



Centurion
UNIVERSITY
*Shaping Lives...
Empowering Communities...*

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 :

* Coding Phase: Pseudo Code / Flow Chart / Algorithm

Algorithm:

1. Open Remix IDE.
2. Create a new Solidity file.
3. Write the ERC-20 token contract code.
4. Compile the contract.
5. Select "Injected Provider - MetaMask" as environment.
6. Deploy the contract using MetaMask.
7. Confirm the transaction in MetaMask.
8. Copy the deployed contract address.
9. Explore the token on Etherscan.
10. Add the token to MetaMask using the contract address.
11. Go to Remix, open the deployed contract in the "Deployed Contracts" section.
12. Call the transfer function to send tokens to another wallet.

* Softwares used

1. Remix IDE
2. MetaMask
3. Etherscan
4. OpenZeppelin Contracts
5. Brave Web Browser

* Testing Phase: Compilation of Code (error detection)

Open your browser and go to <https://remix.ethereum.org>. This is where you'll write, compile, and deploy your smart contract. In the left panel, click on the "contracts" folder.

Click the "+" icon to create a new file (e.g., tobi.sol) Write the ERC-20 Token Code

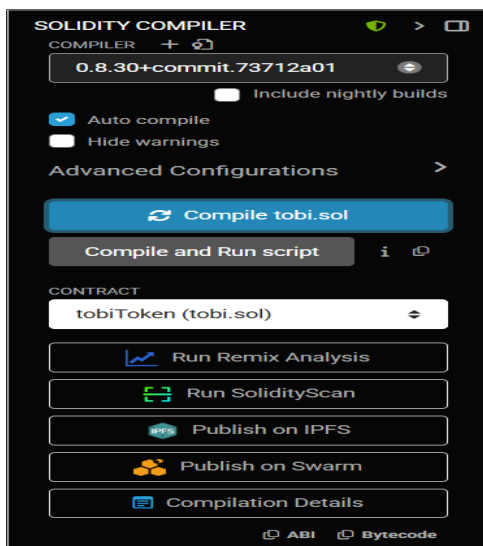


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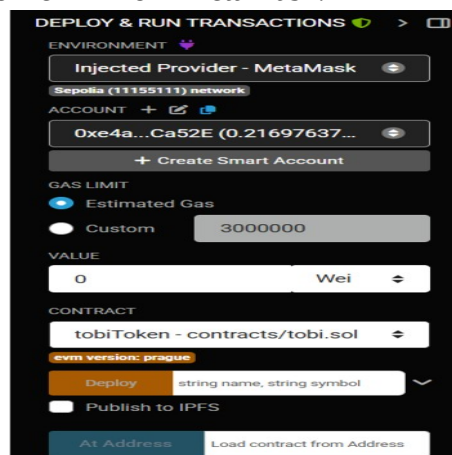
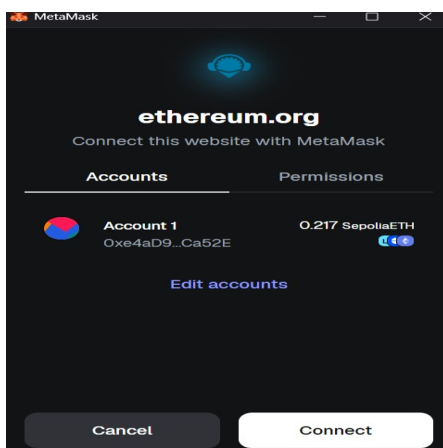
1 // SPDX-License-Identifier: MIT
2 pragma solidity ^0.8.20;
3
4 import "@openzeppelin/contracts/token/ERC20/ERC20.sol";
5
6 contract tobiToken is ERC20 {
7     constructor(string memory name, string memory symbol) ERC20(name, symbol) {
8         _mint(msg.sender, 1000000 * 10 ** decimals());
9     }
10 }
11
  
```

This code creates an ERC-20 token with customizable name and symbol. It also mints 1 million tokens to the deployer's wallet.

Compile the Contract Go to the "Solidity Compiler" tab on the left. Select compiler version 0.8.20. Click the "Compile tobi.sol" button. Ensure no errors are shown in the console.

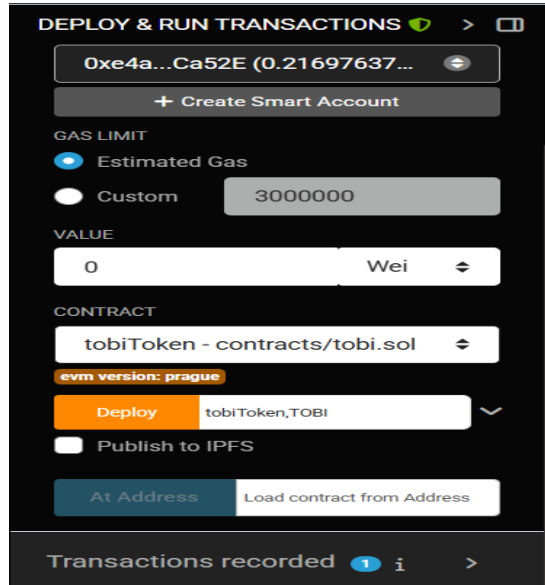
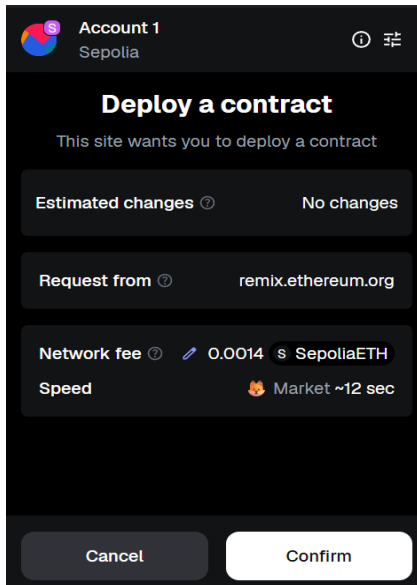


Go to "Deploy & Run Transactions" in Remix. Select "Injected Provider - MetaMask" as the environment. Approve the connection to Remix from MetaMask.



* Testing Phase: Compilation of Code (error detection)

Deploy the Contract ,Enter the name and symbol for your token in the constructor parameters (e.g., "TobiCoin", "TOB").Click "Deploy".MetaMask will pop up – approve the transaction.

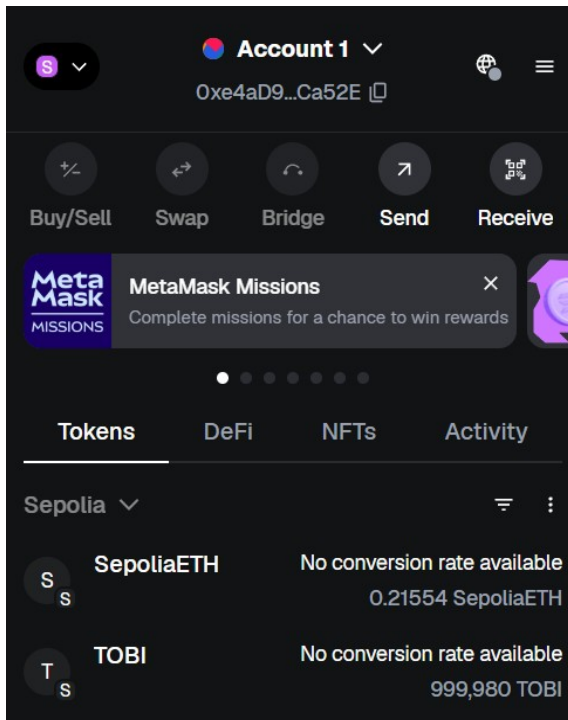


Explore Contract on Etherscan ,Go to <https://etherscan.io> or the testnet version (e.g., sepolia.etherscan.io).Paste your contract address into the search bar.View details like token name, total supply, transactions, and contract code.

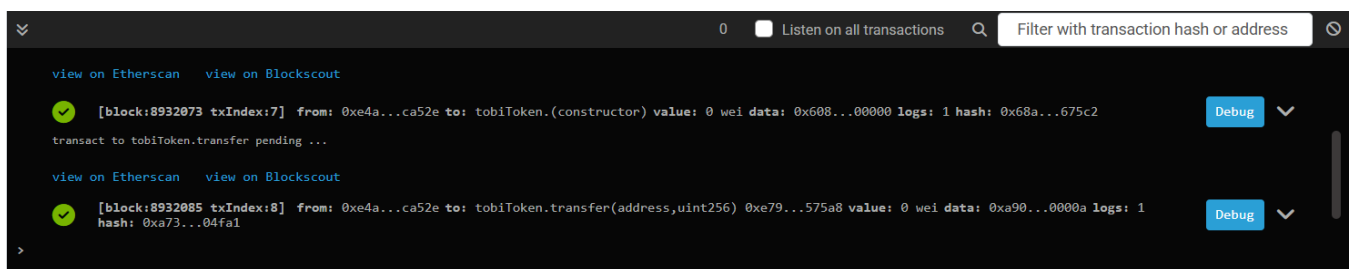
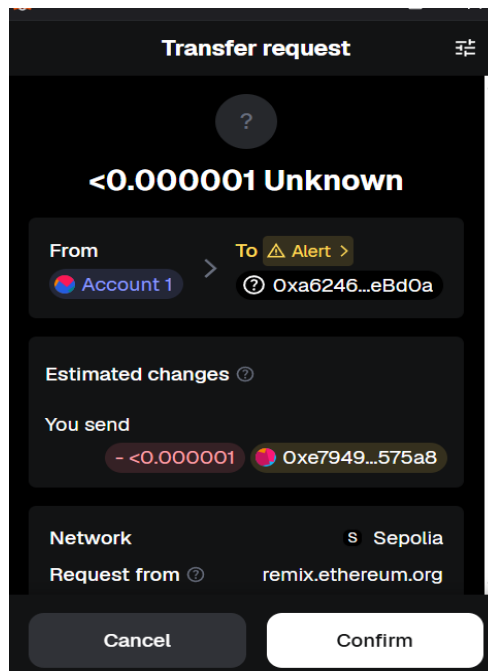
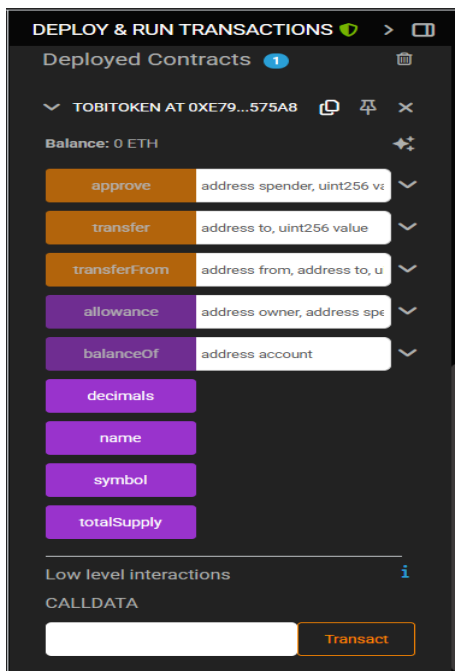
Transaction Hash	Method	Block	Age	From	To	Amount
0x98309496ffc...	0x60806040	8930755	3 hrs ago	0x00000000...000000000	0xe4aD95Dd...68E8Ca52E	1,000,000

