Web3 and Blockchain Basics – Hands-on Submission

This document presents my hands-on learning experience with Web3 and blockchain fundamentals. The objective of this task was to gain practical exposure by setting up a crypto wallet, connecting to an Ethereum test network, acquiring testnet assets, and interacting with a decentralized application (DApp). All activities were performed in a safe testnet environment using industry-standard tools.

1. Wallet Setup (MetaMask)

I installed the MetaMask browser extension from the official website and created a new wallet. During setup, a Secret Recovery Phrase was generated and securely stored offline. The wallet was successfully initialized and ready for Web3 interaction.

2. Network Configuration

The wallet was configured to use the Ethereum Sepolia Test Network. This ensures all transactions are performed with test ETH, eliminating real financial risk.

3. Receiving Testnet ETH

Testnet ETH was requested using the Alchemy and Chainlink Sepolia faucets. The wallet address was copied from MetaMask and used to receive test tokens.

4. Transaction Verification

All incoming transactions were verified on Sepolia Etherscan using the transaction hash. The explorer confirmed successful transfers and block confirmations.

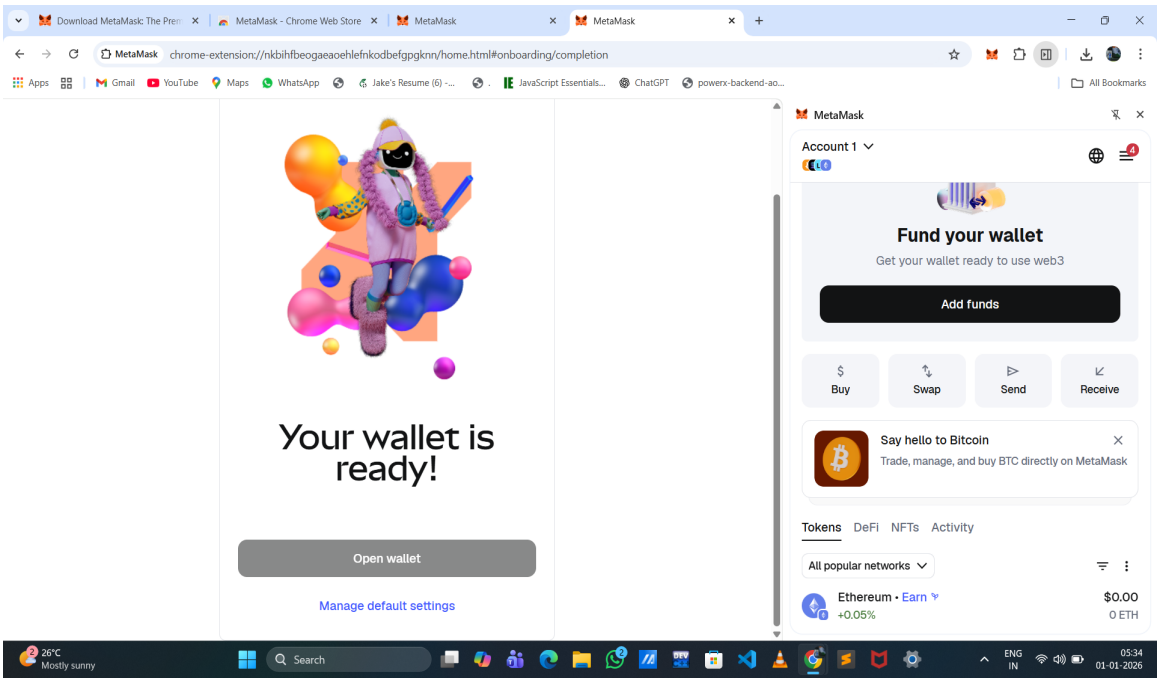
5. DApp Interaction (Uniswap)

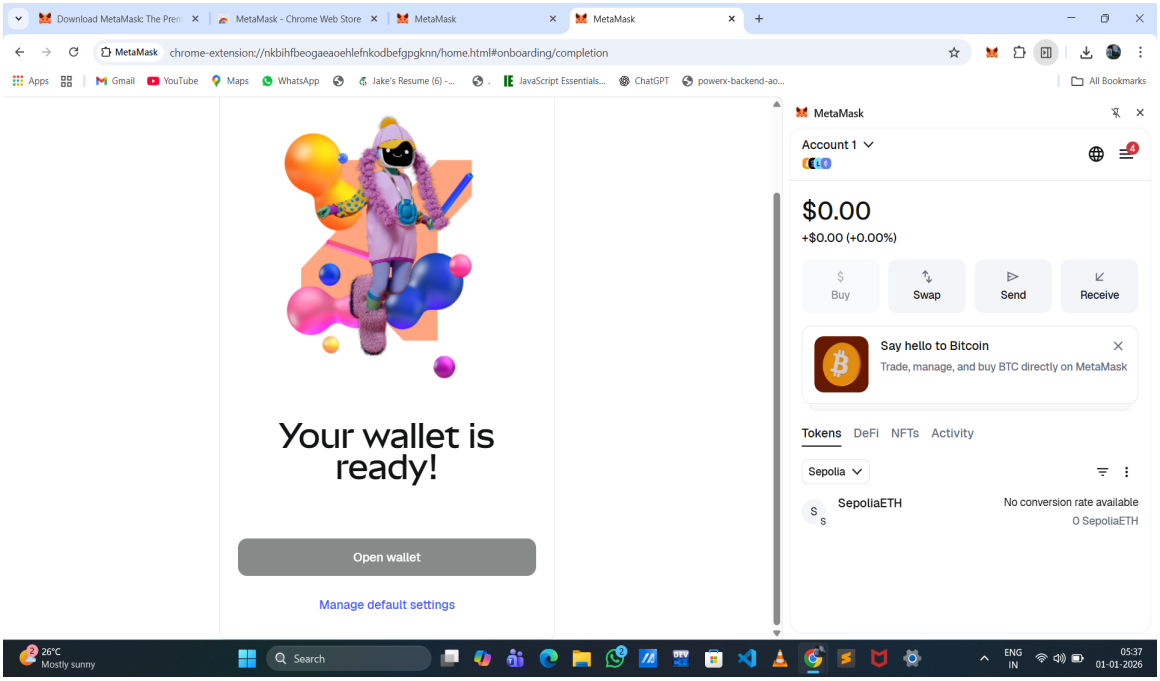
The MetaMask wallet was connected to the Uniswap DApp on the Sepolia network. The interface successfully detected the wallet, allowing on-chain interactions.

