Supervisor's statement of a final thesis

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Supervisor:	Ing. Jan Krákora, PhD.
Thesis title:	Analysis of an IoT solution for assessment of the physical difficulty of tourist tracks using smart wearables
Branch of the study:	Web and Software Engineering

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Evaluation criterion:	The evaluation scale: 1 to 4.
1. Fulfilment of the assignment	_**1 = assignment fulfilled,**_ _2 = assignment fulfilled with minor objections,_ _3 = assignment fulfilled with major objections,_ _4 = assignment not fulfilled_

Criteria description:
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.

Comments:
I declare that objectives are defined sufficiently and in line with the assignment and I have some minor comments on section architecture and PoC.

Architecture section describes the basic configuration of the solution and could be more descriptive, i.e. some cloud solution examples like Azure or Amazon Web Services would be fancy. In spite of that I see enough content to give a reader a good overview about the proposed architecture.

Proof of concept section is present as unfinished but I see the results of this section correct. The section shows the real obstacles and difficulties and gives a reader insight to this process, i.e. documentation is going to be still step after software when there are no human readable software development standards defined, the API stays proprietary when it is a company business policy or when it is the only money maker software component, and finally, the software tool chaining is a complex task especially when the continuous integration / continuous deployment process is poor or missing.

Evaluation criterion:	The evaluation scale: 0 to 100 points (grade A to F).
2. Main written part	_100 (A)_

Criteria description:
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.

Comments:

I declare that the thesis is adequate to its content and all parts of the thesis are content full and necessary. The content is correct and the logical structure keeps the reader's attention. Formal notations are used correctly. The typography is good, the typography of the equations used in the fitness section could be improved. The level of English used is very high. The used quotations and references are properly cited, especially the human fitness analysis in introduction referencing physiology standards or searches of compared solutions Strava, Endomondo, Garmin etc. Software used for the work has been used in accordance with its licence terms.

The aim of this thesis is to analyze, design and implement a proof of concept of IoT solution that allows an user to manage his fitness and track his activities. Moreover the solution offers users to inspect and assess other users' fitness to establish a fitness equivalent team. Especially this "Hike with friends" feature makes the application unique, the user can reduce in advance the risk of injury to tourists for challenging hiking trails.

The solution is well analysed and defined by user stories, i.e. requirements with a business value, that can be both easily managed by stakeholders to keep on business value track and can be simply transformed to tasks by a product owner to be implemented by a software team. The application design is extensive and well linked to the analysis part. It is very well defined by mockup wireframes required by GUI and Ux designers and testers.

As written above the architecture section could be more descriptive, nevertheless I see the content descriptive enough to give an architecture overview and the PoC section presents real-life results that are very important for further improvement of the solution.

Evaluation criterion:	*The evaluation scale: 0 to 100 points (grade A to F).*
3. Non-written part, attachments	*100 (A)*

Criteria description:
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.

Comments:

Although software development is not the main goal of the work, the author created a set of proof of concept applications, that are an appendix to the work. The software is structured well and properly commented.

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

Criteria description:
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.

Comments:

Although there is a wide range of fitness applications available the proposed solution has a potential to be competitive especially due to the planning feature that can bring something new to the market of the fitness applications.

Evaluation criterion:	*The evaluation scale: 1 to 5.*
5. Activity and self-reliance of the student	*5a:* **1 = excellent activity,** 2 = very good activity, 3 = average activity, 4 = weaker, but still sufficient activity, 5 = insufficient activity *5b:* **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:
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 (5a). Assess the student's ability to develop independent creative work (5b).

Comments:

Zuzana is a very reliable, systematic and forward-thinking human. She was responsible for the goals we set, and has always been very well prepared for consultation, with very encouraging ideas. I have really enjoyed the cooperation with her.

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

Criteria description:
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.

Comments:
As mentioned above, the thesis is very well written and advanced. I really like the analytical part and the graphic design part and I also appreciate the admission in the conclusion that not everything worked, because even that is a relevant result.

Overall I rate the thesis as excellent. A assess the thesis by grade A.

Signature of the supervisor: