# Web3 Basics Hands-On Project

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Course: Blockchain and Web3 Foundations

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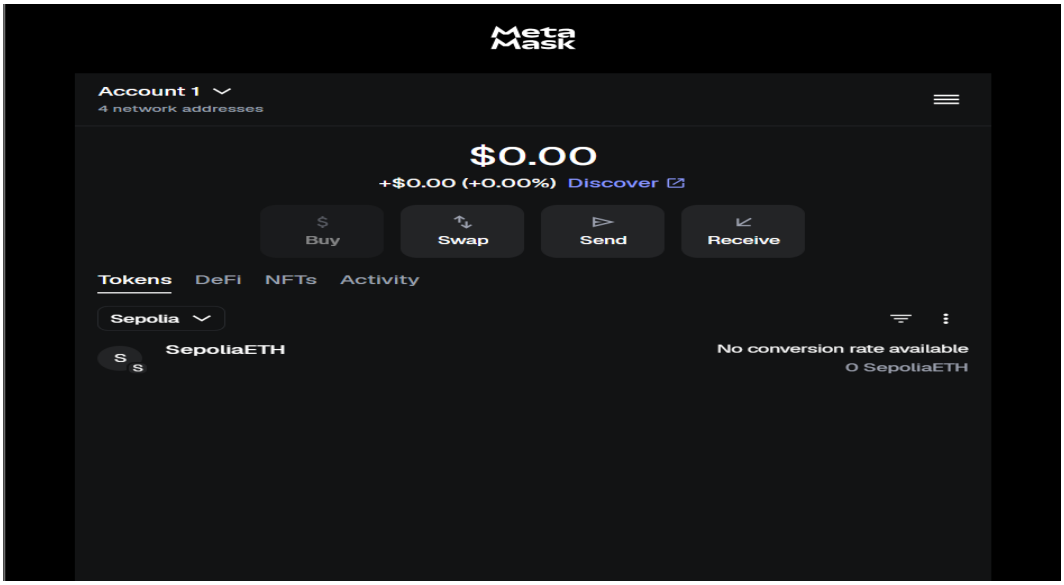
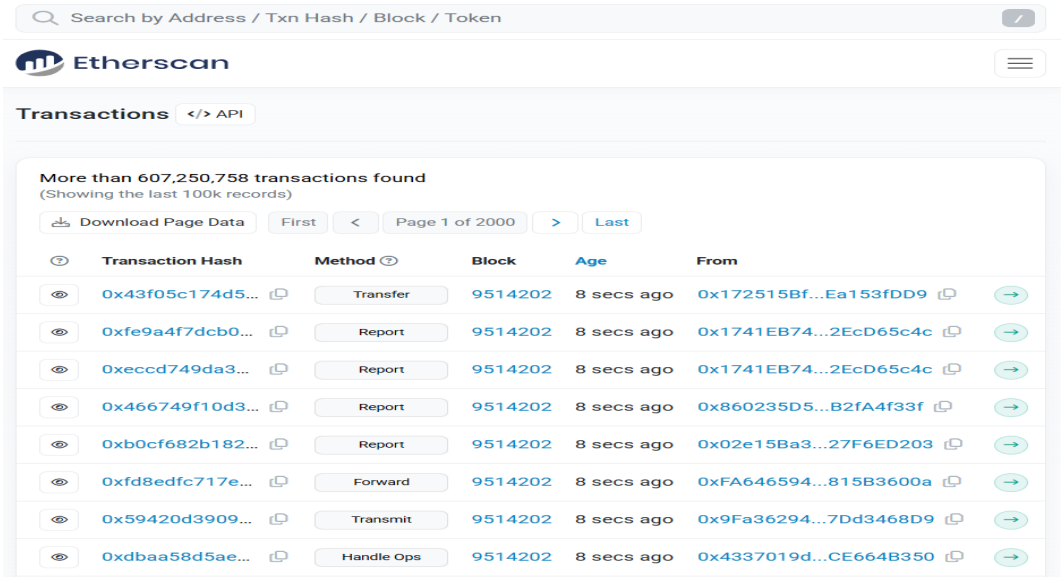
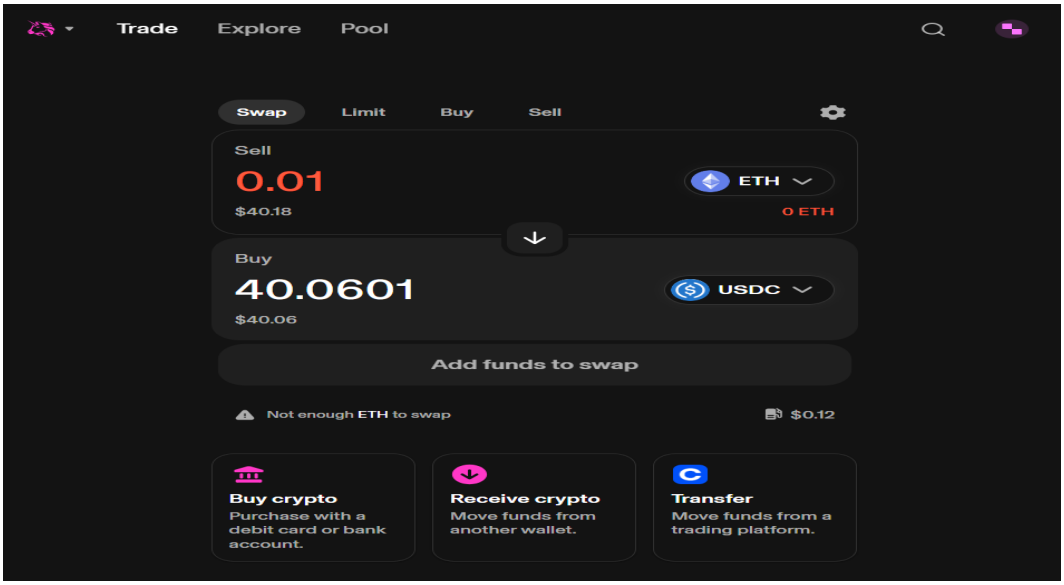
## 1. Introduction

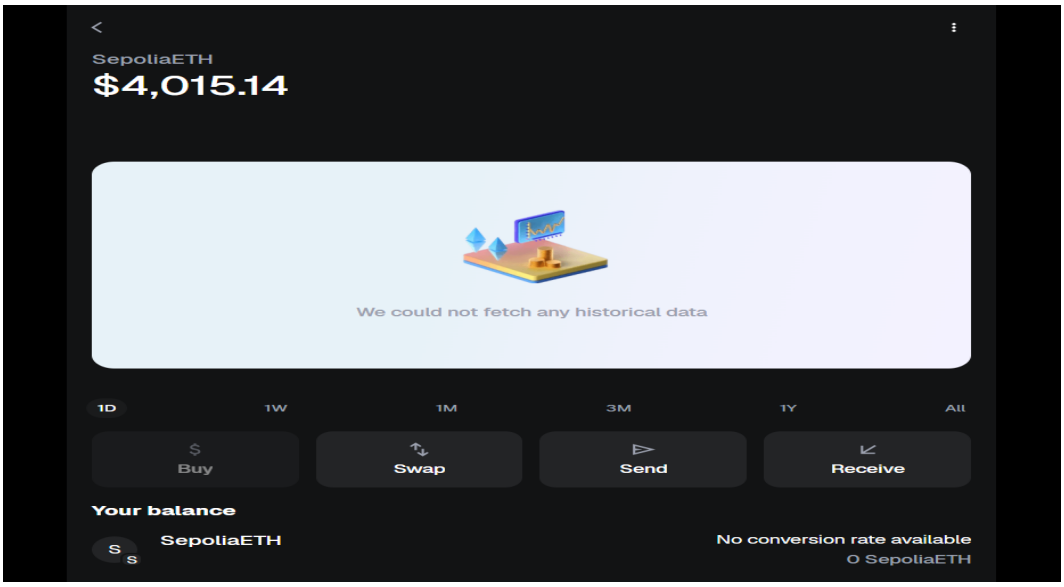
This project demonstrates the process of setting up a MetaMask wallet, configuring it to the Sepolia test network, obtaining testnet ETH from a faucet, and interacting with a DApp to understand decentralized application workflows. Through this activity, I gained hands-on experience with blockchain transactions, gas fees, smart contracts, and the importance of wallet security.