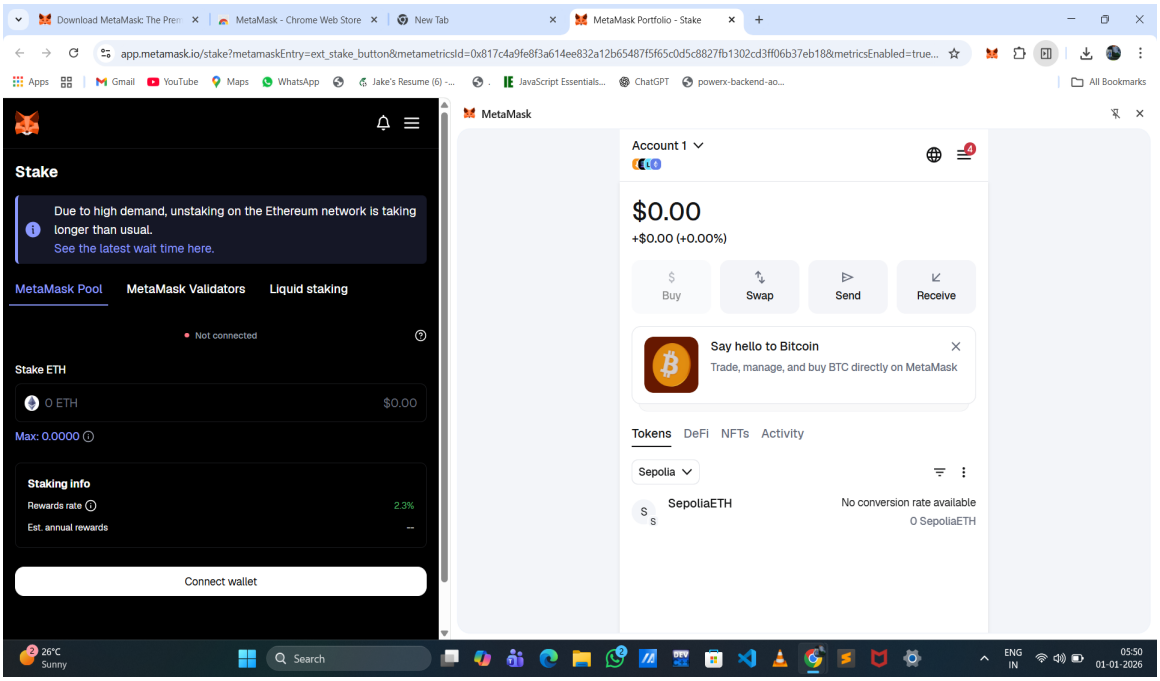
6. Additional Web3 Exploration

The wallet was also connected to ENS and MetaMask Portfolio interfaces, demonstrating cross-DApp compatibility and user-controlled identity.

