



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: Build DeFi – AMM or Lending Prototype

***Coding Phase: Pseudo Code / Flow Chart / Algorithm**

1. First we need to create two ERC-20 Tokens named as TokenA and TokenB
2. Then write smart contracts for TokenA and TokenB using Solidity.
3. Deploy both tokens to Sepolia test network using Remix IDE.
4. Save the deployed contract addresses for future reference and interaction.
5. Open MetaMask and add both TokenA and TokenB using their contract addresses to view and manage balances
6. Write AMM Contract in Solidity
7. Develop an Automated Market Maker (AMM) contract named as 'swap.sol' to handle liquidity pools and token swaps.
8. Then we need to include the following functions: addLiquidity() and swapTokens()
9. Compile the AMM Contract and deploy the AMM contract to the same network as our tokens.
10. Save the deployed AMM contract address for token approvals and interaction.
11. Approve TokenA for AMM Access via MetaMask
12. Use MetaMask to approve the AMM contract to spend a selected amount of TokenA on our behalf.
13. Similarly, approve the AMM contract to spend TokenB.
14. Call the addLiquidity() function from the AMM contract to deposit TokenA and TokenB into the pool.
15. Confirm successful liquidity addition by checking the contract's reserve balances or return values.
16. Use the AMM's swapTokens() function to exchange TokenA for TokenB or vice versa.
17. Confirm Swap and Balances.
18. Verify the transaction on the blockchain (e.g., Sepolia Etherscan) and check updated balances in MetaMask.

***Software used :**

- Web browser (Brave or Microsoft edge)
- MetaMask wallet
- Ethereum Sepolia Test Network
- Remix IDE

