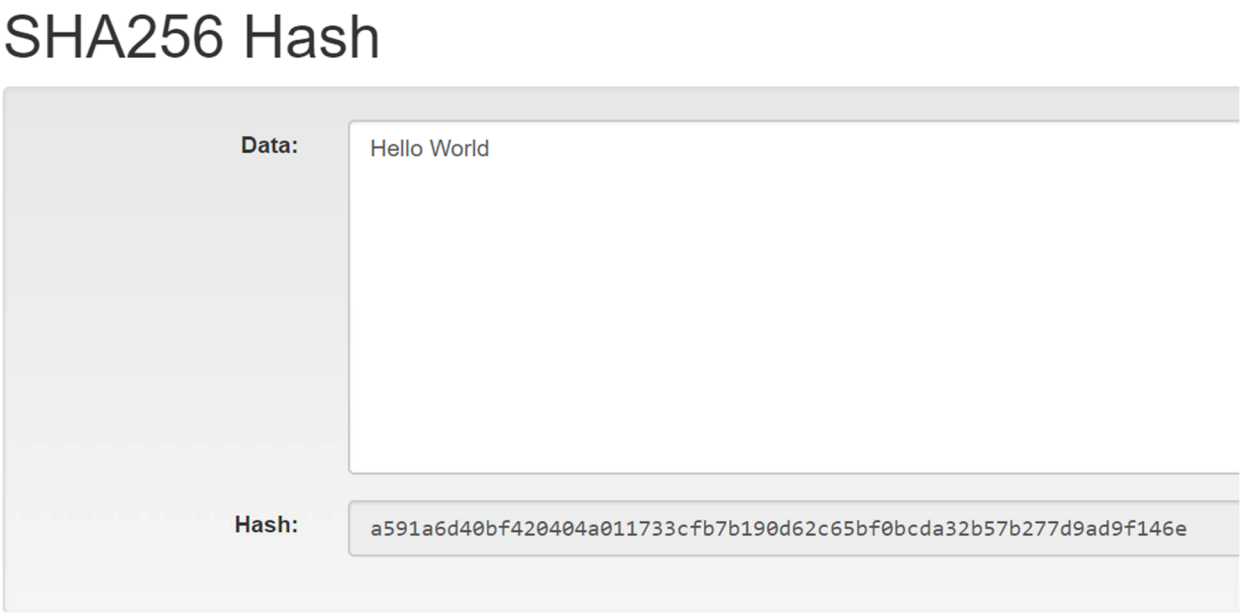
Q1: Understand the working of blockchain.

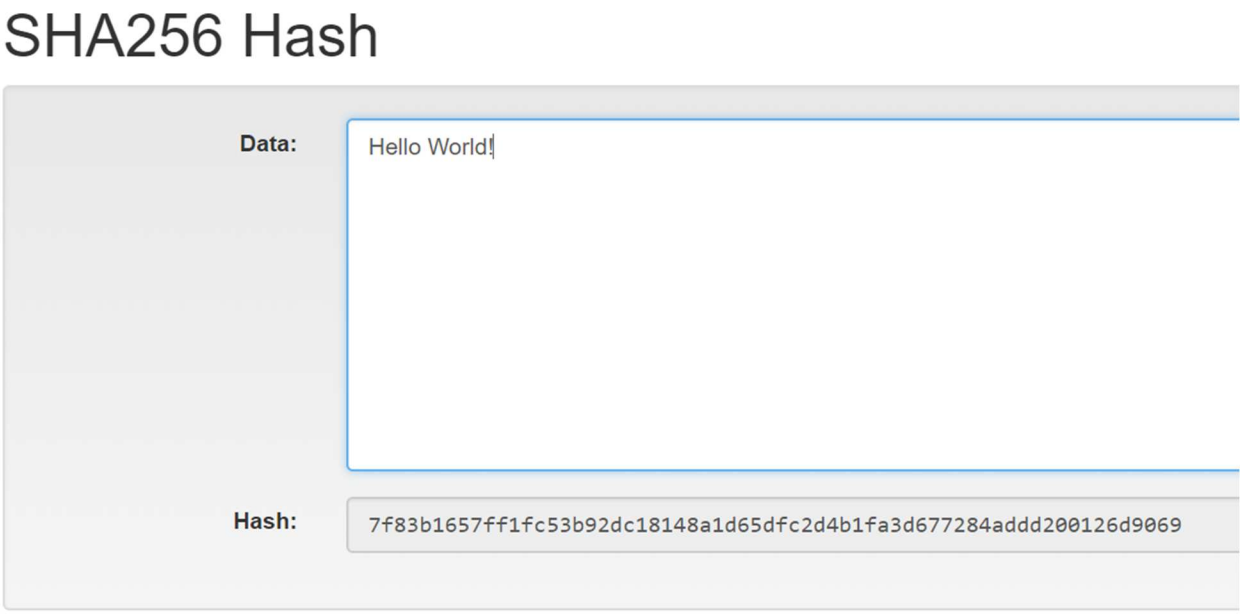
Visit the following Link: https://anders.com/blockchain/hash.html to explore the complexities of blockchain.

Perform the following operations:

(A) Hash: Observe the change in hash value by varying input the data field.
Input: Hello world



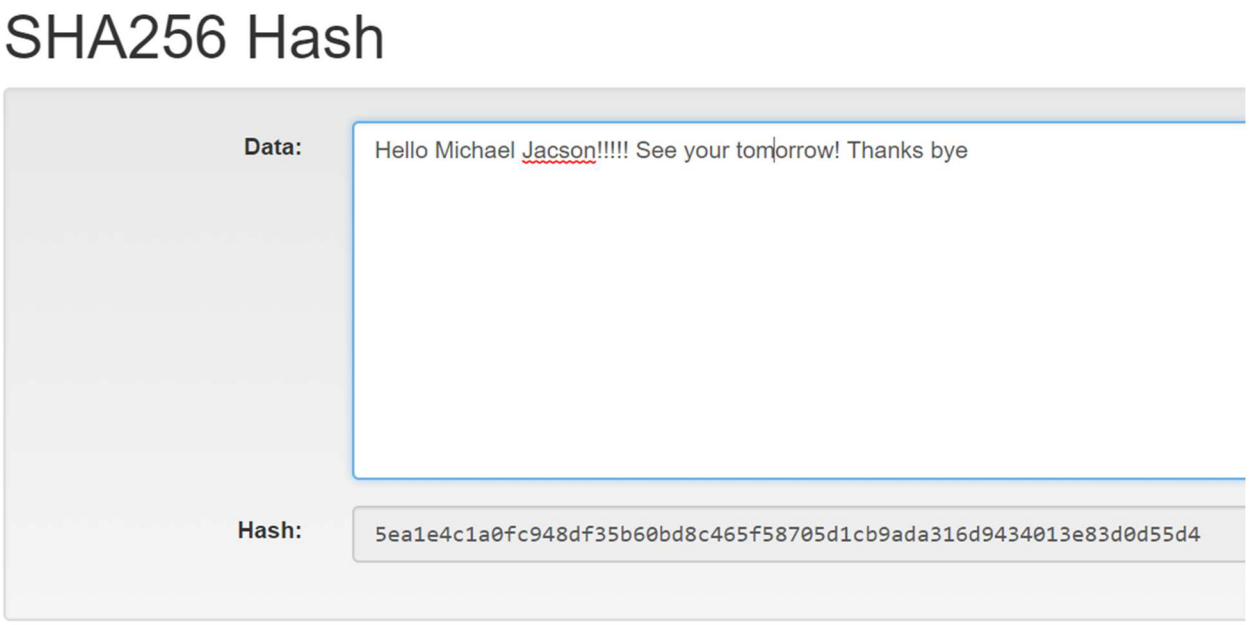
Input: Hello world!