Screenshots Evidence






Download MetaMask: The Pren
MetaMask - Chrome Web Store
New Tab
MetaMask Portfolio - Stake
app.metamask.io/stake?metamaskEntry=ext_stake_button&metametricsId=0x817c4a9fe8f3a614ee832a12b65487f5f65c0d5c8827fb1302cd3ff06b37eb18&metricsEnabled=true...
Apps
Gmail
YouTube
Maps
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All Bookmarks
Stake
Due to high demand, unstaking on the Ethereum network is taking longer than usual.
See the latest wait time here.
MetaMask Pool
MetaMask Validators
Liquid staking
Not connected
Stake ETH
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Max: 0.0000
Staking info
Rewards rate
2.3%
Est. annual rewards
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Connect wallet
MetaMask
Account 1
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+$0.00 (+0.00%)
Buy
Swap
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Say hello to Bitcoin
Trade, manage, and buy BTC directly on MetaMask
Tokens
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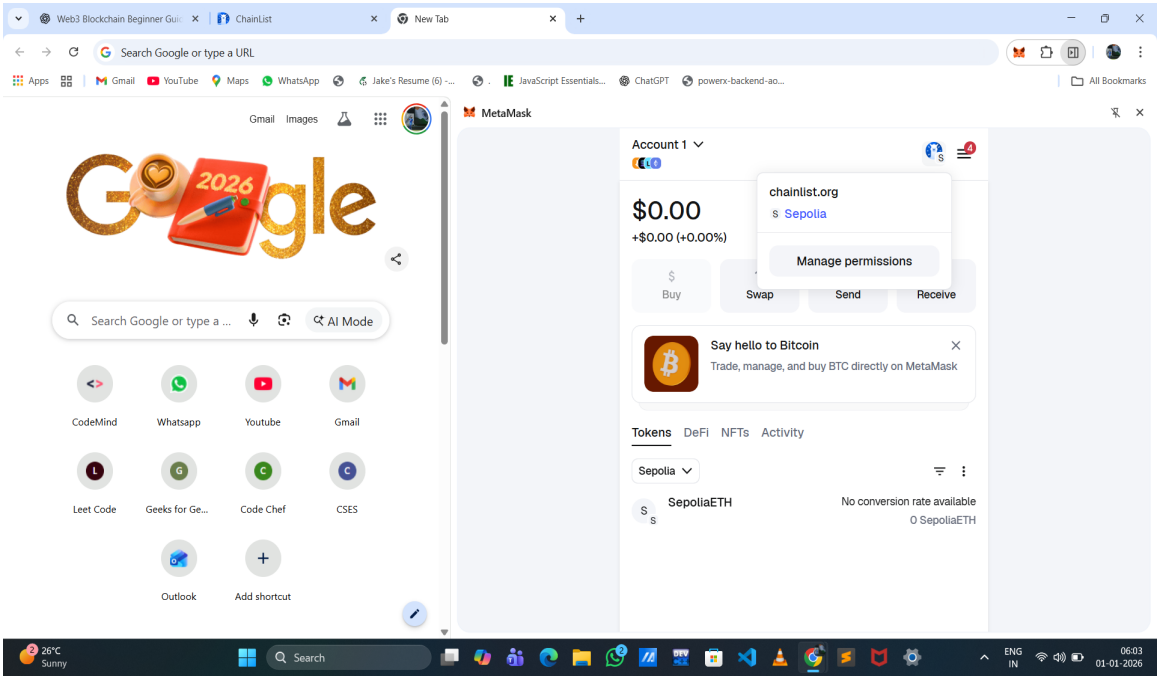
Web3 Blockchain Beginner Guic
ChainList
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Buy
Swap
Send
Receive
Say hello to Bitcoin
Trade, manage, and buy BTC directly on MetaMask
