Ramesh Punyamanthula
Web3 Basics – Practical Onboarding Assignment
Technical Hub – 2025

Table of Contents

1. Blockchain Block Exploration (Sepolia Testnet)

⑦ Block Height:	9816095 ‹ ›
⑦ Status:	⧖ Unfinalized
⑦ Timestamp:	⏱ 55 secs ago (Dec-11-2025 08:57:48 AM +UTC)
⑦ Proposed On:	Block proposed on slot 9142489, epoch 285702
⑦ Transactions:	100 transactions and 0 contract internal transaction in this block
⑦ Withdrawals:	16 withdrawals in this block
⑦ Fee Recipient:	0x670B24610DF99b1685aEAC0dfD5307B92e0cF4d7 ⧉ in 12 secs
⑦ Block Reward:	0.014788716188092806 ETH (0 + 0.014788716188092806 - 0)
⑦ Total Difficulty:	0
⑦ Size:	98,446 bytes
⑦ Gas Used:	29,237,401(48.73%)　-3% Gas Target
⑦ Gas Limit:	60,000,000
⑦ Base Fee Per Gas:	28 wei (0.000000028 Gwei)
⑦ Burnt Fees:	🔥 0 ETH
⑦ Extra Data:	Nethermind-1.35.3 (Hex:0x4e65746865726d696e642d312e33352e33)

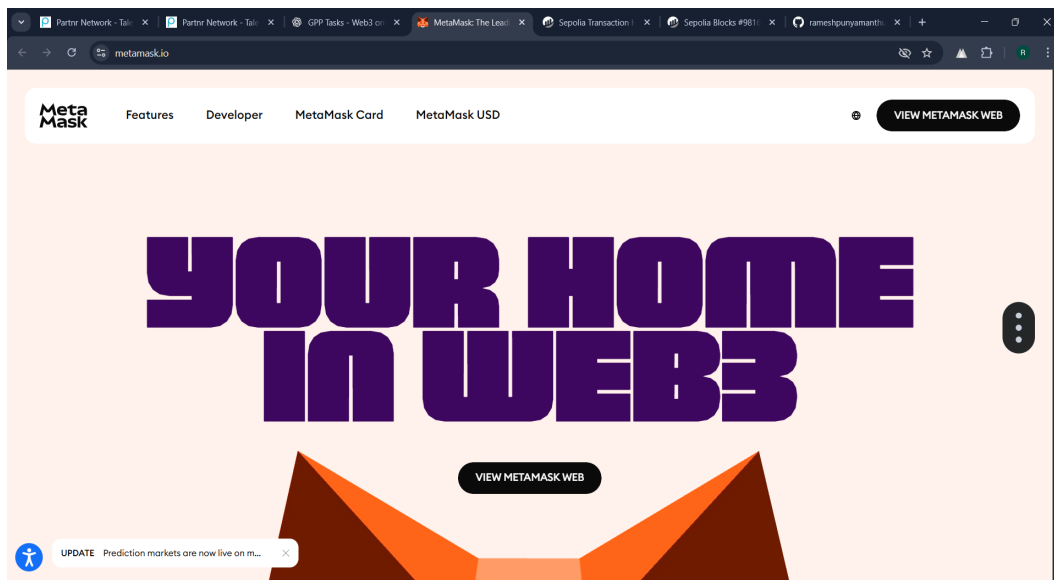## 2. Transaction Exploration (Sepolia Testnet)

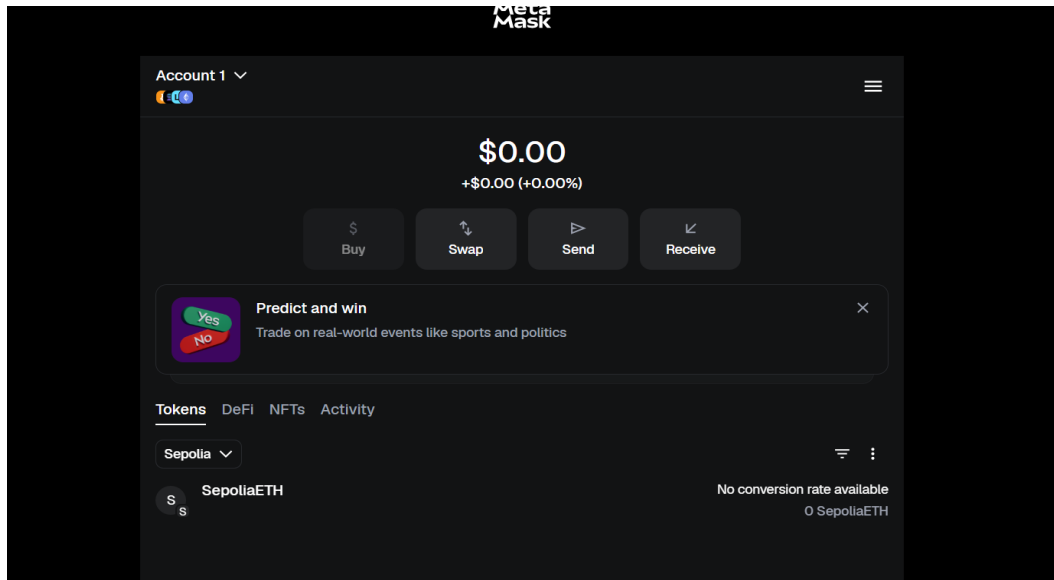|	
⑦ Transaction Hash:	0xe1b5849c0ae9a611b083f4ea3b24f0445cc296e85755cec105916b5d5bdf93fd ⎘
⑦ Status:	✓ Success
⑦ Block:	⧖ 9816116 3 Block Confirmations
⑦ Timestamp:	⏱ 38 secs ago (Dec-11-2025 09:02:00 AM UTC)
⑦ From:	0xfbfD92cdC79A41d520a00A0F2C1aE7acEF14b4AF ⎘
⑦ To:	0x08d2b0a37F869FF76BACB5Bab3278E26ab7067B7 ⎘
⑦ Value:	◊ 0.000278927154296658 ETH
⑦ Transaction Fee:	0.000000021000546 ETH
⑦ Gas Price:	0.001000026 Gwei (0.000000000001000026 ETH)
More Details:	+ Click to show more