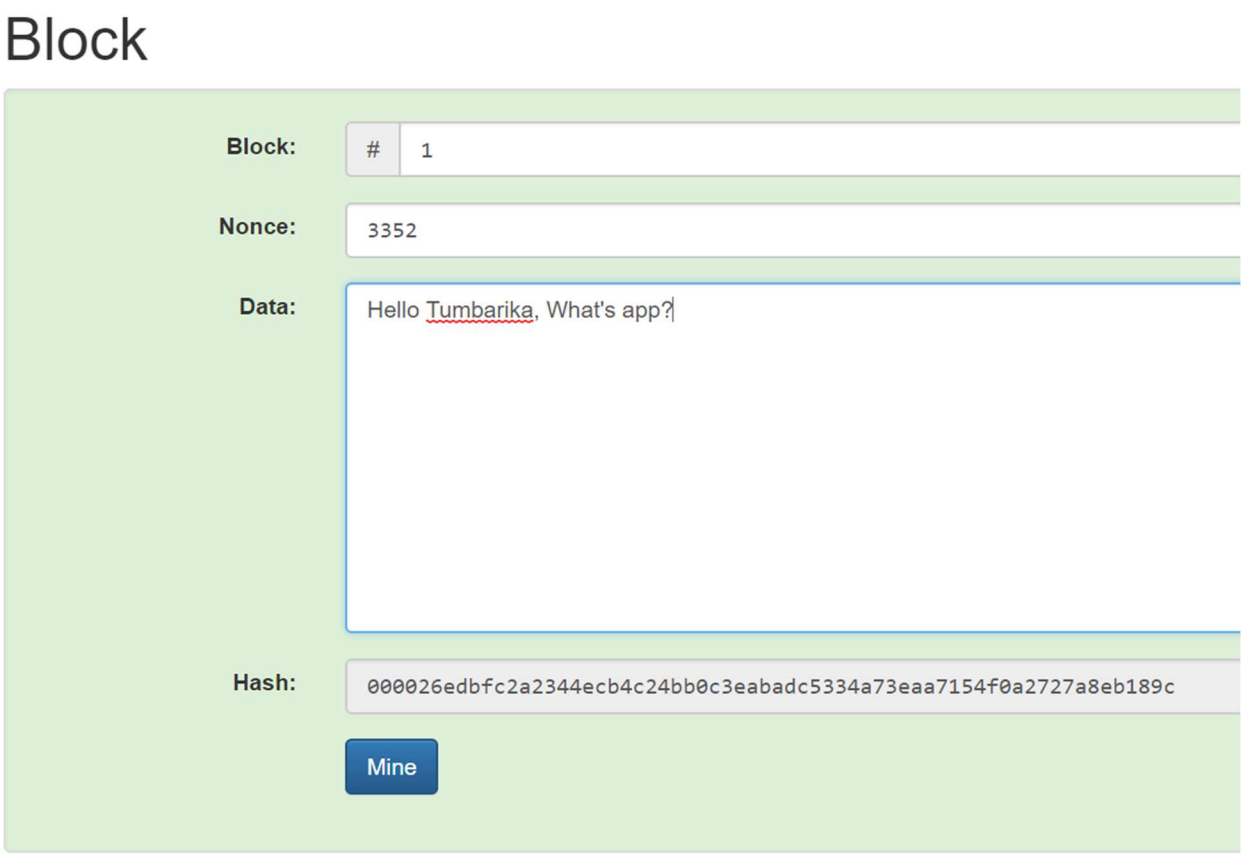
(B) Block:

1. Observe the hash value of the block. Suggest what does the unusual hash value signifies?
   ANS: Hash value is randomly changes even one char or space gets change in Data.

2. Input any arbitrary data in the data field and observe the hash value of the block.
   ANS: It looks unique and randomly changes. It used the SHA256 rule.



