



SUPERVISOR'S EVALUATION OF THE BACHELOR'S THESIS

Student: Mohammed Syamand Yaba

Supervisor: Tomáš Vogeltanz

Study program: **Software Engineering**
 Study course/Specialization: -
 Academic year: **2022/2023**

Bachelor's Thesis topic: **Performance Comparison Between Entity Framework Core 6 and Dapper**

Evaluation:

| | A | B | C | D | E | F |
|---|--------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|--------------------------|
| Evaluation: A – Best; F - Unsatisfactory | | | | | | |
| 1. Fulfilment of all points of the assignment | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Suitability of chosen resolution methods | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Division of work (chapters, subchapters, paragraphs) | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Working with literature and citations | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5. Level of linguistic elaboration | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Formal level of work | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Theoretical part elaboration quality | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Practical part elaboration quality | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Achieved results of the work | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 10. Contribution of the thesis and its exploitation | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 11. Cooperation of thesis author with the supervisor | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

Result of the plagiarism test:

The work was assessed in terms of plagiarism with the result 0% identity. Work is not plagiarism.

Overall evaluation of the thesis:

The resulting mark is not the average of all of the abovementioned evaluations. The mark is awarded by the thesis supervisor according to their deliberations and the ECTS classification scale:

A – Excellent, B – Very good, C – Good, D – Satisfactory, E – Sufficient, F – Insufficient.
 Grade F also means “I do not recommend this thesis for defence.”

I recommend this diploma thesis for its defence and suggest the following evaluation:
D - Satisfactory.
In the case of an “F – Insufficient” grade, provide comments and the shortages of the thesis and the reasons for this assessment.

This bachelor thesis meets the conditions and can therefore be accepted. However, it has several flaws and could have been handled better.

The first page contains different text format than it should be (shadows are probably applied to characters).

I don't like the first heading named "LITERATURE REVIEW", there should be rather "Web Technologies" or something similar. In the thesis, there are usually too long paragraphs - text

should be more structured to make it easier to read. Advantages and disadvantages of the Dapper and EF Core should be at the end of their parent chapters (for example, advantages and disadvantages are placed correctly in chapter 1.1). I told the student about these problems during the consultations. Some other formal errors remain, for example: figure 60 has caption above the figure 61. The passive voice is preferred in technical writing but student sometimes uses the words "we", "my", "our".

Books should be used in the bibliography (at least 3-5 books), but there is no book, only websites. Moreover, I found empty square brackets in the chapter 2.6: "The third implementation is done by a programmer who has already compared both dapper and Entity Framework by using the .Net benchmark, which is a separate open-source benchmark []". Thus, some citation is missing. In addition, I cannot find any citation for JMeter library. Did I miss the citation?

I like that there is an attempt to implement dependency injection in the web API code. However, interfaces were created for each framework separately, same as the controllers were. Then, code is duplicated and lacks possibility to be easily extended for testing the performance of other frameworks.

Structure of the practical part (analysis) is confusing sometimes: first, the methods of controllers are shown for both frameworks, then the same methods of controllers are show for each framework separately, and after that, the services and the model are presented. The code is shown to the reader in reverse order (I told the student about that during one consultation). For example, the "Books" entity is used before the reader knows what the entity contains. Moreover, the class "Books" could be same for both frameworks but there are two same entities (attributes could have been avoided in EF Core version too). Same can be said about classes Stats and CallResults.

There could be more performance tests, for example with data manipulation in several linked tables (using foreign keys).

The content of the attachment file is confusing - there is no description of what the folders contain. DotNetBenchmark project cannot be compiled without changes. NuGet package installation and significant code changes are necessary - for example almost all test classes are missing. In DeleteTest class, "bookDbContext" class is used but "BookDbContext" should be used instead, and so on. In conclusion, the solution (for DotNetBenchmark) which was submitted is not completed and cannot be run.

Moreover, in the attachment, there are two solutions with two web APIs: one for HTTP and one for JMeter. Each contains two projects: one for Dapper, the other for EF Core. Nevertheless, I don't think there should be any difference in the codes. Why are two solutions in the attachment for APIs? Where is the difference in the implementation? The ideal implementation should contain one solution with one project for both frameworks (ORM framework would be switched using DI).

The student mostly consulted his work with Luis Antonio Beltran Prieto at first. The most consultations with me were two weeks before submission. There was no time to solve all the flaws.

The bachelor thesis is satisfactory.

Date: 1. 6. 2023

Thesis Supervisor's Signature: