



School: Campus:
Academic Year: Subject Name: Subject Code:
Semester: Program: Branch: Specialization:
Date:

Applied and Action Learning

(Learning by Doing and Discovery)

Name of the Experiment : 4 ERC-20 Basics – Tokenization Concepts

* Coding Phase: Pseudo Code / Flow Chart / Algorithm

1. **Start**
2. Open **Remix IDE** and select Solidity environment.
3. Write ERC-20 token contract code using **OpenZeppelin** template.
4. Compile the smart contract.
5. Connect **MetaMask** to **Sepolia Testnet** (or other testnet).
6. Deploy the contract through Remix (Injected Web3).
7. Copy the deployed **contract address**.
8. Import the token in MetaMask using its contract address.
9. Open a DeFi DEX (e.g., **Uniswap testnet**).
10. Connect wallet, select tokens (ETH → Deployed Token/DAI).
11. Enter swap amount and confirm the transaction in MetaMask.
12. Verify updated balance in MetaMask.
13. **Stop**

Software used

1. MetaMask Wallet
2. Remix IDE.
3. MS Word.
4. Brave for researching.

* Implementation Phase: Final Output (no error)

- Open Remix IDE and create a new Solidity file.
- Paste ERC-20 token code from OpenZeppelin and customize (name, symbol, supply).
- Compile the file using Solidity 0.8.x compiler.
- Connect MetaMask to Sepolia Testnet.
- Deploy the token contract from Remix using “Injected Web3.”
- Approve the deployment transaction in MetaMask.
- Copy the deployed contract address from Remix.
- In MetaMask, go to **Import Tokens** and paste the contract address.
- Open Uniswap testnet, connect MetaMask.
- Swap ETH to your deployed token or DAI.
- Confirm transaction in MetaMask and wait for it to process (~12 seconds).
- Check updated token balance in MetaMask; manually import token if not visible.

* Observations:

- ☐ Writing (set) requires gas and confirmation from MetaMask.
- ☐ Reading (get) is free and fast.
- ☐ Updates reflect in UI once the transaction is confirmed.

ASSESSMENT

Rubrics	Full Mark	Marks Obtained	Remarks
Concept	10		
Planning and Execution/ Practical Simulation/ Programming	10		
Result and Interpretation	10		
Record of Applied and Action Learning	10		
Viva	10		
Total	50		

Signature of the Student:

Name :

Regn. No. :

Signature of the Faculty: