Centurion University
Shaping Lives... Empowering Communities...

School: ..... Campus: .....

Academic Year: ..... Subject Name: ..... Subject Code: .....

Semester: ..... Program: ..... Branch: ..... Specialization: .....

Date: .....

Applied and Action Learning

(Learning by Doing and Discovery)

Name of the Experiement : Hash Your First Block – Blockchain Basis and Setup

Objective/Aim:

To understand the fundamental concepts of blockchain technology by learning how blocks are structured, how hashing secures block data, and to practically set up and hash your first block.

Apparatus/Software Used:

- Personal Computer/ Laptop
- Code Editor like VS Code
- Node.js Install on your Computer/Lapatop

Theory/Concept:

A blockchain is a decentralized, distributed digital ledger that stores data in blocks linked using cryptographic hashes.
Each block contains:

Data: (e.g., transactions or messages)
Previous Hash: The hash of the previous block, linking it to the chain
Current Hash: The hash generated from the current block's data

Hashing your first block will help you understand how security, transparency, and trust are maintained in a blockchain through hashes.

A hash is a unique, fixed-size alphanumeric string generated from input data using a hash function.

Procedure

Open the code editor like VS Code

Create a sample block containing:
Data: First Block Chain Block.
Previous Hash: 0 is the previous hash code.

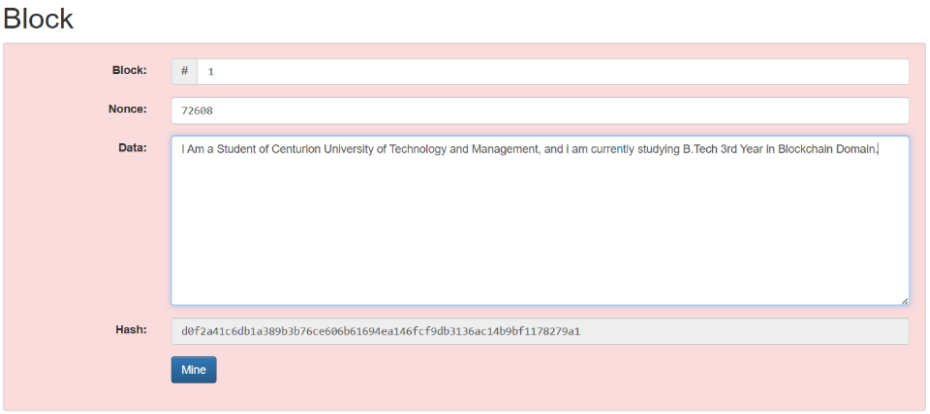
Go to the Blockchain Goup in WhatsApp, Sir sending a link that is already created a block click the link and your blockchain is storing is here.

Before Mining the Hash it does not change their code, but after mining the hash has the hash code change their code and staring from 00000..... .
Store the Data in the Block and See the Hash Code.

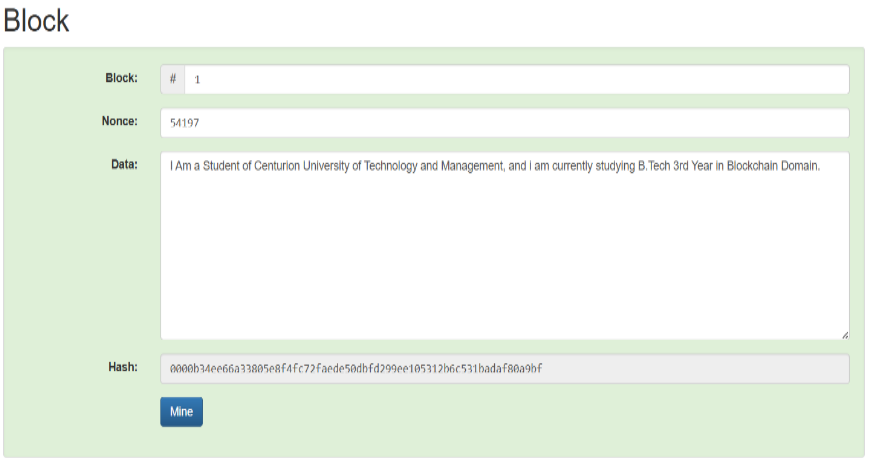
Observation Table:

This is For Block Mining:

