

# Supervisor's statement of a final thesis

Czech Technical University in Prague

Faculty of Information Technology

**Student:** Bc. Lukáš Löwinger  
**Supervisor:** Ing. Miroslav Bureš, Ph.D.  
**Thesis title:** Systém pro generování umělé aplikace pro testovací účely  
**Branch of the study:** Web and Software Engineering

**Date:** 27. 5. 2016

<p><i>Evaluation criterion:</i></p> <p><b>1. Difficulty and other comments on the assignment</b></p> <p><i>Criteria description:</i> Characterize this final thesis in detail and its relationships to previous or current projects. Comment what is difficult about this thesis (in case of a more difficult thesis, you may overlook some shortcomings that you would not in case of an easy assignment, and on the contrary, with an easy assignment those shortcomings should be evaluated more strictly.)</p> <p><i>Comments:</i> The aim of the diploma thesis is to create a generator of an artificial web application with inserted artificial defects. Together with this, process and CRUD model of the application is generated. The application can serve to verify efficiency of particular software testing techniques. It can also serve for educational purposes.</p> <p>I consider this as difficult assignment regarding a number of issues arising from this task.</p> <p>I was even considering ranking this thesis difficulty as "extremely challenging".</p>	<p><i>The evaluation scale: 1 to 5.</i></p> <p><b>1 = extremely challenging assignment,</b> <b>2 = rather difficult assignment,</b> 3 = assignment of average difficulty, 4 = easier, but still sufficient assignment, 5 = insufficient assignment</p>
<p><i>Evaluation criterion:</i></p> <p><b>2. Fulfilment of the assignment</b></p> <p><i>Criteria description:</i> Assess whether the thesis meets the assignment statement. In Comments indicate parts of the assignment that have not been fulfilled, completely or partially, or extensions of the thesis beyond the original assignment. If the assignment was not completely fulfilled, try to assess the importance, impact, and possibly also the reason of the insufficiencies.</p> <p><i>Comments:</i> All assignment parts were fulfilled. I raise no objections regarding the scope of the presented work.</p>	<p><i>The evaluation scale: 1 to 4.</i></p> <p><b>1 = assignment fulfilled,</b> 2 = assignment fulfilled with minor objections, 3 = assignment fulfilled with major objections, 4 = assignment not fulfilled</p>
<p><i>Evaluation criterion:</i></p> <p><b>3. Size of the main written part</b></p> <p><i>Criteria description:</i> Evaluate the adequacy of the extent of the final thesis, considering its content and the size of the written part, i.e. that all parts of the thesis are rich on information and the text does not contain unnecessary parts.</p> <p><i>Comments:</i> I consider the implemented system as documented in satisfactory manner. Especially I appreciate well-written pseudocode documentation of used algorithms.</p>	<p><i>The evaluation scale: 1 to 4.</i></p> <p><b>1 = meets the criteria,</b> 2 = meets the criteria with minor objections, 3 = meets the criteria with major objections, 4 = does not meet the criteria</p>
<p><i>Evaluation criterion:</i></p> <p><b>4. Factual and logical level of the thesis</b></p> <p><i>Criteria description:</i> Assess whether the thesis is correct as to the facts or if there are factual errors and inaccuracies. Evaluate further the logical structure of the thesis, links among the chapters, and the comprehensibility of the text for a reader.</p> <p><i>Comments:</i> The thesis is logically structured. In Chapter 2.9. several formal definitions are used and they help to define all used concepts exactly. Despite some of them may seem a bit naive from the researcher's point of view, we need to appreciate student's effort to write exact technical text using them.</p>	<p><i>The evaluation scale: 0 to 100 points (grade A to F).</i></p> <p>90 (A)</p>
<p><i>Evaluation criterion:</i></p> <p><b>5. Formal level of the thesis</b></p> <p><i>Criteria description:</i> Assess the correctness of formalisms used in the thesis, the typographical and linguistic aspects, see Dean's Directive No. 12/2014, Article 3.</p>	<p><i>The evaluation scale: 0 to 100 points (grade A to F).</i></p> <p>90 (A)</p>

**Comments:**

I don't have any objections regarding formal level of the thesis. Only references should be enriched, but I comment on this in the following point.

*Evaluation criterion:* *The evaluation scale: 0 to 100 points (grade A to F).*  
**6. Bibliography** **70 (C)**

*Criteria description:*  
Evaluate the student's activity in acquisition and use of studying materials in his thesis. Characterize the choice of the sources. Discuss whether the student used all relevant sources, or whether he tried to solve problems that were already solved. Verify that all elements taken from other sources are properly differentiated from his own results and contributions. Comment if there was a possible violation of the citation ethics and if the bibliographical references are complete and in compliance with citation standards.

*Comments:*  
The most of the references are web citations. I would recommend to add more classical literature sources.

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

*Criteria description:*  
Comment on the achieved level of major results of the thesis and indicate whether the main results of the thesis extend published state-of-the-art results and/or bring completely new findings. Assess the quality and functionality of hardware or software solutions. Alternatively, evaluate whether the software or source code that was not created by the student himself was used in accordance with the license terms and copyright. Comment on possible publication output or awards related to the thesis.

*Comments:*  
The result of the thesis is design and implementation of system for generation of an artificial application, which is well applicable in the domain it is intended for - testing of efficiency of created test cases in terms of their capacity to disclose non-trivial defects caused by combinations of tested system functions, or, combinations of system functions and particular data entities.

*Evaluation criterion:* *No evaluation scale.*  
**8. Applicability of the results**

*Criteria description:*  
Indicate the potential of using the results of the thesis in practice.

*Comments:*  
I consider the applicability of the implemented system very good - it will be used further on in my research experiments in evolution of more efficient software test design techniques.

*Evaluation criterion:* *The evaluation scale: 1 to 5.*  
**9. Activity and self-reliance of the student**

- 9a:  
**1 = excellent activity,**  
2 = very good activity,  
3 = average activity,  
4 = weaker, but still sufficient activity,  
5 = insufficient activity
- 9b:  
**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:*  
Review student's activity while working on this final thesis, student's punctuality when meeting the deadlines and consulting continuously and also, student's preparedness for these consultations. Furthermore, review student's independency.

*Comments:*  
Lukas Lowinger was working on this non-trivial thesis very actively and regularly consulted the issues. I must especially rate his independency: just a high-level specification was enough and in the most of cases, Lukas has designed reasonable solution, which just presented to me for approval. No micro-management was needed during his work. Excellent working style.

*Evaluation criterion:* *The evaluation scale: 0 to 100 points (grade A to F).*  
**10. The overall evaluation** **90 (A)**

*Criteria description:*  
Summarize the parts of the thesis that had major impact on your evaluation. The overall evaluation **does not** have to be the arithmetic mean or any other formula with the values from the previous evaluation criteria 1 to 9.

*Comments:*  
Difficult experimental work full of obstacles and issues related to the nature of the problem. Nevertheless successfully finished, and well-applicable system fulfilling its goals was presented. The system will be used in future research projects. I appreciate student's very active and mature way of working during this project. If any "best thesis awards" are organized for the master theses this year, I would humbly recommend this thesis to be considered for submitting.

Signature of the supervisor: