Assignment No: 1

Title of the Assignment: Installation of MetaMask and study spending Ether per transaction

Objective of the Assignment: Students should be able to learn new technology such as MetaMask. Its application and implementations

Prerequisite:

1. Basic knowledge of cryptocurrency

2. Basic knowledge of distributed computing concept

3. Working of blockchain

Course Outcome:

CO6: Interpret the basic concepts in Blockchain Technology and its Application.

Contents for Theory:

1. Introduction Blockchain

2. Cryptocurrency

3. Transaction Wallets

4. Ether transaction

5. Installation Process of MetaMask

THEORY:

Introduction to Blockchain

● Blockchain can be described as a data structure that holds transactional records and while ensuring security, transparency, and decentralization. You can also think of it as a chain or records stored in the forms of blocks which are controlled by no single authority.

● A blockchain is a distributed ledger that is completely open to any and everyone on the network. Once an information is stored on a blockchain, it is extremely difficult to change or alter it

Blockchain Features

The following features make the revolutionary technology of blockchain stand out:

● Decentralized

 Blockchains are decentralized in nature meaning that no single person or group holds the authority of the overall network. While everybody in the network has the copy of the distributed

(NOTE: Data in Brown color need to write on one side pages and highlighted text thing add screenshots of Metamask installation.

Answer the question in short)

ledger with them, no one can modify it on his or her own. This unique feature of blockchain allows transparency and security while giving power to the users.

● Peer-to-Peer

Network With the use of Blockchain, the interaction between two parties through a peer-to-peer model is easily accomplished without the requirement of any third party. Blockchain uses P2P protocol which allows all the network participants to hold an identical copy of transactions, enabling approval through a machine consensus

Immutable The immutability property of a blockchain refers to the fact that any data once written on the blockchain cannot be changed

Tamper-Proof With the property of immutability embedded in blockchains, it becomes easier to detect tampering of any data. Blockchains are considered tamper-proof as any change in even one single block can be detected and addressed smoothly

Ethereum

Ethereum Transactions Per Day reflects the daily number of transactions completed on the Ethereum network. An increased interest or increased optimism in Ethereum could lead to greater transaction occurrences as the audience for the underlying token grows.Ethereum wasn't always the second-largest blockchain project in the world. Vitalik Buterin actually co-created the project to answer for Bitcoin's shortcomings.

Ethereum is essentially a single decentralized system that runs a computer called the Ethereum Virtual Machine (EVM). Each node holds a copy of that computer, meaning that any interactions must be verified so everyone can update their copy. The process of creating a block of transactions to be added to the Ethereum blockchain is referred to as mining .

Benefits of Blockchain Technology:

● Time-saving: No central Authority verification needed for settlements making the process faster and cheaper.

● Cost-saving: A Blockchain network reduces expenses in several ways. No need for third-party verification. Participants can share assets directly. Intermediaries are reduced. Transaction efforts are minimized as every participant has a copy of shared ledger.

● Tighter security: No one can temper with Blockchain Data as it is shared among millions of participants. The system is safe against cybercrimes and Fraud.

How to use MetaMask: A step by step guide

Step 1. Install MetaMask on your browser

Click on Install MetaMask as a Google Chrome extension.

● Click Add to Chrome.

● Click Add Extension.

Step 2. Create an account.

● Click on the extension icon in the upper right corner to open MetaMask.

● To install the latest version and be up to date, click Try it now.

● Click Continue.

● You will be prompted to create a new password. Click Create

Step 3. Depositing funds.

● Click on View Account.

What advantages does MetaMask have?

● Popular - It is commonly used, so users only need one plugin to access a wide range of dapps.

● Simple - Instead of managing private keys, users just need to remember a list of words, and transactions are signed on their behalf.

● Saves space - Users don't have to download the Ethereum blockchain, as MetaMask sends requests to nodes outside of the user's computer.

● Integrated - Dapps are designed to work with MetaMask, so it becomes much easier to send Ether in and out.

Conclusion- In this way we have explored Concept Blockchain and metamat wallet for transaction of digital currency

Assignment Question

1. What Are the Different Types of Blockchain Technology?

2. What Are the Key Features/Properties of Blockchain?

3. What Type of Records You Can Keep in A Blockchain?

4.What is the difference between Ethereum and Bitcoin?

5. What are Merkle Trees? Explain their concept.

6. What is Double Spending in transaction operation