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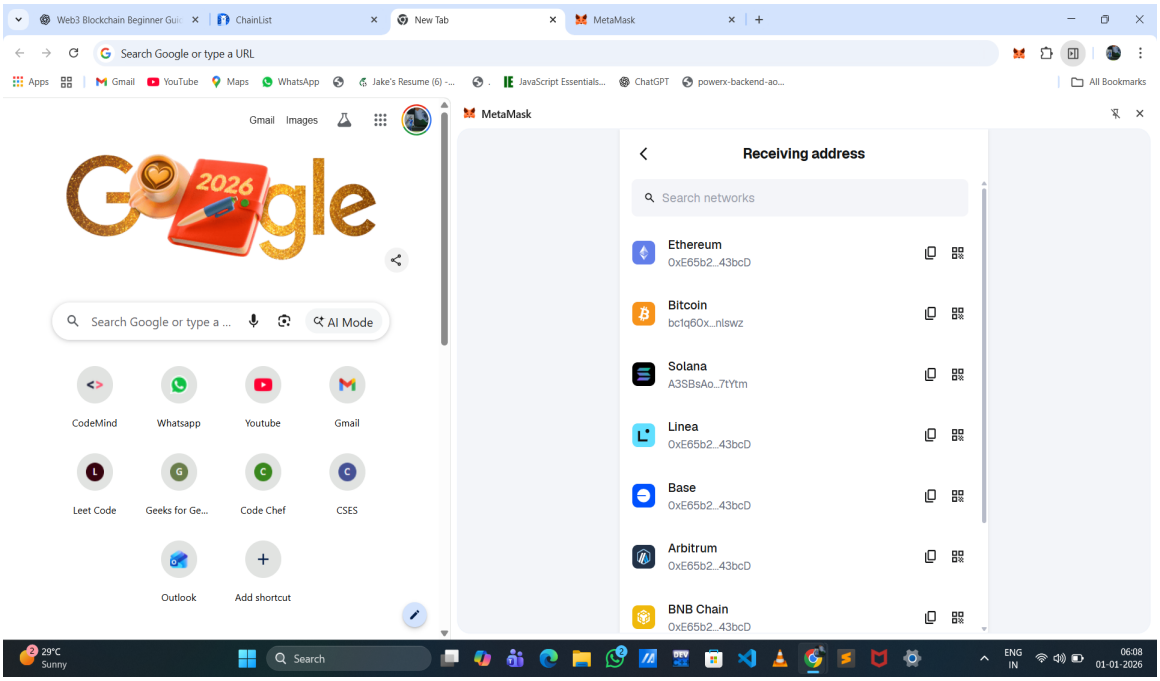
Web3 Blockchain Beginner Guic
ChainList
New Tab
MetaMask
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Jake's Resume (6) -...
JavaScript Essentials...
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Ethereum
0xE65b2...43bcD
Bitcoin
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Solana
A3SBsAo...7tYtm
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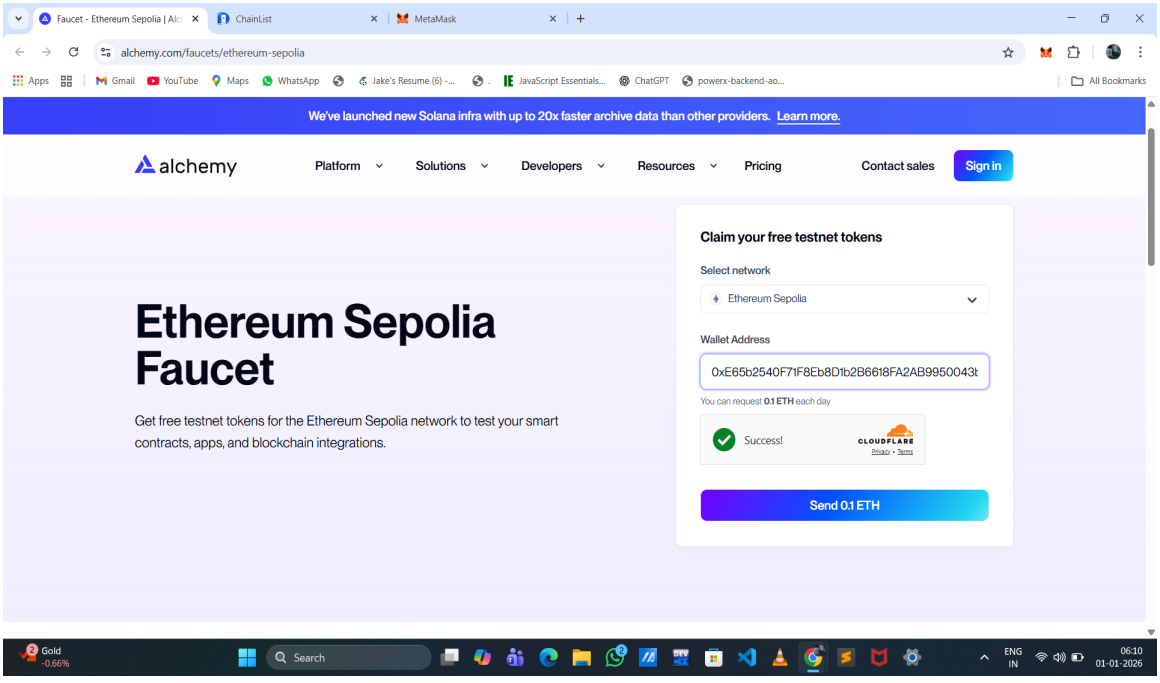
Faucet - Ethereum Sepolia | Alc
ChainList
MetaMask
alchemy.com/faucets/ethereum-sepolia
Apps
Gmail
YouTube
Maps
WhatsApp
Jake's Resume (6) -...
JavaScript Essentials...
ChatGPT
powerx-backend-ao...
All Bookmarks
We've launched new Solana infra with up to 20x faster archive data than other providers. Learn more.
alchemy
Platform
Solutions
Developers
Resources
Pricing
Contact sales
Sign in
Ethereum Sepolia Faucet
Get free testnet tokens for the Ethereum Sepolia network to test your smart contracts, apps, and blockchain integrations.
Claim your free testnet tokens
Select network
Ethereum Sepolia
Wallet Address
0xE65b2540F71F8Eb8D1b2B6618FA2AB9950043
You can request 0.1 ETH each day
Success!
CLOUDFLARE
Send 0.1 ETH
Gold
-0.66%
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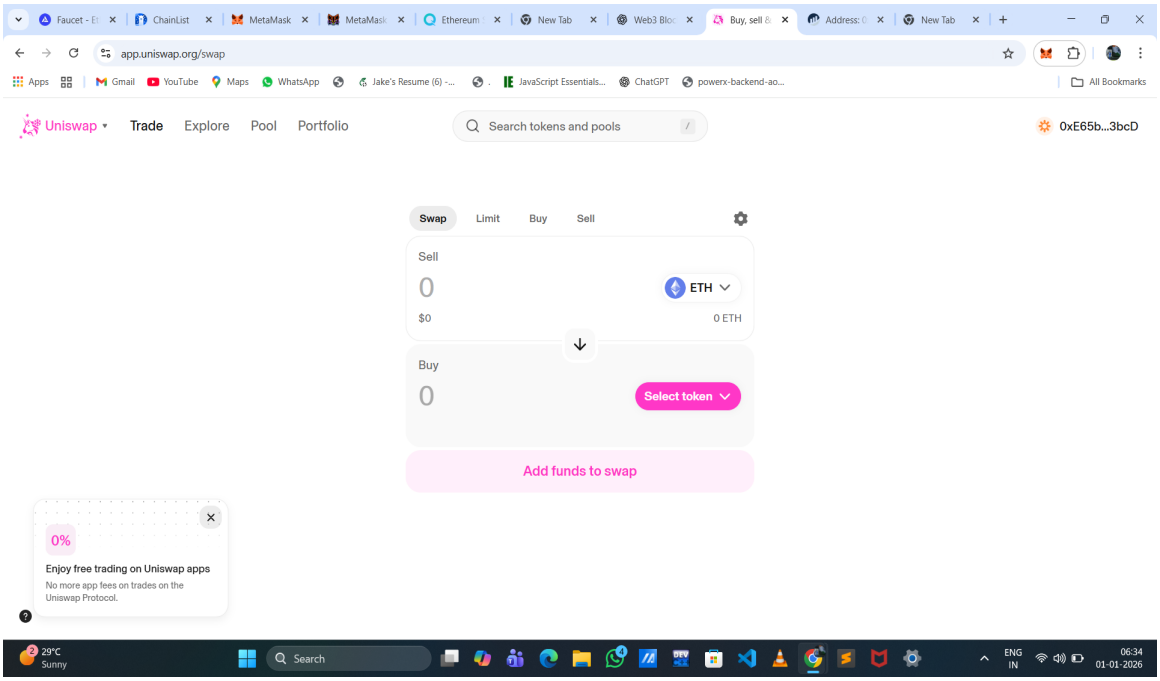
app.uniswap.org/swap
Uniswap
Trade
Explore
Pool
Portfolio
Search tokens and pools
0xE65b...3bcD
Swap
Limit
Buy
Sell
Sell
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Add funds to swap
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Enjoy free trading on Uniswap apps
No more app fees on trades on the Uniswap Protocol.
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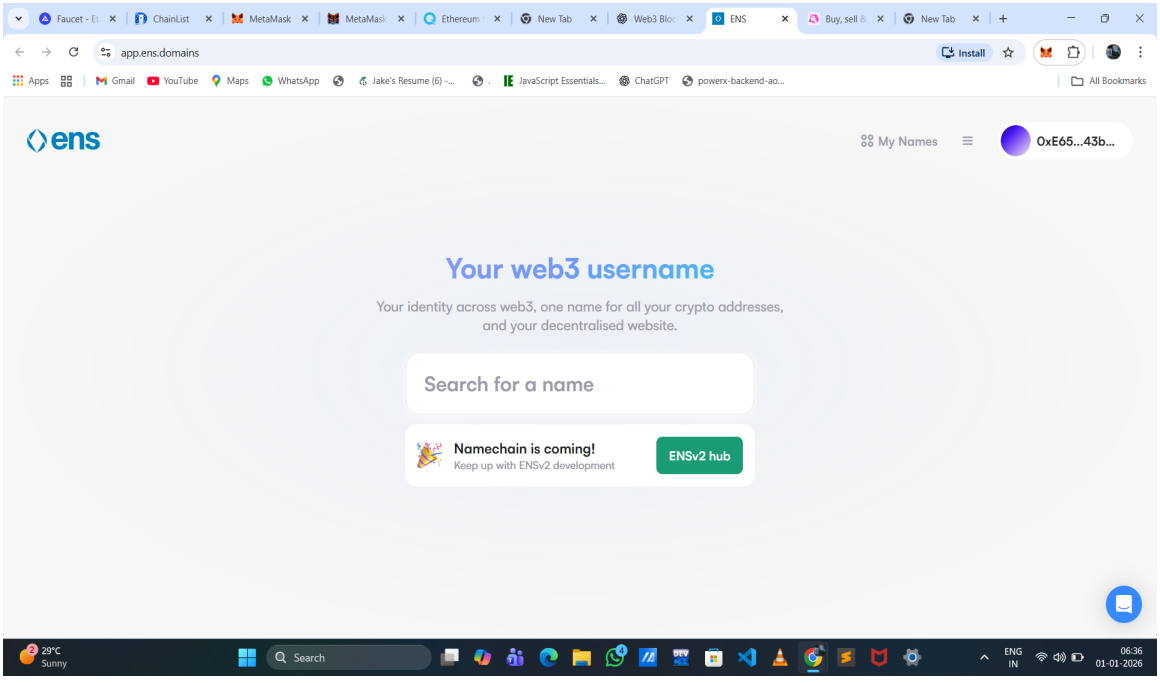
app.ens.domains
Install
ens
My Names
0xE65...43b...
Your web3 username
Your identity across web3, one name for all your crypto addresses, and your decentralised website.
Search for a name
Namechain is coming!
Keep up with ENSv2 development
ENSv2 hub
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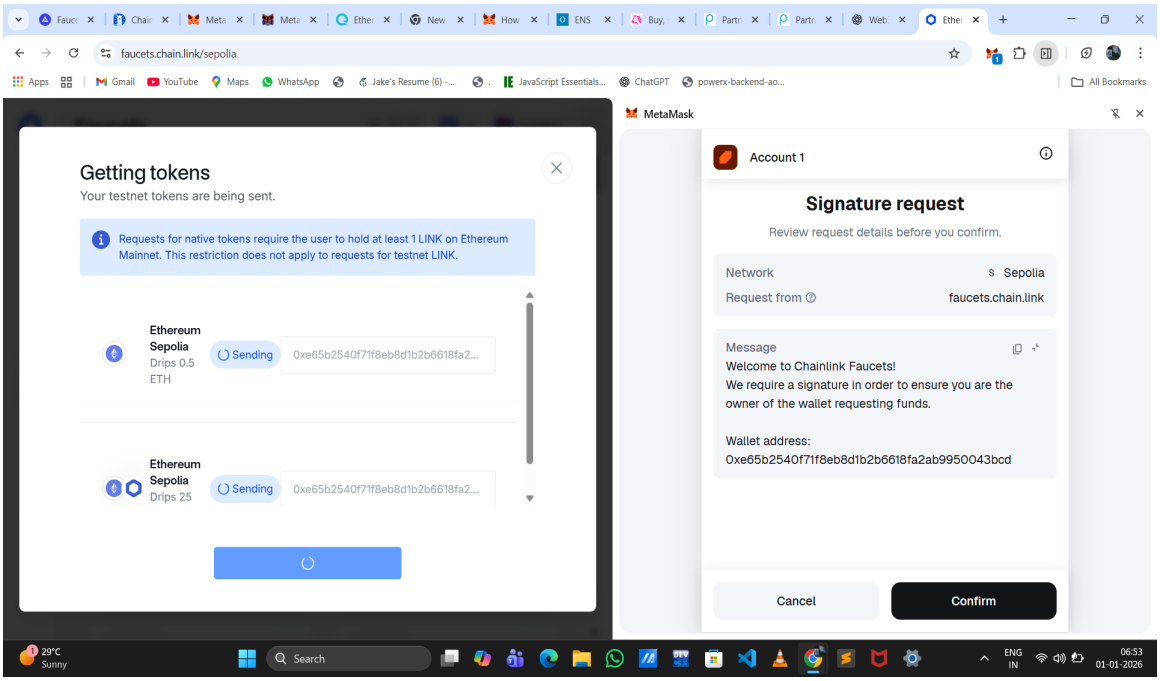
faucets.chain.link/sepolia
Getting tokens
Your testnet tokens are being sent.
Requests for native tokens require the user to hold at least 1 LINK on Ethereum Mainnet. This restriction does not apply to requests for testnet LINK.
Ethereum Sepolia
Drips 0.5 ETH
Sending
0xe65b2540f71f8eb8d1b2b6618fa2...
Ethereum Sepolia
Drips 25
Sending
0xe65b2540f71f8eb8d1b2b6618fa2...
MetaMask
Account 1
