Assignment III

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Class: C-6 Afternoon

Subject: Blockchain Technology

Review Questions:

1. What are the essential fields inside a blockchain transaction?
2. How does the network verify a transaction's authenticity?
3. Why are transaction fees necessary?
4. What happens if a transaction fails?
5. Why is keeping your private key safe so important?

Answer:

1. The essential fields inside a blockchain transaction are
    - From address: sender
    - To address: receiver
    - Amount: how much is being sent
    - Nonce: transaction count of the sender
    - Fee/Gas: payment for network work
    - Signature: proof that the sender approved it.
2. The network verify a transaction's authenticity by
    - User creates and signs the transaction
    - It is sent to the blockchain network
    - Nodes verify that it is valid
    - Miners or validators pick it and add it to a block
    - It becomes confirmed once the block is accepted.
3. Transaction fees are necessary because fees reward miners or validators for work and when the fees are higher, the confirmation is faster.
4. If a transaction fails, it is executed but reverted and funds are not transferred to the recipient.
5. Keeping your private key safe is so important because it gives full control over your funds and if someone else gets it, they can steal your funds with no way to recover them.