3. Mine the block and note the hash value.



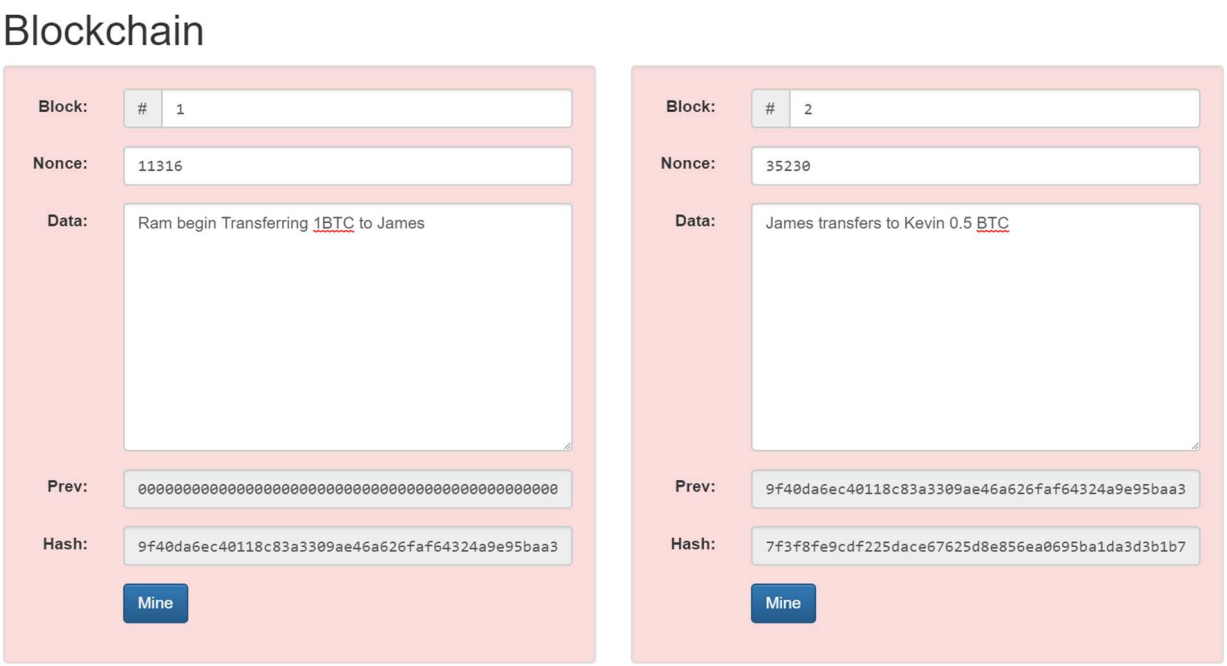
(C) Blockchain:

