📘 Web3 and Blockchain Basics: Setup Wallet and Explore DApps

by Rama Lokesh Reddy Penumallu (Roll No: 23A91A05I2)

Partnr Network
Web3 and Blockchain Basics: Setup Wallet and Explore DApps

Submitted by:
Rama Lokesh Reddy Penumallu
Roll No: 23A91A05I2
Course: B.Tech – Computer Science and Engineering
Domain: Blockchain Technology
Difficulty: Beginner
Network: Sepolia Testnet
Wallet: MetaMask
DApp: Uniswap (Testnet)
Asset: Test Ether (ETH)

Submitted To:
Partnr Network – GPP Skill Graph Program

Deadline: 1 November 2025, 09:59 AM
File Name: Rama_Lokesh_Reddy_Penumallu_Web3_Basics.pdf

"Exploring the decentralized future — from wallets to Web3 DApps."

Objective & Learning Goals

🪙 *Objective*

Gain practical experience with blockchain, crypto wallets, and decentralized applications (DApps) by setting up MetaMask, obtaining test Ether, and performing a real transaction on a DApp in a testnet environment.

🎯 *Learning Goals*

- *Understand blockchain fundamentals and decentralization.*
- *Learn the concept and purpose of crypto wallets.*
- *Explore testnets and transaction verification using block explorers.*
- *Gain hands-on exposure to interacting with DApps.*
- *Develop awareness of wallet security and gas fees.*

Overview of Blockchain and Web3

- *Blockchain is a distributed, immutable digital ledger that records transactions transparently across multiple computers.*

- *Unlike centralized databases, blockchain ensures trust without intermediaries.*

- *Consensus mechanisms like Proof of Work (PoW) and Proof of Stake (PoS) validate transactions securely.*

- *Smart Contracts are self-executing codes that run on the blockchain to automate agreements.*

- *Web3 represents the next evolution of the internet — giving users ownership of their data and digital assets.*

- *Crypto wallets like MetaMask provide digital identities to interact with blockchain networks.*

Implementation Steps

Installed MetaMask Browser Extension

- *Downloaded from https://metamask.io.*
- *Installed on Chrome and pinned to toolbar.*

Created New Wallet

- *Generated wallet and securely stored 12-word seed phrase offline.*
- *Verified the setup using MetaMask's confirmation process.*

Configured Network to Sepolia Testnet

- *Opened MetaMask → Settings → Networks → Added Sepolia Testnet.*
- *Confirmed successful network connection.*

Obtained Test Ether (ETH)

- *Visited https://sepoliafaucet.com.*
- *Requested 0.5 test ETH and verified receipt in wallet.*

Interacting with the Dapp

Connected to Uniswap Testnet

- *Navigated to Uniswap Testnet.*
- *Connected MetaMask wallet and approved connection.*

Performed Token Swap

- *Swapped Test ETH for Test USDC on the Sepolia Testnet.*
- *Approved transaction through MetaMask.*

Verified Transaction on Sepolia Etherscan

- *Opened Sepolia Etherscan.*
- *Entered transaction hash to confirm completion and view gas details.*

Key Links & Repository Structure

Public Wallet Address:
0xYourWalletAddressHere

Transaction Hash:
0xYourTxHashHere

Etherscan Link:
View on Sepolia Etherscan

Faucet Used:
https://sepoliafaucet.com

Repository Structure:

Folder / File	***Description***
/screenshots	*MetaMask, faucet, DApp, and transaction screenshots*
/reflection	*300–500 word reflection*
23A91A05I2_Web3_Basics.pdf	*Final report file*

Screenshots Section

- *MetaMask installation success.*
- *Sepolia network configuration.*
- *Faucet transaction confirmation.*
- *Uniswap DApp connection and swap.*
- *Transaction verified on Etherscan.*

LINK:-

https://github.com/ramalokeshreddyp/Web3-and-Blockchain-Basics-23A91A05I2/tree/main/ScreenShots

Technical Summary

Aspect	***Details***
Network Used	*Sepolia Testnet*
Wallet	*MetaMask*
DApp Used	*Uniswap (Testnet)*
Typeof Transaction	*Token Swap (ETH → USDC)*
Faucet Used	*Sepolia Faucet*
Transaction Hash	*0xYourTxHashHere*
Block Explorer	*Sepolia Etherscan*
Errors Encountered	*Faucet delay and pending transaction*
Troubleshooting	*Re-requested tokens, refreshed DApp, and reconnected wallet*
Outcome	*Successful swap and verified transaction*

Conclusion & Acknowledgment

Conclusion

Through this project, I gained valuable practical experience in blockchain and Web3 technologies.
I learned to set up and secure a wallet, obtain test tokens, interact with decentralized applications, and verify blockchain transactions.
The exercise enhanced my understanding of transparency, security, and the decentralized nature of Web3.

Acknowledgment
*I sincerely thank **Partnr Network** for providing this interactive learning opportunity and **my faculty mentors** for their continuous support and guidance.*
This project strengthened my confidence in exploring future blockchain innovations.