

VERIFYING AND SECURING CREDENTIALS THROUGH BLOCK CHAIN



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Presented to:-

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BLOCKCHAIN

- ❑ A blockchain is a specific type of database.

DATABASE

- ❑ A database is a collection of information that is stored electronically on a computer system. Information, or data, in databases is typically structured in table format to allow for easier searching and filtering for specific information.
- ❑ Spreadsheets are designed for one person, or a small group of people, to store and access limited amounts of information. In contrast, a database is designed to house significantly larger amounts of information that can be accessed, filtered, and manipulated quickly and easily by any number of users at once.

DATABASE

- ❑ Large databases achieve this by housing data on servers that are made of powerful computers. These servers can sometimes be built using hundreds or thousands of computers in order to have the computational power and storage capacity necessary for many users to access the database simultaneously. While a spreadsheet or database may be accessible to any number of people, it is often owned by a business and managed by an appointed individual that has complete control over how it works and the data within it.

DATABASE vs. BLOCKCHAIN

DATABASE

A blockchain collects information together in groups, also known as blocks, that hold sets of information. Blocks have certain storage capacities and, when filled, are chained onto the previously filled block, forming a chain of data known as the “blockchain.” All new information that follows that freshly added block is compiled into a newly formed block that will then also be added to the chain once filled.

BLOCKCHAIN

A database structures its data into tables whereas a blockchain, like its name implies, structures its data into chunks (blocks) that are chained together. This makes it so that all blockchains are databases but not all databases are blockchains. This system also inherently makes an irreversible timeline of data when implemented in a decentralized nature. When a block is filled it is set in stone and becomes a part of this timeline. Each block in the chain is given an exact timestamp when it is added to the chain.

CREDANTALS THROUGH BLOCKCHAIN

- ❑ It differs from a typical database in the way it stores information; blockchains store data in blocks that are then chained together.
- ❑ As new data comes in it is entered into a fresh block. Once the block is filled with data it is chained onto the previous block, which makes the data chained together in chronological order.
- ❑ Different types of information can be stored on a blockchain but the most common use so far has been as a ledger for transactions.
- ❑ Blockchains are immutable, which means that the data entered is irreversible.

PROBLEM OBJECTIVE

- This system uses blockchain to store the genuine certificates in digital form and verify them firmly whenever needed without delay.
- This system make sure the degrees, once verified, can have an immutable online presence for future references.
- It also acts a bridge between institutions and industries.
- The institutions can store the candidate's academic credentials on this safe platform.

Problem Statement

- Fake certificates are an alarming issue especially in a country like Nepal, which is highly corrupt in every field. The officials out here are easily bribed and in no time, people get a fake certificate.
- So, to control this plagiarism, we have decided to make a system that will keep the record of the original certificates of the original person. This will help to verify the certificates at any time without any cost or time consume.
- Also, the system makes sure the degrees, once verified, can have an immutable online presence for future references.

Project Objective

- 1.No one can tamper or create any fake degrees.
2. Employer verification becomes easy and seamless.
3. Controls plagiarism of certificates.
4. Remains safe and sound for future references.

