

UNIVERSITI TEKNOLOGI MARA

**IMPLEMENTATION OF BLOCKCHAIN TECHNOLOGY
IN ONLINE VOTING SYSTEM WITH ETHEREUM AND
METAMASK**

NURRIZA SYAFIQAH BINTI MOHD ROZALI

**BACHELOR OF COMPUTER SCIENCES (HONS). DATA
COMMUNICATION AND NETWORKING**

July 2022

SUPERVISOR APPROVAL

IMPLEMENTATION OF BLOCKCHAIN TECHNOLOGY IN ONLINE VOTING SYSTEM WITH ETHEREUM AND METAMASK

By

NURRIZA SYAFIQAH BINTI MOHD ROZALI

2019415514

This proposal was prepared under the supervision of the project supervisor, Muhamad Arif Hashim. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfilment of the requirements for the degree of Bachelor of Computer Sciences (HONS.) Data Communication and Networking.

Approved by

.....

Muhamad Arif Hashim,
Project Supervisor.

JULY 21, 2022

STUDENT DECLARATION

I certify that this proposal and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

.....

NURRIZA SYAFIQAH BINTI MOHD ROZALI

2019415514

JULY 21, 2022.

ABSTRACT

Election is a method of selecting representatives that is based on justice, integrity, and democratic principles. The voting mechanism allows voters to vote for a candidate during the election. In essence, the voting system can directly affect political science, social science, and economics. Thus, the voting system's idea must respond and be carefully evaluated before being implemented. It is critical to protect voters' votes to preserve based on the integrity and reliability of online voting from any kind of inside or outside manipulation. Therefore, this project proposed an implementation of Blockchain technology in the online voting system as the solution. Blockchain is one of the emerging technologies with strong cryptographic foundations enabling applications to leverage these abilities to achieve resilient security solutions. Based on the functionality testing, this project successfully implemented the blockchain technology to strengthen the online voting system.

CONTENT

PAGE

SUPERVISOR APPROVAL
STUDENT DECLARATION.....
ACKNOWLEDGEMENT.....
ABSTRACT.....
LIST OF FIGURES
FIGURE PAGE.....
LIST OF TABLES
TABLE PAGE.....
LIST OF ABBREVIATIONS.....
CHAPTER 1	1
INTRODUCTION.....	1
1.1 Background of Study.....	1
1.2 Problem Statement.....	4
1.3 Objectives.....	8
1.4 Scope of Project	8
1.5 Significance of Project.....	9
1.6 Expected Outcome.....	10
CHAPTER 2	11
2.1 Online Voting.....	11
2.1.1 Small-scale Election.....	12
2.1.2 Functional Requirements	13
a) Eligibility.....	13
b) Voter Privacy.....	13
c) Voters Verifiability.....	14
d) Auditability and Accuracy	14