

UNIVERSITI TEKNOLOGI MARA

**SECURE EXAMS QUESTION
MANAGEMENT SYSTEM BASED ON
BLOCKCHAIN TECHNOLOGY**

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ABSTRACT

The Secure Exams Question Management System (SEQM) is a web application that operates on peer-to-peer networks and are based on the emerging blockchain technology. This web application was developed for the Universiti Teknologi Mara (UiTM) staff to securely upload and store examination question. Blockchain is utilize once the file hash has been upload to InterPlanetary File System (IPFS) and store the hash that were generated from it inside the Ethereum Blockchain. The users are also able to share the file hash with each other. The benefits of using this system are that there is no centre point of failure such as database breaches or the server is busy. Furthermore, in term of security, once the file has been upload, no one's could temper with the file hash, as it is store inside the blockchain.

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CHAPTER 1

INTRODUCTION

In this chapter, a brief explanation regarding projects background and other related component for detailing project proposed will be explain.

1.1 Background of Study

In this era of advanced technology, there is a technology that has been the talked of town since January 2009 that was invented by Satoshi Nakamoto. Bitcoin was invented using the concept of peer-to-peer electronic cash system that uses cryptography. Thus, create a new path for cybersecurity to protect their sensitive data by using the blockchain, which is the main concept behind most of the crypto currency available now.

Besides cryptocurrency, blockchain have also slowly making its way into other fields such as crowd funding, voting system, charity, networking and the internet of things, etc. There are many other fields where the technology of blockchain is implemented to further enhance its security and data management.

This project will be focus on more about how the blockchain technology can help to secure the digital asset by providing immutability, transparency, availability and validate the integrity of the digital asset. With blockchain, it allows data or information to be distributed but not copied throughout the network. Not only that, the data cannot be corrupted, because altering any information on the blockchain would mean override the entire network which will cost a huge amount of computing power. This is because, a block in a blockchain contained the hashes of the previous block and the block is distributed across all the nodes. Every time a new block is created, the nodes in the network will verify whether the block is valid before adding it into the blockchain.