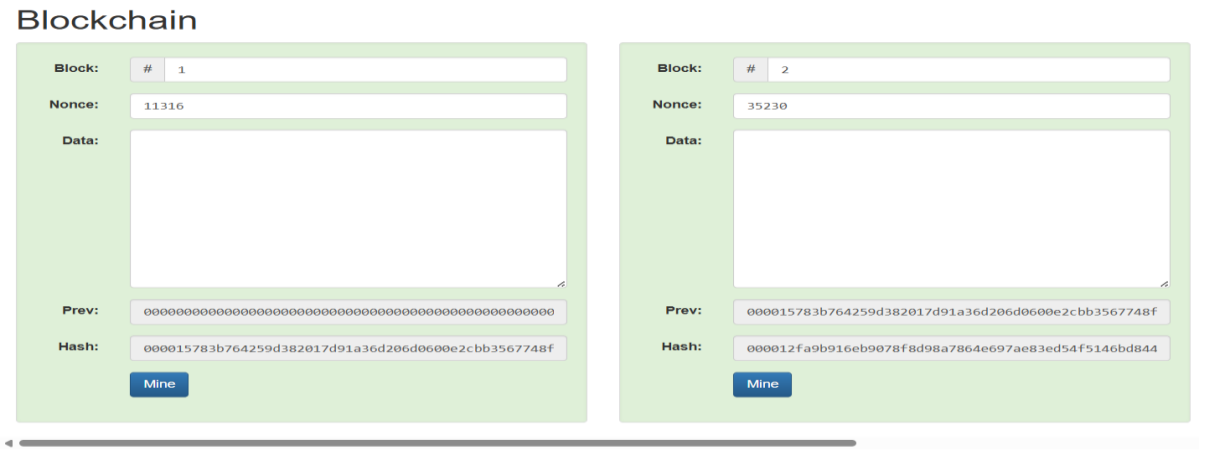
Before Mining:

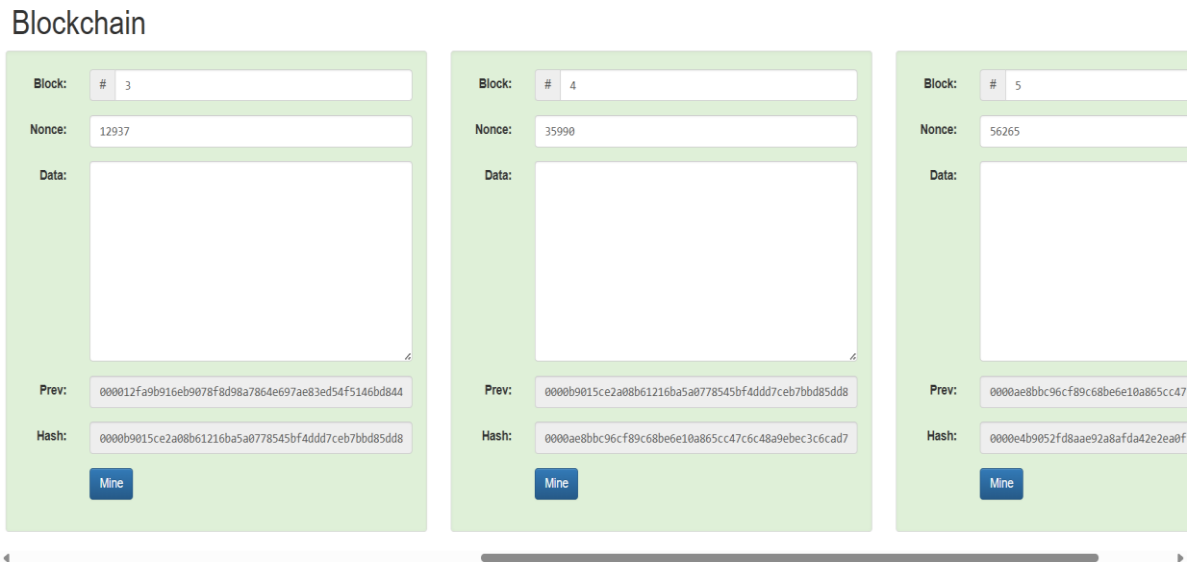


After Mining(Or storing Data):