Signature request
Review request details before you confirm.
Network
Sepolia
Request from
faucets.chain.link
Message
Welcome to Chainlink Faucets!
We require a signature in order to ensure you are the owner of the wallet requesting funds.
Wallet address:
0xe65b2540f71f8eb8d1b2b6618fa2ab9950043bcd
Cancel
Confirm
29°C
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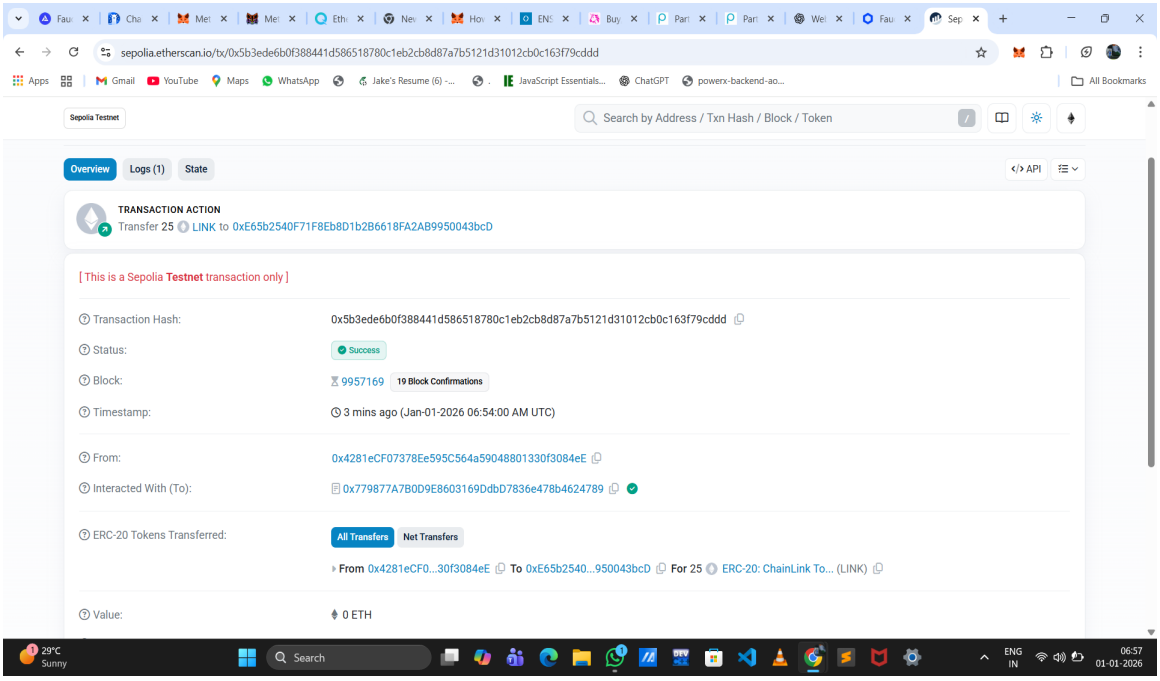
sepolia.etherscan.io/tx/0x5b3ede6b0f388441d586518780c1eb2cb8d87a7b5121d31012cb0c163f79cddd
Sepolia Testnet
Search by Address / Txn Hash / Block / Token
Overview
Logs (1)
State
API
TRANSACTION ACTION
Transfer 25 LINK to 0xE65b2540F71F8Eb8D1b2B6618FA2AB9950043bcD
[This is a Sepolia Testnet transaction only]
Transaction Hash:
0x5b3ede6b0f388441d586518780c1eb2cb8d87a7b5121d31012cb0c163f79cddd
Status:
Success
Block:
9957169
19 Block Confirmations
Timestamp:
3 mins ago (Jan-01-2026 06:54:00 AM UTC)
From:
0x4281eCF07378Ee595C564a59048801330f3084eE
Interacted With (To):
0x779877A7B0D9E8603169DdbD7836e478b4624789
ERC-20 Tokens Transferred:
All Transfers
Net Transfers
From 0x4281eCF0...30f3084eE To 0xE65b2540...950043bcD For 25 ERC-20: ChainLink To... (LINK)
Value:
0 ETH
29°C
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Reflection

