-studies?
10. **Total assessment** **75 p. good (C)**
The result of the thesis is a technical report of an average quality and a good software which might be accepted into a well-established Cockpit project. In my opinion, the thesis should be graded as a **good (C)**.

In Brno 17 August 2020

Rychlý Marek, RNDr., Ph.D.
reviewer