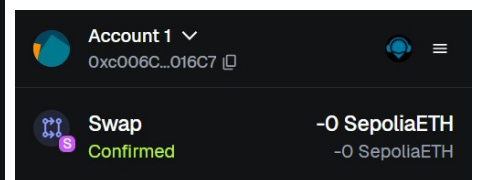
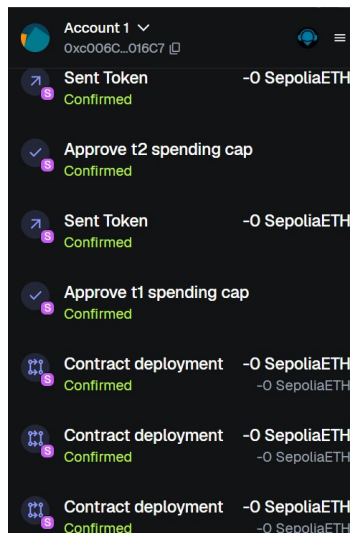
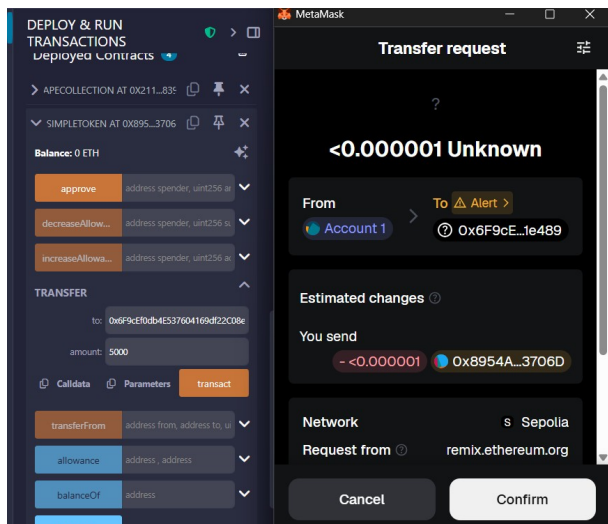
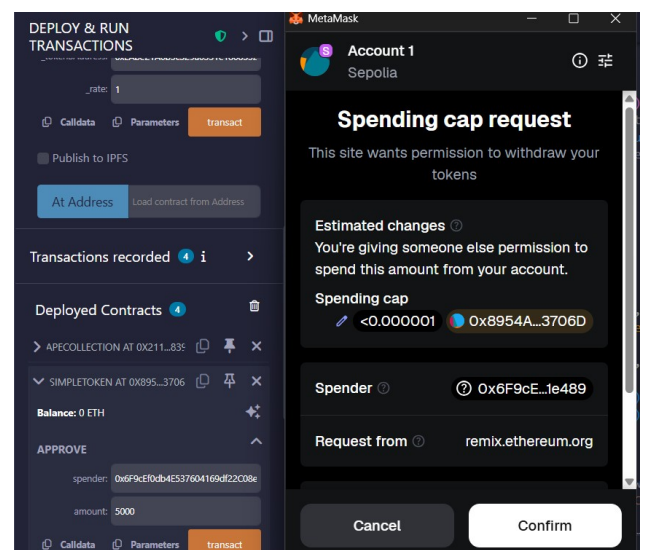
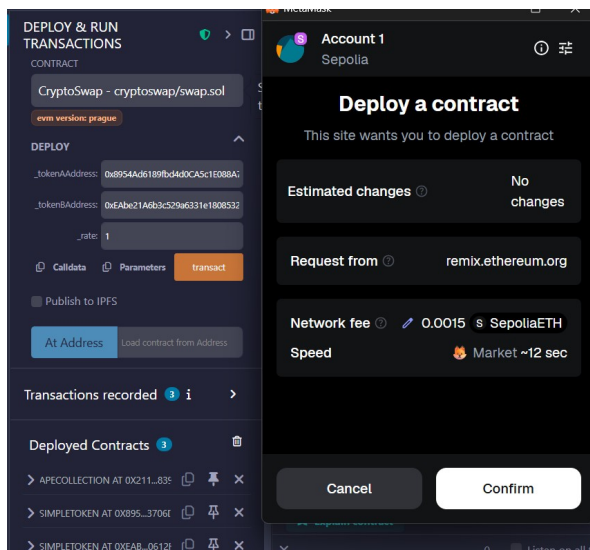
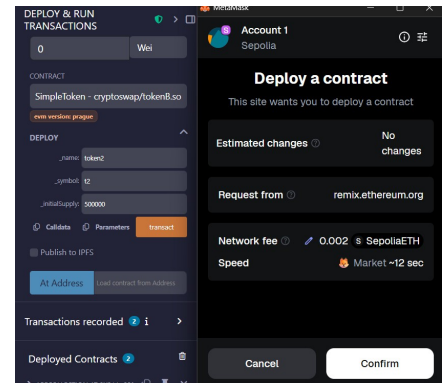
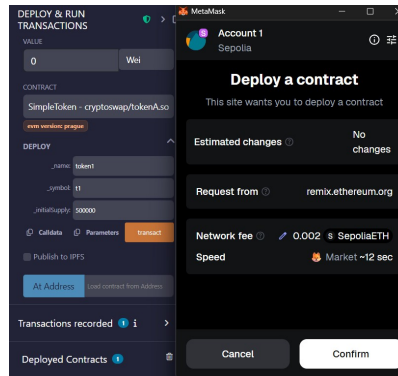
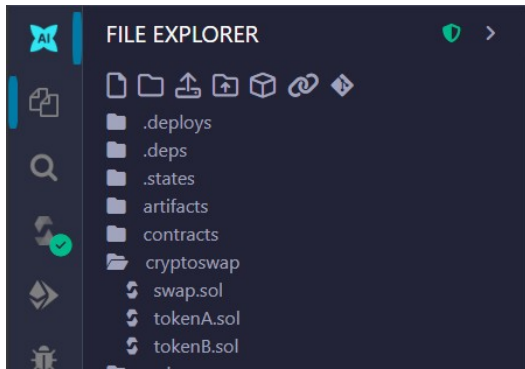
*** Testing Phase: Compilation of Code (error detection)**

No Error

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**** As applicable according to the experiment.
Two sheets per experiment (10-20) to be used.***

* Implementation Phase: Final Output (no error)



*** Observation :**

- The tokens (TokenA and TokenB) were created and appeared correctly in MetaMask.
- The AMM smart contract successfully accepted both tokens when adding liquidity.
- Swapping between the tokens worked, and balances were updated correctly.
- All actions were confirmed on the test network without any problems.

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 :**

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