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 Basics and Setup

* Coding Phase: Pseudo Code / Flow Chart / Algorithm

ALGORITHM:

- 1. Start
- 2.Explore Blockchain Demo site to test how a hash was Generate
- 3.In this site You can see the Attributes Like->Block number, Nonce, Data and Hash.
- 4. This Block is called as Genesis Block.
- 5. Now You can add some data and start Mining.
- 6. End

Software used

- 1.Blockchain demo
- 2.website:

https://andersbrownworth.com/blockchain/blockchain

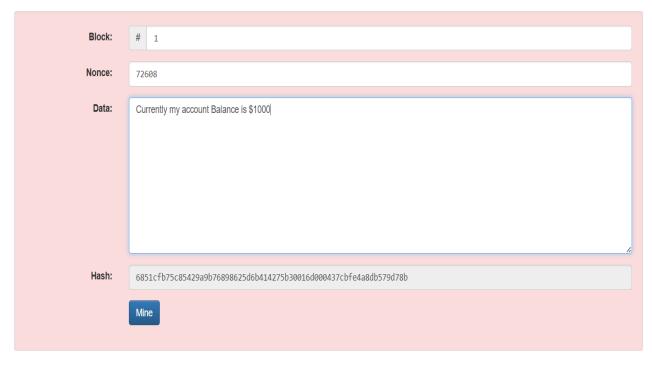
* Testing Phase: Compilation of Code (error detection)

This is a example of a Block how we can add data and how the Hash was Changed



Now we have to Mine by adding some data into our Block When i add some data to my Block then we see some changes in our block like Change in colour and change in hash .This is because of Avalanche Effect

Block



* Implementation Phase: Final Output (no error)

In blockchain, especially during mining, the hash must start with a certain number of zeros, like: 4 zeroes

00000a8b54e...

But here, the 000 is in middle of the hash, not the start. So, it's not a valid mined block.

and in Blockchain mining we have to find Out the perfect Nonce for the perfect Hash By solving high computational Mathematical puzzles ,but in this is a demo site so we have to mine directly it will find the perfect nonce and Hash for this particular data

In Blockchain Mining There was a concept Of Deterministic if we entered same data in another block there was same hash for the same data

FINAL STEP:

If we Click On Mine Button then we will show the change in Nonce and Hash and also in colour, After Mining there was a perfect hash for our Data.

Block

Block:	# 1
Nonce:	109674
Data	Ownerst way a count Police or in \$4000
Data:	Currently my account Balance is \$1000
Hash:	0000fd48fbf25939036a49a9e7cc8caa748b88d30878a01da159a518e5d6dc0a
паэн.	000001048101559390309499364CC8C991480880308\89901091599518650000C09
	Mine

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	Applied and Action Learning					

(Learning by Doing and Discovery)

Name of the Experiement:

* Coding Phase: Pseudo Code / Flow Chart / Algorithm

ALGORITHM:

- 1. Start
- 2.Explore Blockchain Demo site to test how a chain of Block Was Working Together. Visit the
- site:https://andersbrownworth.com/blockchain/blockchain
- 3.In this site You can see the Attributes Like->Block number, Nonce, Data, Previous Hash and Hash.
- 4.In the chain of Blocks The first Block is called Genesis Block
- 5.In the chain of Block we can see that the Block are Interconnected with each other and one block is holding the hash of previous block.
- 6.The genesis block has no previous hash so it is showing totally zeros
- 7. Now we can explore how changes occoured in the blocks by adding data

8.End

* Testing Phase: Compilation of Code (error detection)

In the blocks when we can add some data and start mining the hash was changed and Nonce was also changed. And there was a problem ,when we add data in any block there was a impact on there next blocks known as chain reactions

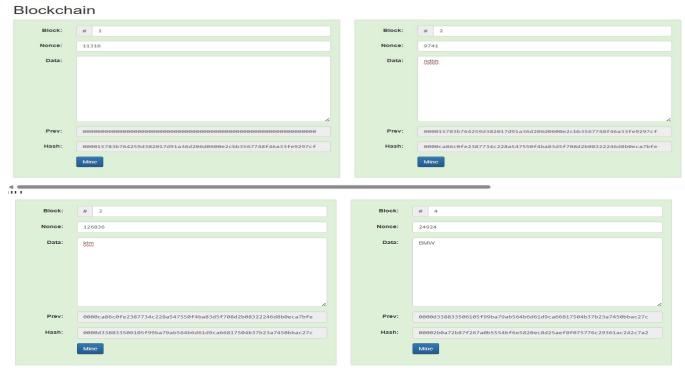
If we see ther are 4 blocks available and in this blocks there was no data added we have to add data to the block to see the changes

* Testing Phase: Compilation of Code (error detection)

Block:	# 1	Block:	# 2
Nonce:	11316	Nonce:	35230
Data:		Data:	
Prev:	000000000000000000000000000000000000000	Prev:	000015783b764250d382017d01a36d206d060002cbb3567748f46a33fe9297cf
Hash:	000015783b764259d382017d91a36d206d0600e2cbb3567748f46a33fe9297cf	Hash:	000012fa9b916eb9078f8d98a7864e697ae83ed54f5146bd84452cdafd043c19
	Mine		Mine
Block:	# 3	Block:	Н 4
Nonce:	12937	Nonce:	35990
Data:		Data:	
	e.		
Prev:	000012fa9b916eb9078f8d98a7864e697ae83ed54f5146bd84452cdafd043c19	Prev:	0000b9015ce2a08b61216ba5a0778545bf4ddd7ceb7bbd85dd8062b29a9140bf
Hash:	0000b9015ce2a08b61216ba5a0778545bf4ddd7ceb7bbd85dd8062b29a9140bf	Hash:	0000ae8bbc96cf89c68be6e10a865cc47c6c48a9ebec3c6cad729646cefaef83
_	Mine		Mine
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In this i add a data to the block 2 then we see the colour and hash are changes for the next blocks

After add the data of block 2 the next blocks are wrong because of the wrong hash and once in block 2 ,to fix this we have start mine for each block ,and after mining there was a perfect has and nonce for each block



Observation:

- 1.Each block contains important attributes like Block Number, Nonce, Data, Previous Hash, and Hash.
- 2. The Genesis Block has no Previous Hash, so it is initialized with all zeros.
- 3. When data in any block is changed, its hash and the hashes of all following blocks also change, showing how blocks are linked and ensure data integrity.

ASSESSMENT

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

Signature of the Student:

Name:

Regn. No. :

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