Limitations

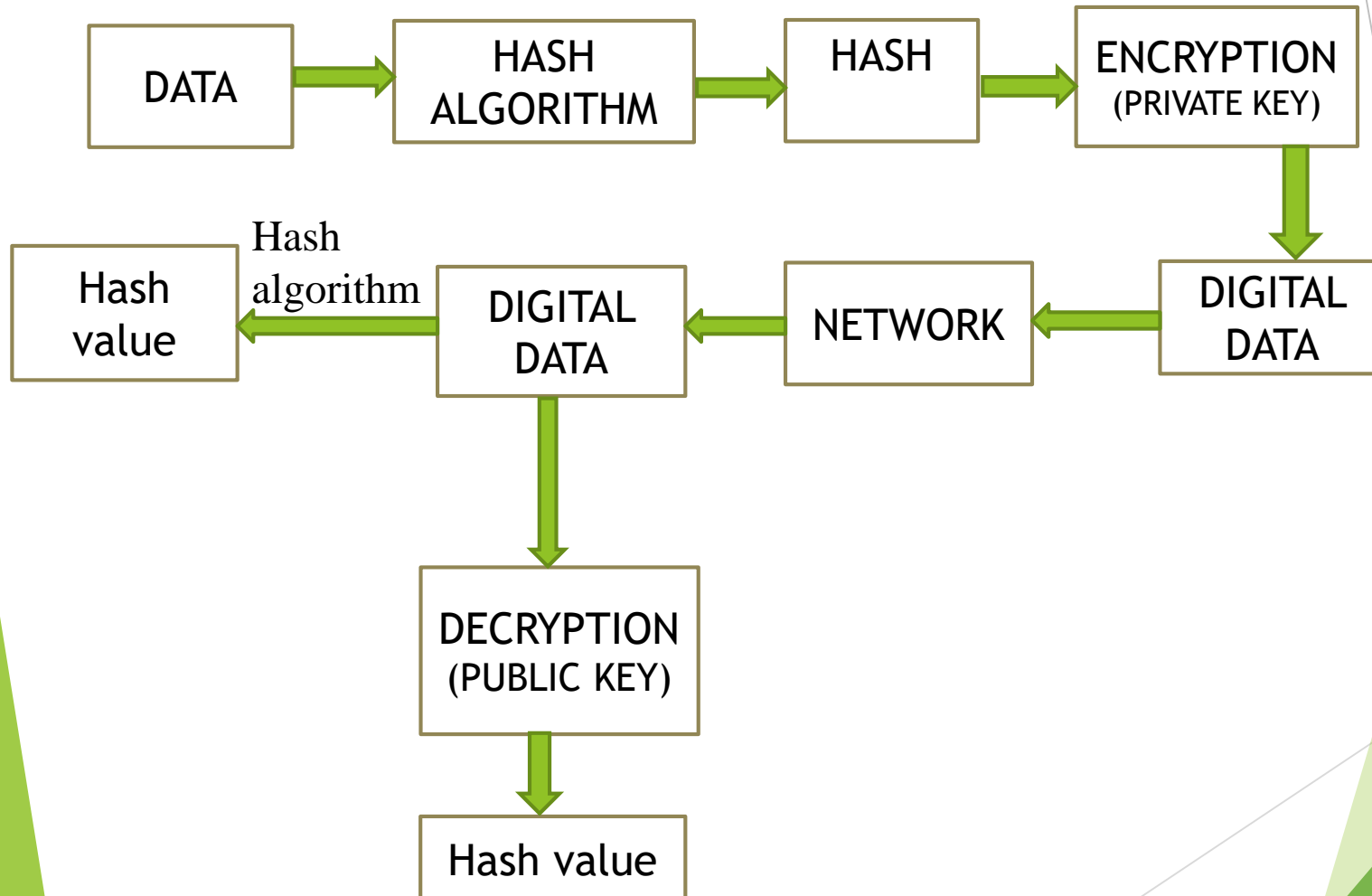
The certificate authority who wishes to secure the marks of students uploads the marks of the student into the blockchain network.