Add Token to MetaMask.Open MetaMask → Click on "Import Tokens".Paste the contract address.MetaMask will auto-fill token symbol and decimals.Click "Add Custom Token" → "Import Tokens".You will now see your token balance (1,000,000 TOB) in MetaMask.

* Testing Phase: Compilation of Code (error detection)

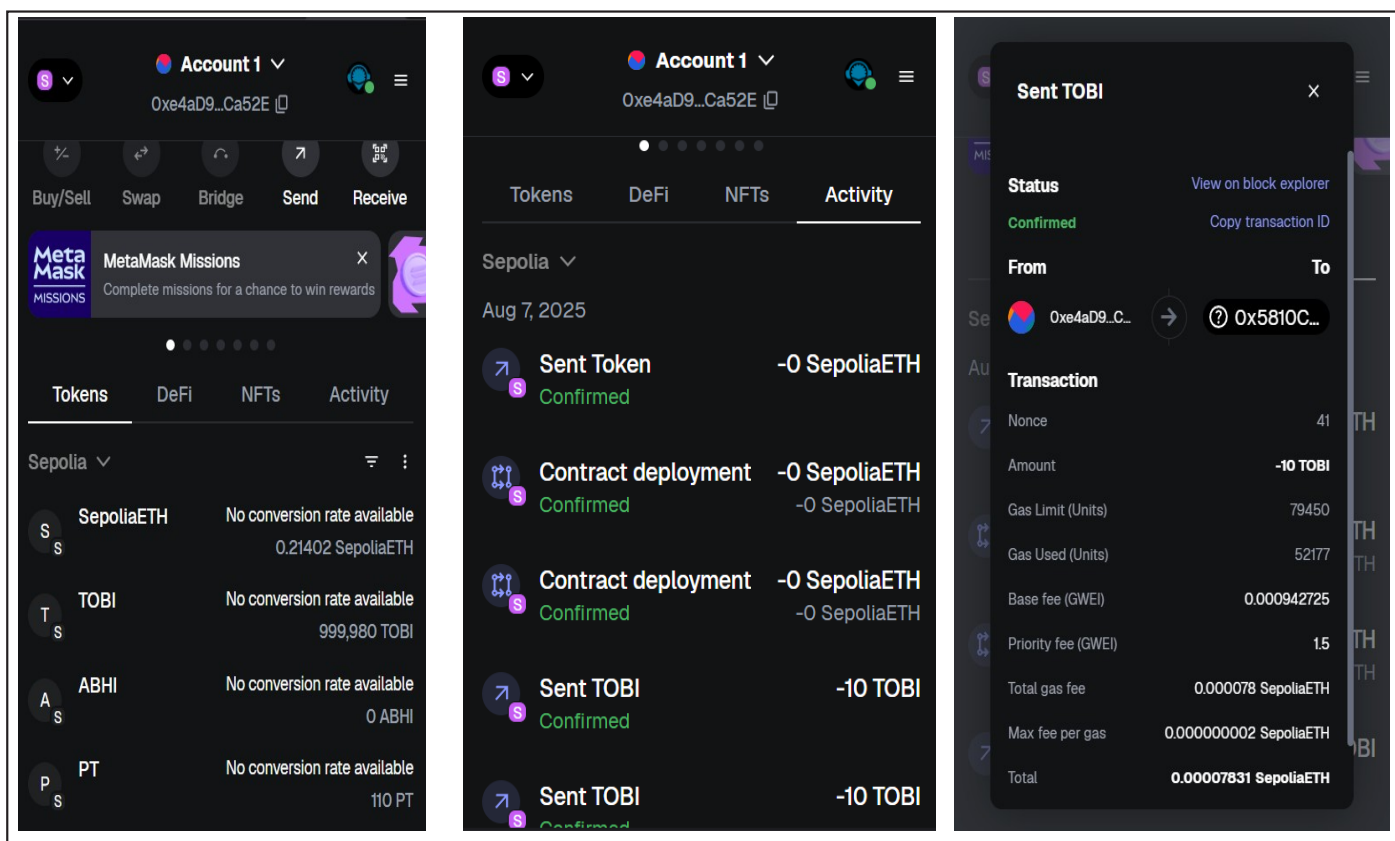


Transfer Tokens to Another Wallet ,In Remix, expand your deployed contract in "Deployed Contracts".Find the transfer function.



* Implementation Phase: Final Output (no error)

Applied and Action Learning



* Observations

- 1.The ERC-20 token contract was successfully compiled and deployed using Remix and MetaMask.
- 2.The token appeared in MetaMask after importing the contract address, confirming successful minting.
- 3.Token transfer to another wallet was executed and verified on Etherscan, confirming proper contract functionality.

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:

Page No.....

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