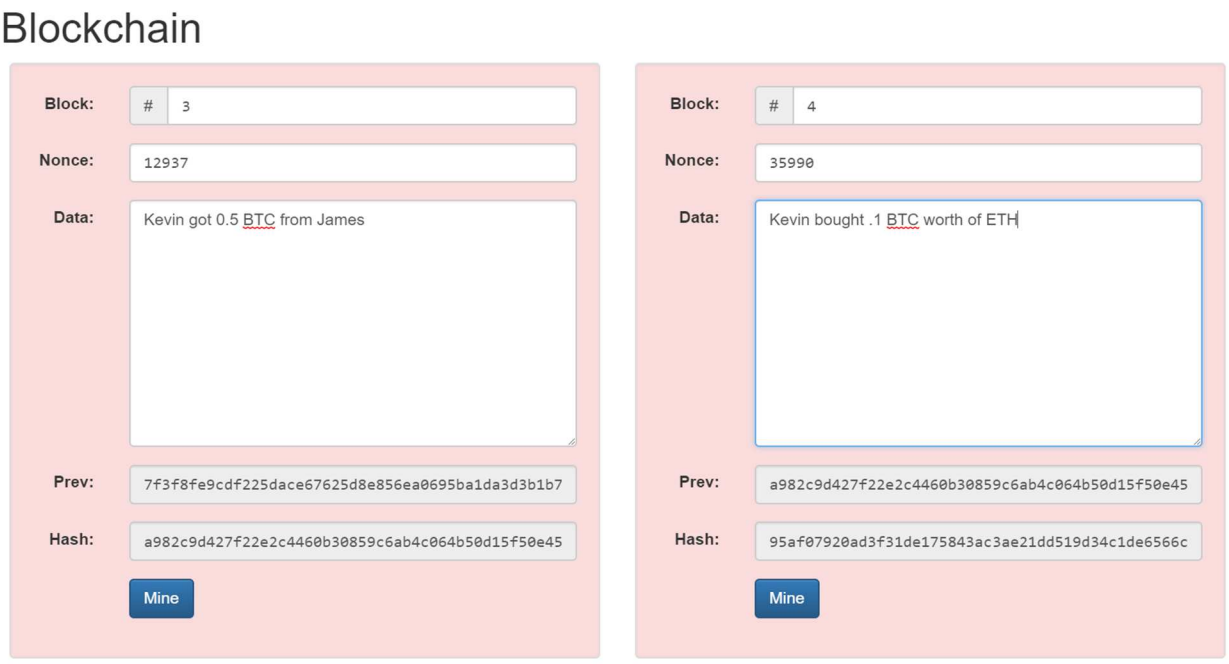
1. Study the blockchain

2. Try to input any information in the data field. Observe the change in hash

3. Now, try changing the information any block 2,3 or 4 and observe how the hash value changes in the subsequent blocks.

While entering input in block 1, Hash get change but Prev Hash value has all 0 that means it just started. Block 2 has Prev Hash value of Block 1. Same as, Block 3 has Prev Hash value of Block 2 and Block 4 has Prev Hash value of Block 3. This shows they all linked by Hash values.



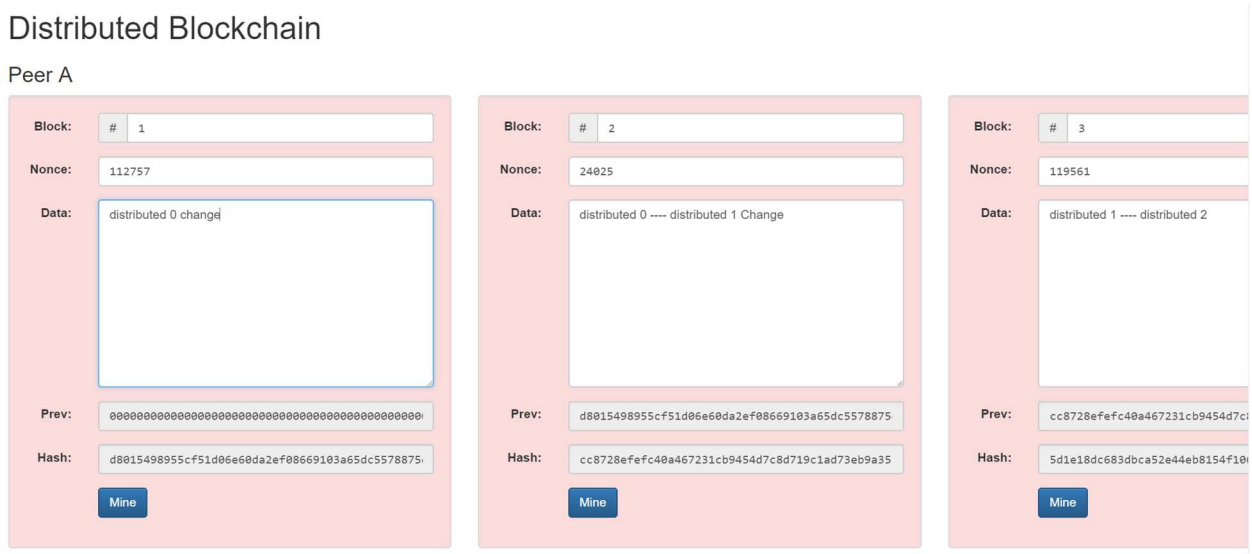


(D) Distributed Blockchain:

1. Study the distributed blockchain

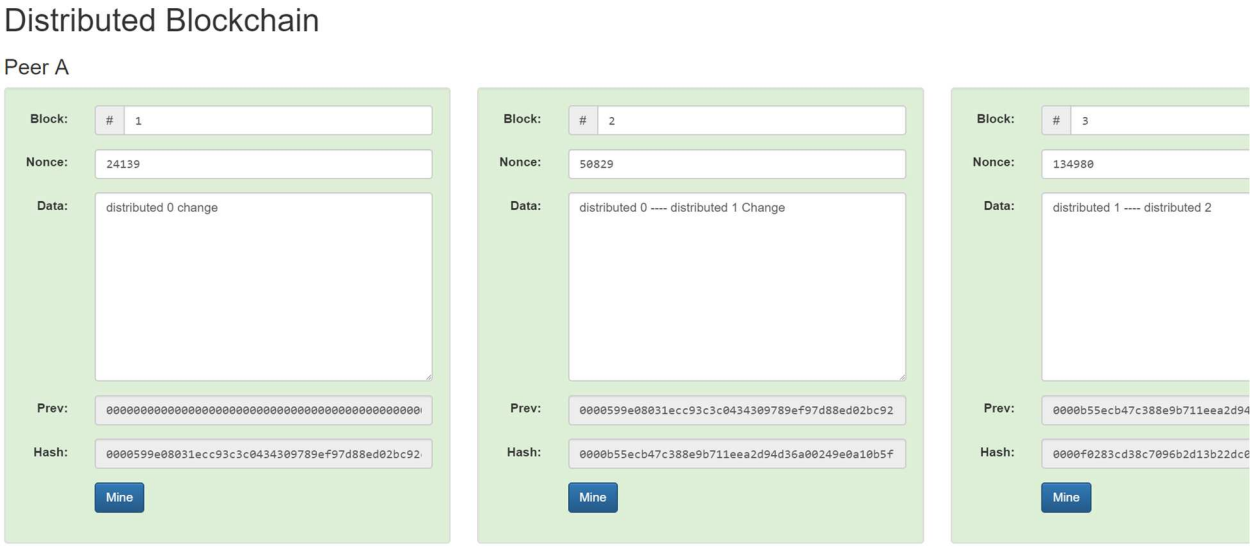
2. Input any data in the data field of any block in peer A. Observe the change in hash value. Now mine the blocks and verify if the hash value of the blocks is same in every peer

Before Mining: It generates the Hash and change into Prev Hash to linked each blocks



4. What does the change in hash value (after mining the blocks) signify?

   After mining it change the Hash and subsequently changes into the Prev Hash.

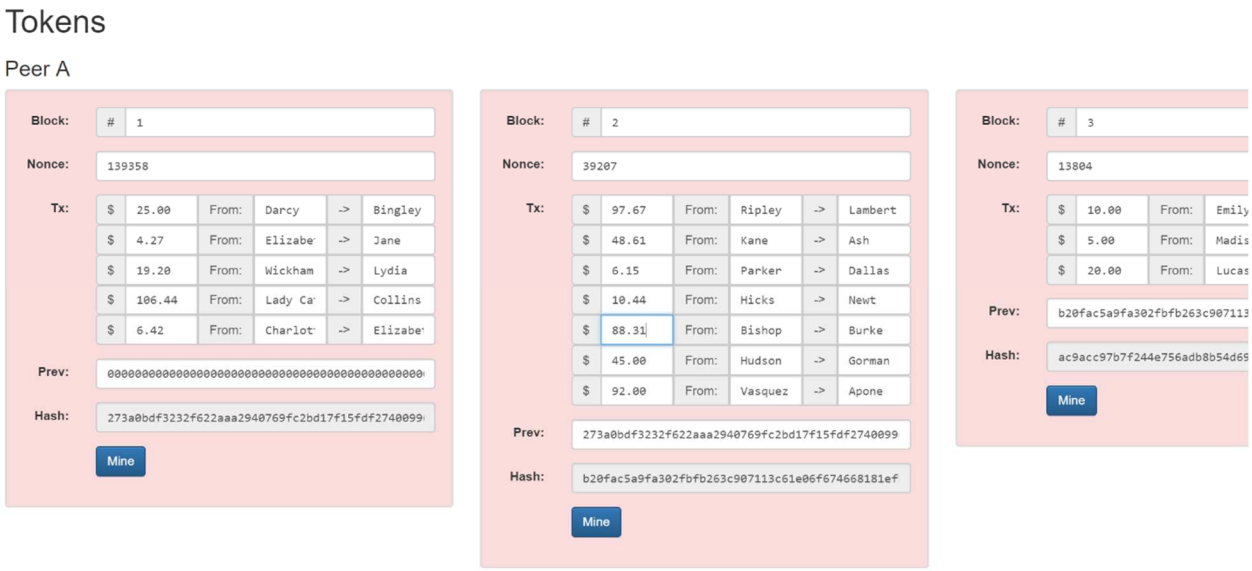


(E) Tokens:

1. Study the Tokens

2. Observe what happens if you try to change any value of the tokens in any of the blocks

ANS: The Hash value gets change once any value of the tokens in any of the blocks get change. Subsequently it changes into the Prev Hash in the next linked block.



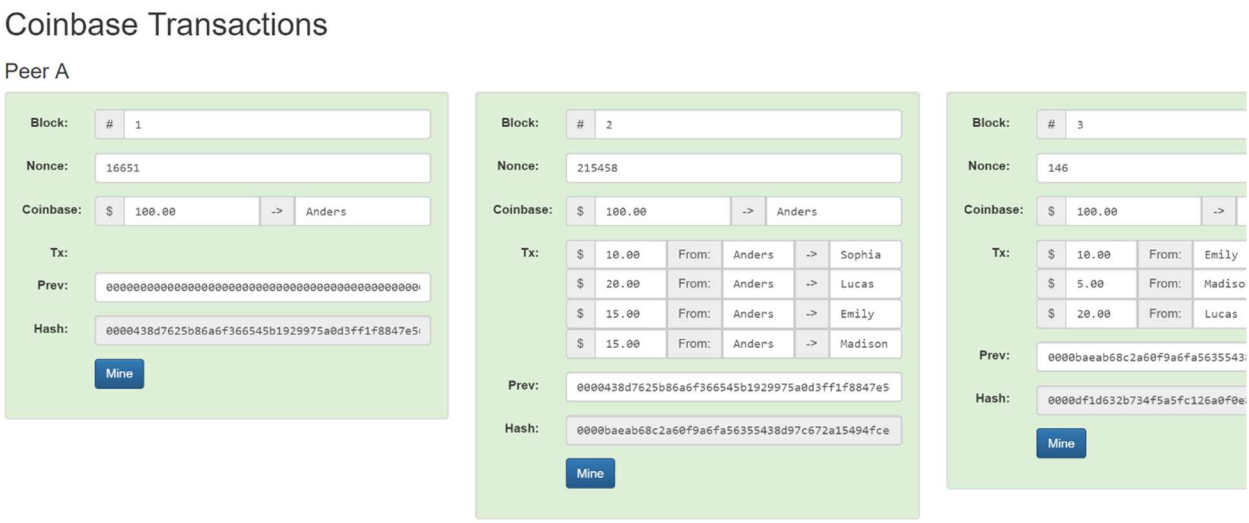
According to above example, I understood that each block may have multiple transaction.

(F) Coinbase

1. Study coinbase

2. What is coinbase transaction?

Coinbase transactions are the linked transactions.



3. As demo shows that Anders get $100 in coinbase transaction. Now he transfers some money to 5 people. Observe whether the transferred money is less than or equivalent to $100

ANS: Transfer money is less than $100.

5. Further, the people who received the money transfers some amount to other people's account. Check if they have money in their account to transfer.

ANS: Yes, they all have got the balance from previous block to transfer to another people's account.