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Semester: ..... Program: ..... Branch: ..... Specialization: .....

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Applied and Action Learning

(Learning by Doing and Discovery)

Name of the Experiement : Token Launch – Deploying a Token Locally

Objective/Aim:

To understand and simulate the creation of a custom cryptocurrency by writing and deploying an **ERC-20 token** smart contract on the Ethereum blockchain using **Remix IDE** and MetaMask.

Apparatus/Software Used:

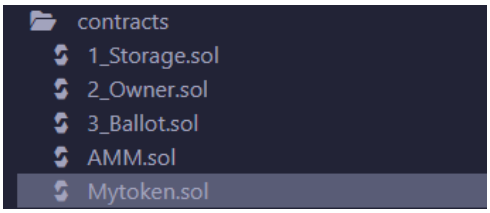
- Remix IDE: https://remix.ethereum.org
- MetaMask Wallet (connected to local Ganache or Sepolia Testnet)
- Test ETH (via faucet if using a public testnet)
- OpenZeppelin ERC-20 Smart Contract (standard template)
- Web Browser

Theory/Concept:

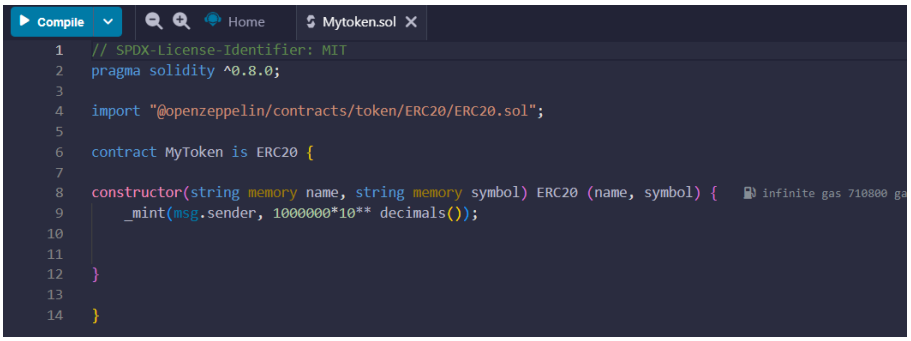
- ERC-20 is the most common Ethereum token standard. It defines a set of functions like balance Of, transfer, and approve, allowing tokens to behave like digital assets.
- Remix IDE is an online Solidity IDE that supports writing, compiling, and deploying smart contrcts with MetaMask integration.

Procedure:

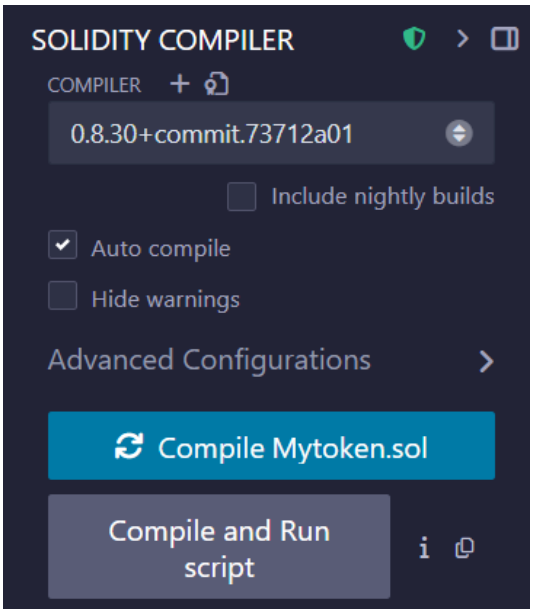
1. Setup:
   - Open https://remix.ethereum.org.
   - Create a new file:
     MyToken.sol



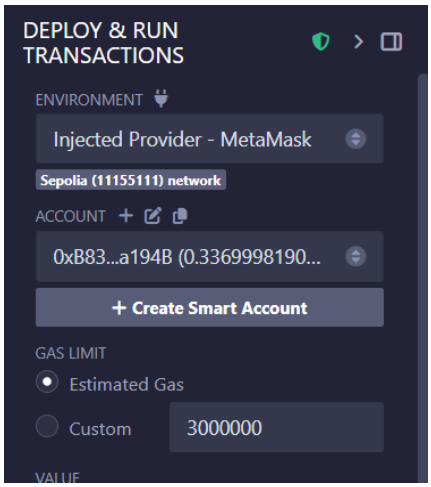
2. Write ERC-20 Token Contract:

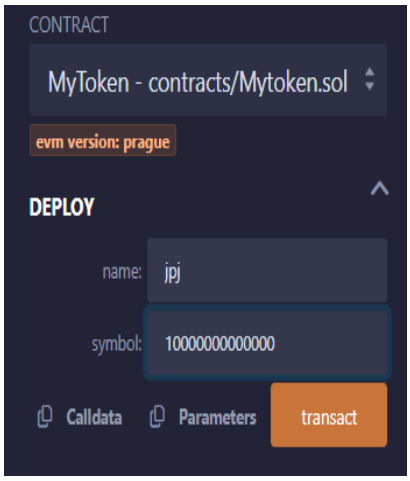


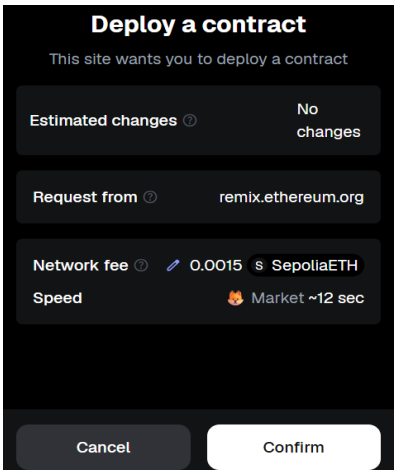
3. Compile the Contract:
   - Go to the Solidity Compiler tab
   - Select the correct compiler version (e.g., 0.8.20)
   - Click Compile MyToken.sol



4. Deploy the Contract:
   - Go to the Deploy & Run Transactions tab
   - Select Injected Provider - MetaMask
   - Make sure MetaMask is connected to Sepolia
   - In the constructor input, enter an initial supply (e.g., 1000)
   - Click Deploy and confirm the transaction in MetaMask

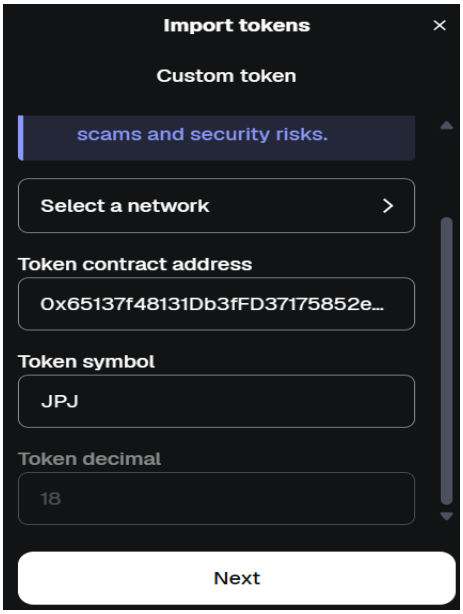


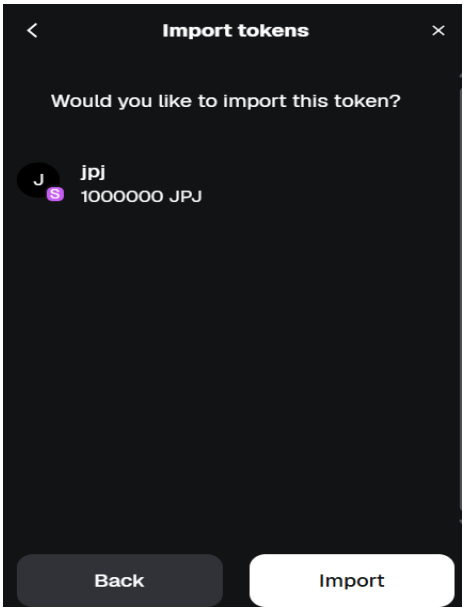




5. Test Token Functions:
   Once deployed:

   - Go to “import token” and paste the deployed address in “Token contract address”
   - Then import the token
   - Call totalSupply() to see total token supply.
   - Call balanceOf("your wallet address") to check your token balance.
   - Use transfer("address", amount) to send tokens to another address.





Observation Table:

Action	Result/Output
Contract Deployed	New token contract address generated
Initial Supply	Minted to the deployer's MetaMask wallet
balanceOf()	Shows token balance of the address
transfer()	Successfully transferred tokens

- ❖ The token contract worked as expected and followed the ERC-20 standard.
- ❖ The wallet showed updated balances for token holders.
- ❖ The transaction appeared in Sepolia/Ganache block explorer.

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: