THESIS SUPERVISOR'S REPORT

I. IDENTIFICATION DATA

Thesis title:	Asynchronous communication in microservice architecture using Apache Kafka
Author's name:	Nurkhozhin Arlan
Type of thesis :	bachelor
Faculty/Institute:	Faculty of Electrical Engineering (FEE)
Department:	Department of Computer Science
Thesis reviewer:	Ing. Kyrylo Bulat
Reviewer's department:	System Testing IntelLigent Lab

II. EVALUATION OF INDIVIDUAL CRITERIA

Assignment	**ordinarily challenging**

How demanding was the assigned project?

The student needed to explore and compare various software architectures and communication styles. Additionally, they had to conduct an in-depth study of Apache Kafka technology to build an application demonstrating its practical benefits.

Fulfilment of assignment	**fulfilled**

How well does the thesis fulfil the assigned task? Have the primary goals been achieved? Which assigned tasks have been incompletely covered, and which parts of the thesis are overextended? Justify your answer.

The student completed all the tasks as specified. Before starting the practical part of the project, the student thoroughly discussed software architectures, synchronous and asynchronous communication styles, real-world applications, and Apache Kafka. Each section includes visual representations such as architecture diagrams, graphs, and supporting images. The student also successfully developed an application to showcase the usage and advantages of Apache Kafka.

Activity and independence when creating final thesis	**A - excellent.**

Assess whether the student had a positive approach, whether the time limits were met, whether the conception was regularly consulted and whether the student was well prepared for the consultations. Assess the student's ability to work independently.

The student was very proactive during the whole project and finished all the parts independently while regularly asking for my feedback. The student met all time limits and was always one step ahead of the plan.

Technical level	**A - excellent.**

Is the thesis technically sound? How well did the student employ expertise in his/her field of study? Does the student explain clearly what he/she has done?

The thesis discusses different software architecture concepts in detail. The student utilizes a standard set of technologies to develop applications based on microservice architecture, which is appropriate considering the topic and content of their work.

The student demonstrated a deep understanding and practical experience with application development by selecting a complex domain for building the prototype and effectively implementing it.

Formal level and language level, scope of thesis	**B - very good.**

Are formalisms and notations used properly? Is the thesis organized in a logical way? Is the thesis sufficiently extensive? Is the thesis well-presented? Is the language clear and understandable? Is the English satisfactory?

The work is well-structured and sufficiently extensive, and most parts are adequately explained. Although the implementation chapter contains many implementation concepts and terms not mentioned in previous chapters, the student explained them appropriately. The student used clear and understandable English.

Selection of sources, citation correctness	**B - very good.**

Does the thesis make adequate reference to earlier work on the topic? Was the selection of sources adequate? Is the student's original work clearly distinguished from earlier work in the field? Do the bibliographic citations meet the standards?

The student cited references from nearly 50 sources, such as books, technology documentation, and online resources, to support his statements. The student's original work is distinguished from earlier work in the field.

Additional commentary and evaluation (optional)

Comment on the overall quality of the thesis, its novelty and its impact on the field, its strengths and weaknesses, the utility of the solution that is presented, the theoretical/formal level, the student's skillfulness, etc.

Please insert your comments here.

III. OVERALL EVALUATION, QUESTIONS FOR THE PRESENTATION AND DEFENSE OF THE THESIS, SUGGESTED GRADE

Summarize your opinion on the thesis and explain your final grading.

The student showcased their abilities to do research in the field of software architecture and apply theoretical knowledge in practice. Moreover, the student assessed the pros and cons of the chosen approach and technologies, which helped identify areas for improvement.

The student worked responsibly and reliably. The results of the work are adequate and allow for further expansion.

The grade that I award for the thesis is **A - excellent.**

Date: **5.6.2024**   Signature: *KyryloBulat*