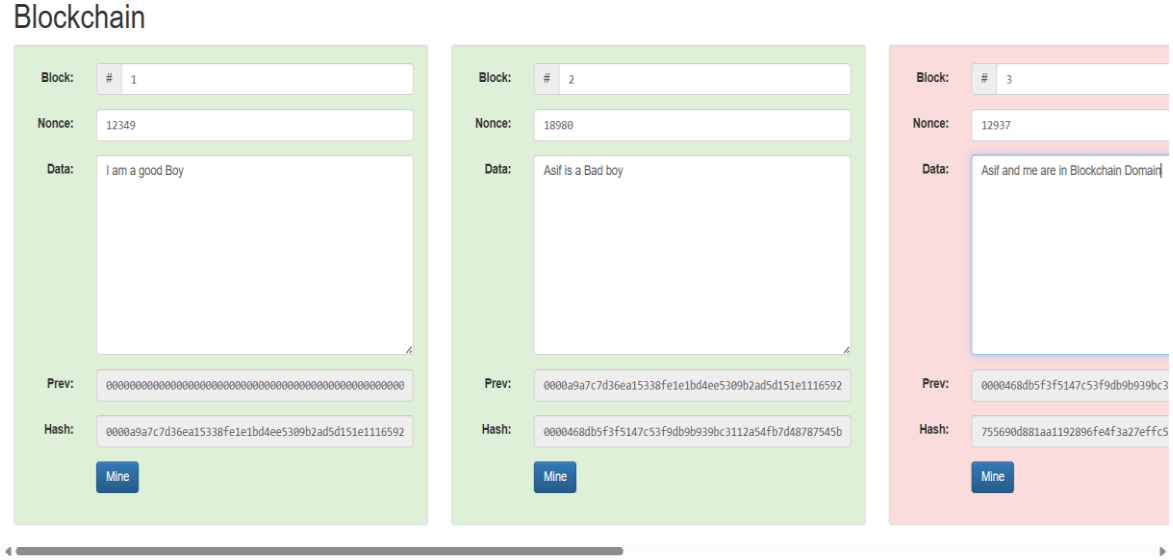


This is the Blocks of the Block Chain:

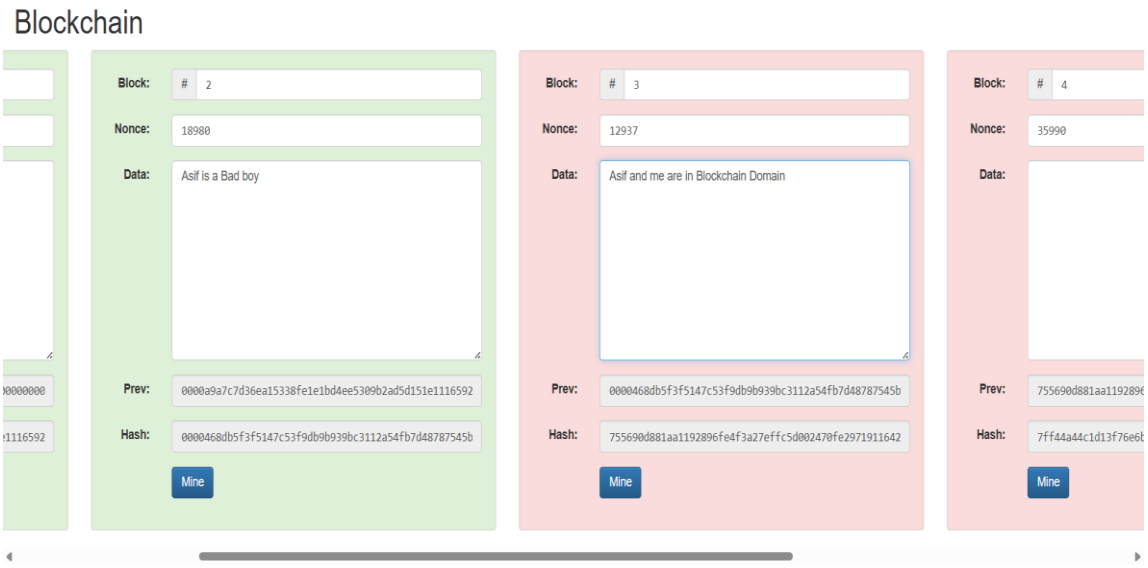




Storing Data in the Blocks:



Data Storing in the Blocks, then the block Links together:



After Completing the Mining the hash code generate:

Changing the Nonce:

ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10		
Planning and Execution/ Practical Simulation/ Programming	10		
Result and Interpretation	10		
Record of Applied and Action Learning	10		
Viva	10		
Total	**50**		

Signature of the Student:

Name :

Regn. No. :

Signature of the Faculty: