Daniel Clark

CTEC 415

Week 5 Classwork 1

1. What is Block chain?
   1. Blockchain is a technology that acts as a digital timestamp to documents so that they cannot be backdated or tempered.
2. What is a bitcoin?
   1. Bitcoin is a digital currency that utilizes blockchain to record transactions. This essentially prevents people from copying money, undoing transactions, or spending money that is not owned.
3. What is the difference between a bitcoin and Block chain
   1. Bitcoin is a currency technology that applies blockchain. Blockchain is the overarching technology that can be applied to many other aspects of computing.
4. Describe the architecture of Block Chain.
   1. The architecture of blockchain is blocks of information. The first block in a chain is the genesis block, and each block is then linked to the previous block in the chain. Essentially, blockchain functions as a linked list that cannot have its links broken.
5. How does hashing play a roll in Block Chain?
   1. In the blockchain, each block has a unique hash that is used to identify itself and other blocks in the chain. A block will list its own hash as well as the hash of the previous block it is linked to.
6. How does Block Chain prevent fraud?
   1. Blockchain prevents fraud through a concept called proof-of-work. Proof-of-work slows down the creation of new blocks by requiring a computational problem be solved before a new block can be added to a chain. The proof-of-work in bitcoin can take up to 10 minutes to calculate, which would mean for a hacker to alter the data of each block, proof-of-work would take 10 minutes, the hacker could only alter data in the succeeding blocks, and would need to calculate the proof-of-work for each of those succeeding blocks.
7. Is Block Chain a centralized infrastructure?
   1. Blockchain is a distributed peer to peer network. Each peer on this network has a full copy of the blockchain, and when a new block is added, it is sent to every user where the users must verify that the block hasn’t been altered before finalizing it in the chain.
8. Does Block Chain have a protocol?  If yes, briefly explain it.
   1. Blockchain does have a protocol.
      1. A transaction is requested
      2. The transaction is broadcasted to the p2p network
      3. The network validates the transaction and user’s status
      4. The new block is added to the chain after the transaction is complete
9. How does Block Chain use Cryptography?
   1. The use of hashing within blockchain is one function of cryptography. Blockchain also utilizes asymmetrical algorithms to protect the confidentiality of information within the blockchain.
10. Do you like the concept of Block Chain?  Yes or No and why or why not.
    1. I do like the concept of blockchain due to the emphasis on security and confidentiality. This technology could be used in many ways to help protect the data of users and organizations from unwanted viewers.