

Lab Manual: Exploring MetaMask Wallet

Part 1: Introduction to MetaMask

The screenshot shows a browser window with two tabs open. The top tab displays the Sepolia PoW Faucet website, which shows a claim reward of 0.06 SepETH for a wallet starting with 0x57d30c09D799Cb8E66B1E0FAC0080823f1c11bBD. A green button labeled "Claim Rewards" is visible. The bottom tab shows the MetaMask extension interface, specifically the "Accounts" screen, which lists the same wallet and provides options to "Rename", "Addresses", "Pin to top", and "Hide account". Below this is a "Tokens" section showing 0 SepoliaETH. A sidebar on the right contains links for "Buy", "Swap", "Send", and "Receive". A promotional banner for TRON tokens is also visible.

SELF TRANSFER

The image displays a composite screenshot of several web-based interfaces related to Ethereum testing networks.

Sepolia PoW Faucet: A browser window showing the Sepolia PoW Faucet. It displays a "Claim Rewards" section with a wallet address (0x2DBd0353c261Ce4dEbBAC92287E36c799B314B3F), amount (0.058 SepETH), and timeout (-). Below this is a green box stating "Claim Transaction has been confirmed in block #10132012! TX: 0x083af99e7b60f2cc456d47854035b3ae0239ea1e92b78060a04f143387943e". It also shows social sharing options: "Did you like the faucet? Give that project a Star 5.377" and "Or support this faucet by sharing your result with a Tweet Post". A "Return to startpage" button is at the bottom.

MetaMask: An open MetaMask extension window titled "Send". It shows a recipient address ("Account 2" with address 0x57d30..11bBD) and an amount input field set to 0.002 SepoliaETH. It also indicates 0.05846 SepoliaETH available. A "Continue" button is at the bottom.

Coinigy Accounts: Two side-by-side Coinigy account pages for "Account 1" and "Account 2".

- Account 1:** Displays 0.0564 SepoliaETH. Buttons for "Buy", "Swap", "Send", and "Receive" are visible. A promotional box for TRON tokens is present, stating "TRON is in the building" and "Trade TRON-based tokens and easily transfer USDT".
- Account 2:** Displays 0.0617 SepoliaETH. Similar buttons and a TRON token promotion are shown.

Bottom Navigation: Both accounts have tabs for "Tokens", "DeFi", "NFTs", and "Activity". The "Activity" tab is selected for both. Under "Activity", it shows a transaction history for Jan 27, 2026, where 0.002 SepoliaETH was sent to Account 2 and is marked as "Confirmed".

Call-to-Action: On the right side of the Coinigy interface, there is a large button labeled "Swap tokens" with a magnifying glass icon above it, accompanied by the text "Nothing to see yet. Swap your first token today."

Sent ×

Status [View on block explorer](#) [Copy transaction ID](#)
Confirmed

From  Account 1  Account 2

Transaction

Nonce	0
Amount	-0.002 SepoliaETH
Gas Limit (Units)	31500
Gas Used (Units)	21000
Base fee (GWEI)	0.979790716
Priority fee (GWEI)	1.5
Total gas fee	0.0000052 SepoliaETH
Max fee per gas	0.000000003 SepoliaETH
Total	0.00205208 SepoliaETH

[+ Activity log](#)

NEIGHBOUR TRANSFER

Sent ×

Status [View on block explorer](#) [Copy transaction ID](#)
Confirmed

From  Account 2  23CS204

Transaction

Nonce	1
Amount	-0.001 SepoliaETH
Gas Limit (Units)	31500
Gas Used (Units)	21000
Base fee (GWEI)	1.071474814
Priority fee (GWEI)	1.5
Total gas fee	0.000054 SepoliaETH
Max fee per gas	0.000000003 SepoliaETH
Total	0.001054 SepoliaETH

[+ Activity log](#)

The screenshot shows the Sepolia Testnet Etherscan interface for the address 0x57d30c09D799Cb8E66B1E0FAC0080823f1c11bBD. The top navigation bar includes a search bar for "Search by Address / Txn Hash / Block / Token" and various filter and export icons. The main content area is divided into three sections: "Overview", "More Info", and "Multichain Info".