## 2. Documentation & Screenshots






Etherscan

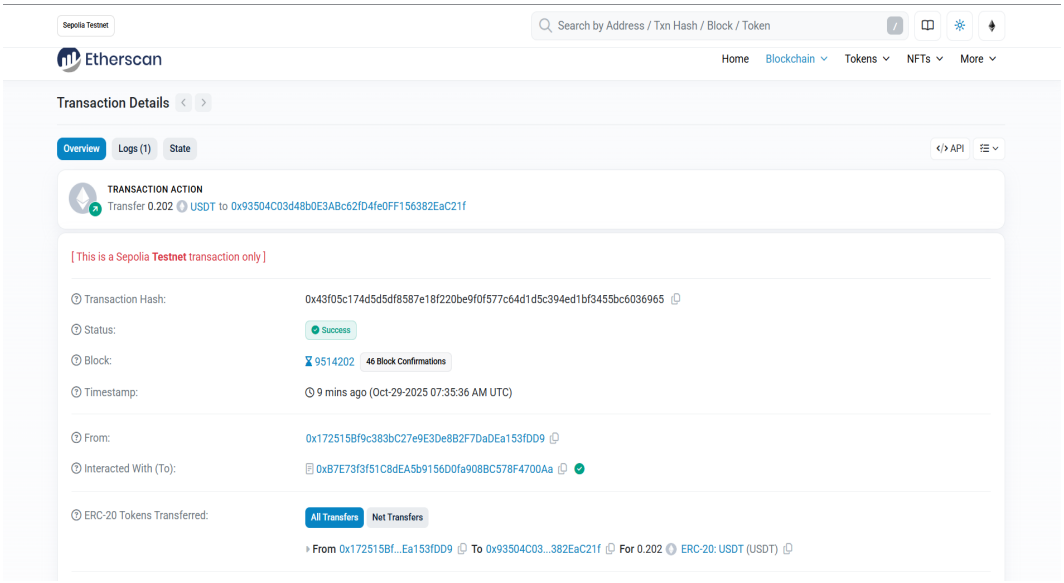
## Transaction Details

Overview | Logs (1) | State

**TRANSACTION ACTION**

Transfer 0.202 USDT to 0x93504C03d48b0E3ABc6

[ This is a Sepolia Testnet transaction only ]


Sepolia Testnet
Search by Address / Txn Hash / Block / Token
Etherscan
Home
Blockchain
Tokens
NFTs
More
Transaction Details
Overview
Logs (1)
State
API
TRANSACTION ACTION
Transfer 0.202 USDT to 0x93504C03d48b0E3ABc62fD4fe0FF156382EaC21f
[ This is a Sepolia Testnet transaction only ]
Transaction Hash:
0x43f05c174d5d5df8587e18f220be9f0f577c64d1d5c394ed1bf3455bc6036965
Status:
Success
Block:
9514202
46 Block Confirmations
Timestamp:
9 mins ago (Oct-29-2025 07:35:36 AM UTC)
From:
0x172515Bf9c383bC27e9E3De8B2F7DaDEa153fDD9
Interacted With (To):
0xB7E73f3f51C8dEA5b9156D0fa908BC578F4700Aa
ERC-20 Tokens Transferred:
All Transfers
Net Transfers
From 0x172515Bf...Ea153fDD9 To 0x93504C03...382EaC21f For 0.202 ERC-20: USDT (USDT)

## 3. Wallet & Transaction Details

**Public Wallet Address:** 0xe2643e8f15530fdfffb706c2e3011e1ba5422afb

**Transaction Hash:**
0x43f05c174d5d5df8587e18f220be9f0f577c64d1d5c394ed1bf3455bc6036965

**Etherscan Link:** View on Sepolia Etherscan

## 4. Written Reflection

**Errors or Issues Faced:**
While using MetaMask and interacting with the DApp, I encountered an issue that said “Not enough ETH to swap.” This happened because I was trying to perform a token swap on the Sepolia test network, which requires SepoliaETH to pay for gas fees. Since my wallet balance was initially zero, the transaction couldn’t proceed.

**How I Resolved or Understood the Issue:**
After researching and reviewing documentation, I realized that every transaction on a blockchain network — even on a testnet — needs a small amount of ETH as gas fees to process the transaction. Gas is paid to validators who confirm transactions. To fix the issue, I used a Sepolia faucet to request free testnet ETH. Once my wallet received the tokens, I was able to retry the transaction and successfully interact with the DApp.

**Personal Learning from the Activity:**
This hands-on exercise helped me understand how blockchain technology functions in practice. I learned how blocks store transaction data in a decentralized ledger, how consensus mechanisms like Proof of Stake (PoS) validate these transactions, and how smart contracts automate actions within DApps. By setting up MetaMask, I gained experience in wallet management, network configuration, and on-chain verification using Etherscan.

I also learned about testnets, which allow developers to experiment safely without using real currency. Overall, I developed a strong appreciation for the transparency, immutability, and user control that decentralized systems provide compared to traditional centralized applications.

**Tone:** This reflection is written in an academic and professional tone suitable for coursework submission.

## 5. Technical Summary

**Testnet Used:** Sepolia Test Network
**DApp Interacted With:** Uniswap (Testnet)
**Transactions Performed:** Faucet claim and token swap
**Errors Encountered:** “Not enough ETH to swap” message due to zero initial balance
**Troubleshooting Steps:** Claimed SepoliaETH from a faucet and retried transaction successfully

## 6. Conclusion

Through this exercise, I gained a solid understanding of Web3 fundamentals, including wallet setup, gas fees, smart contracts, and DApp interaction. I successfully performed a transaction on the Sepolia test network, verified it on Etherscan, and learned the core principles that make blockchain a secure and decentralized technology.