OPPONENT´S REVIEW OF BACHELOR'S THESIS

Name of student: Serhii Konar

Thesis title: Personalized assistant in emergency situations

Reviewer : Martina Husáková

Thesis objective: The goal of the bachelor thesis is to conduct a research on navigating systems and develop a mobile application to assist in emergency situations caused by natural hazard.

Criteria required for evaluation	Evaluation scale (grade)					
	A	B	C	D	E	F
Content relevant to the field of study	☒	☐	☐	☐	☐	☐
Setting and meeting objectives	☐	☐	☐	☐	☒	☐
Treating theoretical aspects of the topic	☐	☐	☐	☒	☐	☐
Treating practical aspects of the topic	☐	☐	☒	☐	☐	☐
Adequacy of applied methods and their use	☐	☐	☒	☐	☐	☐
Depth and accuracy of implemented analysis	☐	☐	☐	☐	☒	☐
Dealing with literature sources	☐	☐	☐	☒	☐	☐
Logical structure and composition of the thesis	☐	☐	☐	☐	☒	☐
Language and terminology	☐	☐	☒	☐	☐	☐
Formal layout	☐	☐	☐	☐	☐	☒
Student´s contribution	☐	☐	☒	☐	☐	☐
Practical applicability of results	☐	☐	☒	☐	☐	☐

Comments to results of anti-plagiarism check:
The bachelor thesis is similar in 6% with sources in the system named as Odevzdej.cz.

Comments and recommendations:
Type of thesis:
- On the first and second page, it should be more obvious which kind of thesis is prepared by the student. *Bachelor's/Master's thesis* declaration is confused.

Formatting:
- Formatting of the whole document is unsatisfactory. I recommend to format the whole text into the block style (except figures, tables, graphs) and to ensure more spaces between rows of the text.
- It seems that citations of figures have different formatting style then the rest of the text.

- The figures should be numbered for better referencing and counting.
- The subchapter 1.1 has wrong number on the page 10. It is under the chapter 2.
- Some textual parts have different formatting style, e. g. see the page 12, 13, 15.
- Figures do not have titles. Only references are mentioned below them.

Language and structure of the thesis:
- The second sentence on the page 11 is not completed. Maybe it is hidden by the figure.
- Some paragraphs should be merged according to their content, for example see the page 12: "Hybrid apps" paragraph and "However ...", see the page 13: "Variety of Android devices" paragraph together with the paragraph "Also developers should consider..."
- Passive voice should be used in the thesis ("I applied ...", "I decided ...", "We made ...", "...", is not suitable.)
- Suggestion: The list of all figures would be beneficial.

Citations:
- Hyperlink on the page 17 does not follow citation style which is used in the rest of the text.
- Some citations have incorrect position, e. g. 2.3.2 MVVM architecture and (Guide to App Architecture...).
- Citation style used on the page 20 is not correct ("How to implement the MVVM pattern"). This is also true for other sources. Whole name of the source should not be mentioned directly in the text (in-text citation), but in the References section.
- Name of the author is missing for the source on the page 20. The author exists.
- It is not obvious whether the UML use case diagram on the page 27 is created by the student. If it is created by the student, it is necessary to mention it in the thesis. The same is true for the next UML class diagrams (e. g. on the page 28, 29) and for the figure on the page 38, 40.
- I did not find the citation (Use Cases, 2022) in the References section. Maybe, the figure is created by the student.
- The title (citation) of the figure with the UML class diagram on the page 29 is not mentioned.
- The title (citation) of the figure with the Cloud Firestore (page 32) has wrong possition and position of the figure is not suitable.

UML-based modelling:
- UML class diagram on the page 28: multiplicity is missing between MainActivity class and MapsFragment class.
- Type of relation between MapsFragment and MainViewModel and between MapsFragment and SheltersViewModel should be different.
- Suggestion: The student mentions which software design patterns have been used in the thesis, see page 24 and 25. It seems that these figures are taken from the other authors. It would be better to mention own UML class diagrams depicting these design patterns.

Goals of the thesis:
- Conducting a research on navigating systems is one of the goal of the thesis. Student mentions only three emergency-related applications on the page 7 and 8. This is really a short list. More applications exist and should be mentioned.

Additional notes:
- The student mentions that Android app is published in the GitHub repository. GitHub link is not available.
- Suggestion: It would be better to include the *.eap(s) file(s) into the thesis.

Overall assessment and reasons for the final grade:

The student presents design and implementation of the mobile Android application assisting during tsunami events. The positive aspect of the thesis is that the student proves the ability to connect different technologies and strategies for building the useful application, especially: usage of the design patterns, UML-based modelling, programming in Kotlin, usage of the Google Maps API, Firebase, Retrofit and frontend development (UI/UX). The student managed the technological part of the thesis. Unfortunatelly, this cannot be said about formal part of the thesis. Structure of the thesis is not well designed (numbering of some chapters/subchapters should be improved, some paragraphs should be merged). Formatting style for some citations is not suitable. Figures do not have titles (only citations are included for majority of figures). Possitioning of some figures is not suitable. In case of some figures, it should be clear whether they have been created by the student or not. In case of the modelling part of the thesis, some minor mistakes are inside of the UML diagrams. In the view of the goal "to conduct the research on navigating systems", it is not fully achieved. Collection of existing apps for emergency/disaster management should be extended. These drawbacks dramatically decrease the quality of the whole work. I believe that the above mentioned comments and suggestions will help the student to improve the thesis.

Questions for oral defence:
1. Is your application available in public? If yes, how is it possible to use it in public (how to download/installation (not) necessary)?
2. Did you follow any methodological guidelines for the elaboration and defence of the bachelor thesis? If you used them, which ones did you use?
3. Which citation style did you use in your thesis?

I recommend the thesis for oral defence.

Suggested final grade: F

Hradec Králové, 30/08/2022

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signature