Overview: ETH BALANCE: 0.050563329971861 ETH

More Info: TRANSACTIONS SENT: Latest: 7 mins ago ↗ First: 10 mins ago ↗
FUNDING BY: 0x6Cc9397c...77Ba5F455 ↗ | 21 mins ago

Multichain Info: N/A

Below these sections, there are tabs for "Transactions" (selected) and "Token Transfers (ERC-20)". The "Transactions" tab displays a table of the latest 4 transactions from a total of 4.

Transaction Hash	Method	Block	Age	From	To	Amount	Txn Fee
0x32834c86c4...	Transfer	10132073	7 mins ago	0x57d30c09...3f1c11bBD	OUT 0x2F27c13...5Ac59976A	0.001 ETH	0.000054
0xfc370c243c5...	Transfer	10132056	10 mins ago	0x57d30c09...3f1c11bBD	OUT 0x2DBd0353...99B314B3F	0.01 ETH	0.00005076
0xee8ecdb71e...	Transfer	10132020	18 mins ago	0x2DBd0353...99B314B3F	IN 0x57d30c09...3f1c11bBD	0.002 ETH	0.00005207
0xd0bee241b4...	Transfer	10132006	21 mins ago	0x6Cc9397c...77Ba5F455	IN 0x57d30c09...3f1c11bBD	0.0596681 ETH	0.00006303

Part 2: Understanding Bitcoin

1) Inspect and explore block #0 using <https://www.blockchain.com/btc/block/0> to solve the below question.

a. How many transactions are there in the Genesis block in Bitcoin?

- 1

b. Who mined this block, and what was the block reward?

- The Genesis block was mined by Satoshi Nakamoto, the creator of Bitcoin. The block reward for this block was 50 BTC, which represents the first bitcoins ever created

2) Inspect and explore block #0 using this link to solve the below question.

a. How many transactions are there in the Genesis block in Ethereum (other than the transaction for Miner fee)?

:- 8893 transactions and 0 contract internal transaction in this block

b. What is hash of the parent block? What are your observations?

The parent hash is all zeroes, indicating the start of the chain.

a. What is the hash of the previous block for Bitcoin block #490624? Copy and paste.

the box below.

$$48) \text{ Let } t = -1, -1, -1, t_0, \dots, t_{n-1} = 1, 1, 1, 1.$$

“0x5edb69874d0900d8857468fbe53715cc1a581377

913.27ETH(\$2,682,044.93)

b. What is the address of the sender in this transaction?

0xF9fbA58d8345bD3100C5AdF3b8B51938E5dA0a9D

c. What is the Transaction Action?

Transfer of 913.27 ETH to 0xFf1b354670E3502145c097bcD2d1F3f17B648e63

Exercise 3:

1. Why does blockchain use a Secret Recovery Phrase?

Blockchain uses a Secret Recovery Phrase to allow users to recover their wallet if their device or wallet application is lost or damaged. The recovery phrase is a set of 12 or 24 words that can regenerate all the private keys associated with a wallet. Since blockchains are decentralized and do not have a central authority, this phrase acts as the only backup method. Without it, access to the wallet and its assets is permanently lost.

2. What are Gas Fees in Ethereum, and why are they required?

Gas fees in Ethereum are transaction fees paid to validators for processing and verifying transactions on the network. These fees are required because every transaction or smart contract execution consumes computational resources. Gas fees also help prevent spam transactions and ensure that the network remains secure and efficient. The fee amount varies depending on network congestion and the complexity of the transaction.

3. Why do blockchain transactions take time instead of happening instantly?

Blockchain transactions take time because they must be verified and confirmed by multiple nodes in the network before being added to a block. This process ensures the security and accuracy of the transaction. Since blocks are created at fixed time intervals and require consensus among participants, transactions cannot occur instantly. This delay helps prevent fraud and double-spending.

4. What is a Testnet Faucet and how does it help?

A testnet faucet is a service that provides free test cryptocurrency for use on a blockchain's test network. It helps developers and learners test transactions, smart contracts, and decentralized applications without using real funds. Since testnet coins have no real monetary value, they provide a safe environment for experimentation and learning.

5. Why should you never share your private key?

A private key should never be shared because it provides full control over a blockchain wallet and its assets. Anyone who has access to the private key can transfer funds without the owner's permission. Blockchain transactions are irreversible, and there is no way to recover stolen assets. Therefore, keeping the private key secure is essential for protecting digital assets.