



Supervisor's statement of a final thesis

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Thesis title: Web portal for EFB
Branch / specialization: Web and Software Engineering
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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

I consider the assignment fulfilled with minor objections. The most important is very limited analysis of existing solutions. The chapter is extremely short, naming just 4 other portal systems. However, no comparison of their functions or pricing is provided. Their non-intuitive user interface is mentioned but no proof is given. The systems are not discussed in context of the specific requirements of EFB.

Besides these objections, also the user testing is very limited and the analysis of requirements is not specific enough in some details.

2. Main written part

65 /100 (D)

The text of the thesis extends over 44 pages, including the bibliography. However, although formatted for printing on both sides, it is printed on one side of each page only, extending the book and disturbing the formatting unnecessarily. Regarding the language, it is written in good enough English, although there are several sections of weak formulations. The most crucial formal issue is the bibliography, which exclusively refers to online sources without necessary bibliography details (most importantly the date of reading). Also, no theoretical sources were used, all resources only refers to various technology, framework, tool and application websites.

The thesis starts with the analysis of requirements. However, there is no information about how these requirements were identified and collected. Also, some of the requirements miss certain details explaining, how it should work. Also, the specification of all 3 areas (vacations, HR letters, IT complaints) are very similar, distinguished only in small differences in the process. However, the processes are not explained. Also, the domain model contains several issues (e.g., the HR letter requests are related to only one

manager user, even though it requires two-level approval; IT complaints don't track history of actions done by different users based on changing the assignments). Also, the Holiday quota is not related to any period, which would result in problems for vacation requests at the turn of years.

The analysis of existing solutions is very bad. 4 portal systems are mentioned and declared unsuitable. However, no overview of their functionalities, limitations and prices is given. No context of the necessary system functions and their support in the systems is given. The new system is declared to have more user-friendly user interface, making the system more understandable, but no details of the user interface of the other systems are provided.

The discussion about the chosen technologies is point-less. No alternatives are discussed, the given reasons are too generic and often not relevant (e.g., Java is extensible, so it can be easily modified over and over without causing bugs).

The architecture of the solution is well designed. However, the names for the various types of classes in the individual layers do not respect common conventions (RestController classes in the presentation layer not implementing REST interface but standard HTTP/HTML communication; RestController classes located in the view package/folder; Controller classes in the domain layer for implementation of the business/domain logic). Nevertheless, the application architecture is well described and modelled. On the other hand, the database model section discusses the meaning and related functions for various pieces of information. Also, the text uses the terms of entities and attributes in context of a relational database instead of tables and columns.

The sections "Class model" and "Sequence model" aim at explaining the detailed architecture on the examples of specific functions and their desired implementation. There are three class models presented, all of them being very similar to the others, thus giving no additional value to the understanding. Also, the models don't cover the whole application from top to bottom but only shows the domain layer Controller classes and their dependencies on data layer classes. The presentation layer is not included at all, and details of the data layer are also missing. The Sequence model then discusses two separate situations, but only one of them is visualized.

The implementation chapter presents the tools used for realization, several discussions about various parts of implementation and testing. Some implementation details should rather be discussed in the analytical chapter (Organization's Special Requirements) or design (code architecture, EclipseLink/JPA, DAO interfaces). The testing part discusses unit testing without any statistical summary and user testing. The user testing sections is not very good either. User testing and Usability testing is often substituted. Only 2 users tested the application, which is not even close to enough feedback, moreover when they got instructions on what and how they should do it.

In general, I consider the thesis text below average, but sufficient enough to demonstrate the student's knowledge obtained in the bachelor studies.

3. Non-written part, attachments

75 /100 (C)

The main result of the thesis is the application of EFBPortal. The resulting application works well, implementing all the required functions.

The source code of the application corresponds to the description in the thesis text. It is well structured, respecting the principles of three-layered architecture and separation of concerns. The sources are well commented and the generated code documentation is attached. The biggest issue of the code is the applied naming convention which differs from the standard - controller logic is implemented by RestController classes in the view package, domain-specific logic is implemented by Controller classes, etc.

Regarding the code quality, I would like to point out the MailController class which implements the logic of sending email notifications. The class contains all e-mail texts directly in the code, resulting in a class of 3334 lines of code and preventing any kind of localization or text management.

Besides the code, also the resulting application, installation and user guide, and installation SQL scripts are attached. Also, the model of the system is attached with the sources for all the diagrams in the thesis text.

4. Evaluation of results, publication outputs and awards 90 /100 (A)

The result of the thesis is the application for EFP. The application supports all the required processes identified in the requirements analysis. The resulting application was tested by two employees of EFB, proving that the way of functions' implementation meets the needs. However, more testing would be needed before it can be accepted as verified. Although developed some time ago, it was not yet deployed to the target environment and it is not used by EFB yet.

5. Activity of the student

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

The student attended several consultations but most of the thesis was realized individually. Also, some of my feedback and objections were not reflected at all.

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

Most of the thesis was realized by the student individually, without the need to help him out.

The overall evaluation 65 /100 (D)

In conclusion, I consider the thesis below average. The resulting application is working well, implementing the required functionalities based on well-design architecture. However, the textual part of the thesis shows many flaws. To sum it up, I recommend the thesis for acceptance and suggest to classify it with grade D.

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.

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.