

# Poznan University of Technology

**Blockchain Technology And Quantum Computation  
Project Evaluation**

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# **Project Evaluation**

# Project Requirements: Blockchain Technology and Quantum Computation

## Simple Blockchain Implementation

**Objective:** The objective of this project is to implement a basic blockchain structure that can be used to store and verify transactions. The blockchain should include the necessary components such as blocks, transactions, and cryptographic mechanisms to ensure data integrity and security.

**Project Format:** The project can be done individually or in groups of two.

# Project Requirements: Blockchain Technology and Quantum Computation

## Requirements

01. The blockchain should be implemented using a programming language of your choice with no restrictions.
02. The blockchain should support the addition of new blocks containing transaction data, ensuring secure storage.
03. Cryptographic mechanisms such as hashing and digital signatures should be employed to ensure the integrity and security of the data. External libraries like OpenSSL can be used for cryptographic functionalities.
04. Consensus mechanisms such as proof-of-work or proof-of-stake should be implemented to ensure the validity of the blocks.

# Project Requirements: Blockchain Technology and Quantum Computation

## Requirements (cont'd)

- 05. The blockchain should include a user interface allowing users to add and view transactions, as well as to observe the current state of the blockchain.
- 06. Basic security features such as authentication and access control should be incorporated to prevent unauthorized access to the blockchain.
- 07. The blockchain should be thoroughly tested and evaluated for both its performance and security.

# Project Requirements: Blockchain Technology and Quantum Computation

## Deliverables

01. Source code for the blockchain implementation.
02. A report, written using LaTeX, describing the implementation, including design decisions, implementation details, and test results.
03. A short (5-minute) demonstration of the blockchain implementation, showcasing the process of adding transactions, verifying blocks, and viewing the blockchain's state.

**All deliverables must be committed to a public repository before the final meeting.**

# **Project Requirements: Blockchain Technology and Quantum Computation Evaluation**

The project will be evaluated based on the following criteria:

01. Completeness and correctness of the implementation.
02. Effective use of cryptographic mechanisms to ensure data integrity and security.
03. Proper implementation of consensus mechanisms to ensure the validity of the blocks.
04. Design and usability of the user interface.
05. Implementation of security features and measures to prevent unauthorized access.
06. Performance and scalability of the blockchain implementation.
07. Quality and clarity of the report and demonstration.

The project will be presented during the final meeting.

# **Project Requirements: Blockchain Technology and Quantum Computation**

## **Evaluation**

Here's a point system based on the project requirements for grading:

01. Completeness and correctness of the implementation: 20 points
02. Effective use of cryptographic mechanisms: 15 points
03. Proper implementation of consensus mechanisms: 15 points
04. Design and usability of the user interface: 10 points
05. Implementation of security features and measures: 10 points
06. Performance and scalability of the blockchain implementation: 15 points
07. Quality and clarity of the report: 10 points
08. Quality and clarity of the demonstration: 5 points

Total: 100 points



# Project Requirements: Blockchain Technology and Quantum Computation

## Evaluation

60 - 67% ➡ 3.0

68 - 75% ➡ 3.5

76 - 83% ➡ 4.0

84 - 91% ➡ 4.5

92 - 100% ➡ 5.0

The grading will be based on the extent to which each requirement is met, the effectiveness of the implementation, and the overall quality of the project. The points can be assigned based on the evaluation of the project's deliverables, including the source code, report, and demonstration.

# Thank you

Feel free to reach me via [LinkedIn](#)

***Fin***