Talking about the limitations of this system, we have the following:-

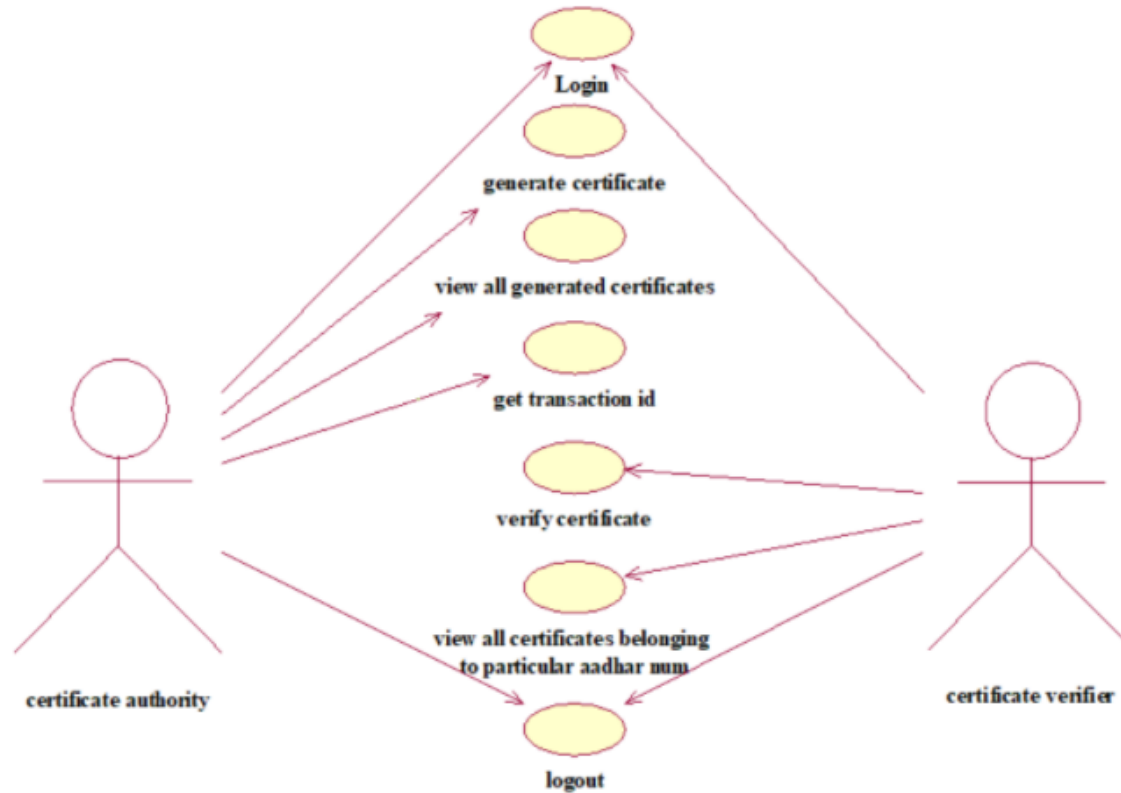
1. To enter the data, we will have to type the scores ourselves, instead of just scanning the certificate. This consumes a lot of time.
2. Also when the data are input, it cannot be deleted. So if we want some certificate records to be erased, it is not possible. This raises alteration problems.

Proposed Methodology

certificate is valid if both hash values are same



Use Case Diagram



SOFTWARE SPECIFICATION

The software that are required for this project are:-

- Live Server
- HTML5
- CSS
- Bootstrap
- JavaScript
- Truffle
- Solidity
- Ganache
- Ethereum
- Metamask
- WEB3.js
- Node.js
- Sublime text editor

SOFTWARE FUNCTIONS

SOLIDITY CODE

- ▶ Code for Creating Contract of Digital Certificate
- ▶ Code for Creating Contract Migration

JavaScript and Web3.js Code

- ▶ Code for Creating Digital Certificate
- ▶ Code for Verifying Digital Certificate

Html Code

- ▶ Code for Dashboard
- ▶ Code for adding Student Details and Marks Memo
- ▶ Code for Display Digital Certificate with Mark Memos

WORK DIVISION

NAME	WORK
ANITA CHALAUNE	SOLIDITY, JAVASCRIPT AND WEB3.JS CODE
SIDDHARTH BAJHRACHARYA	HTML CODE
SONI JAISWAL	DOCUMENTATION
OM PRAKASH SINGH	DOCUMENTATION

The background features abstract, overlapping green geometric shapes, primarily triangles and polygons, in various shades of green, creating a modern and dynamic visual effect. The shapes are concentrated on the right side of the slide, with some extending towards the left.

Thank You