Reflection (300–500 words)

This practical exercise provided a clear understanding of how blockchain technology differs from traditional systems.
Unlike centralized databases that are controlled by a single authority, blockchain operates as a decentralized,
immutable ledger distributed across many nodes. Once data is written to the blockchain and confirmed, it cannot
be altered, ensuring transparency and trust without intermediaries.

Smart contracts played a key role in understanding decentralized applications. These are self-executing programs
deployed on the blockchain that automatically perform actions when predefined conditions are met. Interacting
with Uniswap demonstrated how smart contracts remove the need for centralized exchanges by allowing users to trade
directly from their wallets.

Wallet security emerged as a critical responsibility in Web3. Unlike Web2 platforms where account recovery is possible,
Web3 wallets rely entirely on private keys and recovery phrases. Losing access to these credentials results in
permanent loss of funds. This reinforces the importance of secure offline storage and vigilance against phishing attacks.

Gas fees and transaction confirmation times were also observed. Every blockchain interaction consumes gas, which
represents the computational cost paid to validators. On the Sepolia testnet, gas fees were minimal, but the process
mirrored real mainnet conditions. Transactions required network confirmation and could be tracked transparently
through a block explorer.

Overall, this task transformed abstract blockchain concepts into tangible experiences. Setting up a wallet,
receiving testnet assets, and interacting with real DApps provided confidence and a strong foundation for future
Web3 development and participation.