⚗ A transaction is a cryptographically signed instruction that changes the blockchain state. Block explorers track the details of all transactions in the network. Learn more about transactions in our Knowledge Base.
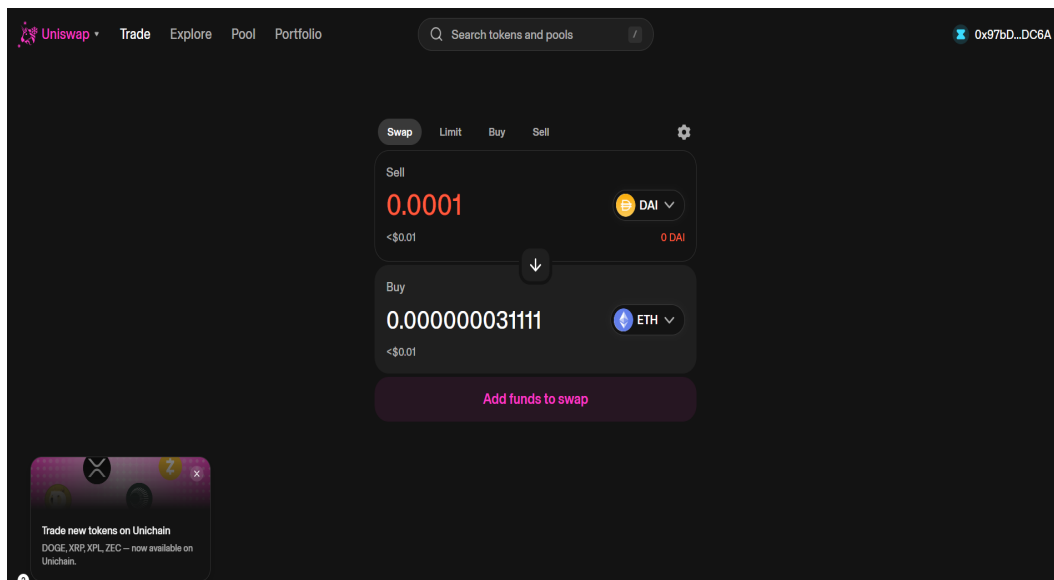
3. MetaMask Installation

4. MetaMask Configuration – Sepolia Network

5. DApp Interaction – Uniswap

Reflection

This hands-on exercise provided a comprehensive introduction to the foundational components of blockchain technology, decentralized applications, and user-level Web3 interactions. Moving beyond theoretical explanations, the practical workflow of configuring a wallet, navigating a test network, and interacting with a live DApp offered clear insight into how decentralized systems function in real-world environments.

One of the most important takeaways was understanding how blockchain differs from traditional, centralized databases. In a Web2 system, data typically resides on centralized servers controlled by a single authority, which determines access, visibility, and permissions. In contrast, blockchain operates as a distributed ledger in which data is recorded across multiple independent nodes. This decentralization ensures transparency, resilience against tampering, and user ownership of digital assets. Observing a live block on the Sepolia testnet and analyzing transaction structures made this concept significantly more tangible.

Setting up MetaMask and configuring it for the Sepolia test network also reinforced the importance of wallet security. The wallet acts as the user's identity and access point in Web3 systems, and the seed phrase serves as the ultimate recovery key. This exercise underscored the importance of secure offline storage, avoidance of digital backups, and vigilance against phishing attempts. Even simple tasks such as switching networks and locating one's public address highlighted the shift in responsibility from centralized service providers to the end user.

Interacting with a decentralized application emphasized how smart contracts automate logic on-chain. Although the swap transaction could not be completed due to the absence of testnet ETH, simply initiating a transaction flow on Uniswap demonstrated the core lifecycle of an on-chain action: the DApp prepares a contract call, MetaMask presents the execution details and gas estimation, and the user must explicitly approve the transaction. Seeing how the interface responds to insufficient funds provided additional insight into how DApps validate state and handle constraints.

Overall, this task successfully bridged conceptual understanding with practical application. By directly interacting with blockchain infrastructure, I gained a clearer view of how decentralized networks, wallets, and smart contracts operate in coordination. This experience builds a strong foundation for future development work, where understanding transaction flows, gas mechanics, and user-facing interactions will be essential.

References
- https://etherscan.io (Sepolia Testnet Explorer)
- https://metamask.io
- https://app.uniswap.org