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

Date: .....

## Applied and Action Learning

(Learning by Doing and Discovery)

**Name of the Experiment : Token Launch – Deploying a Token Locally**

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

- Open Remix IDE.
- Import the ERC20 contract from OpenZeppelin.
- Create a constructor that sets the token name, symbol, and mints initial supply.
- Compile the contract with Solidity ^0.8.20.
- Deploy to local blockchain using account 1.
- Use functions `name()`, `symbol()`, and `totalSupply()` to verify token.

**Apparatus/Software Used:**

- OS: Windows or others.
- Remix IDE.
- Wallet: MetaMask.
- Library: OpenZeppelin ERC20

**Testing Phase:**

- Call `name()` → returns **"HatiSwornaTokens"**
- Call `symbol()` → returns **"HST"**
- Call `totalSupply()` → returns **100000000**
- Call `balanceOf(owner)` → shows total supply in deployer's account.

## Implementation Phase: Final Output (no error)

Step 1: Open Remix IDE.

- Open Browser/Brave.
- Search Remix IDE.

Step 2: Write Smart Contract.

- Create a new file in inside of contract using .sol.
- Write code:

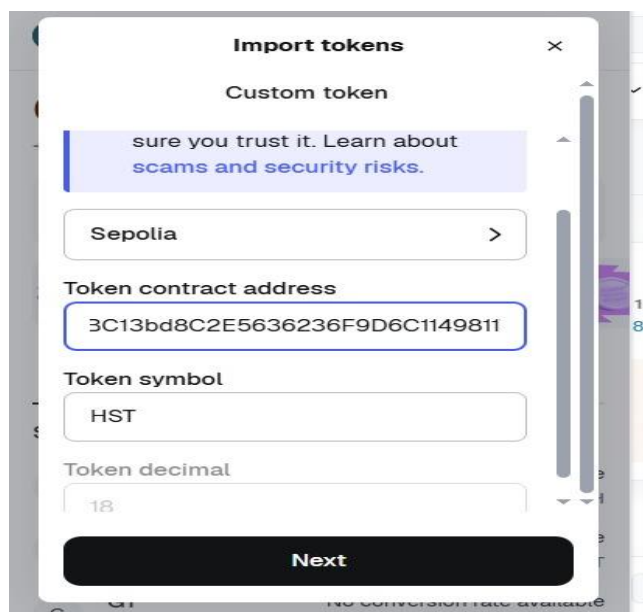
```
1 // SPDX-License-Identifier: MIT
2
3
4 pragma solidity ^0.8.0;
5
6 import "@openzeppelin/contracts/token/ERC20/ERC20.sol";
7
8 contract MyToken is ERC20 {
9
10     constructor(string memory name,string memory symbol) infinite gas 710800 gas
11     ERC20(name,symbol){
12         _mint(msg.sender,1000000 * 10 ** decimals());
13     }
14 }
```

Step 3: Code Compile and Deploy .

- Click the Solidity compiler and compile this file.
- Click Deploy & run transaction Option .
- Deploy the write of some string name and symbol.

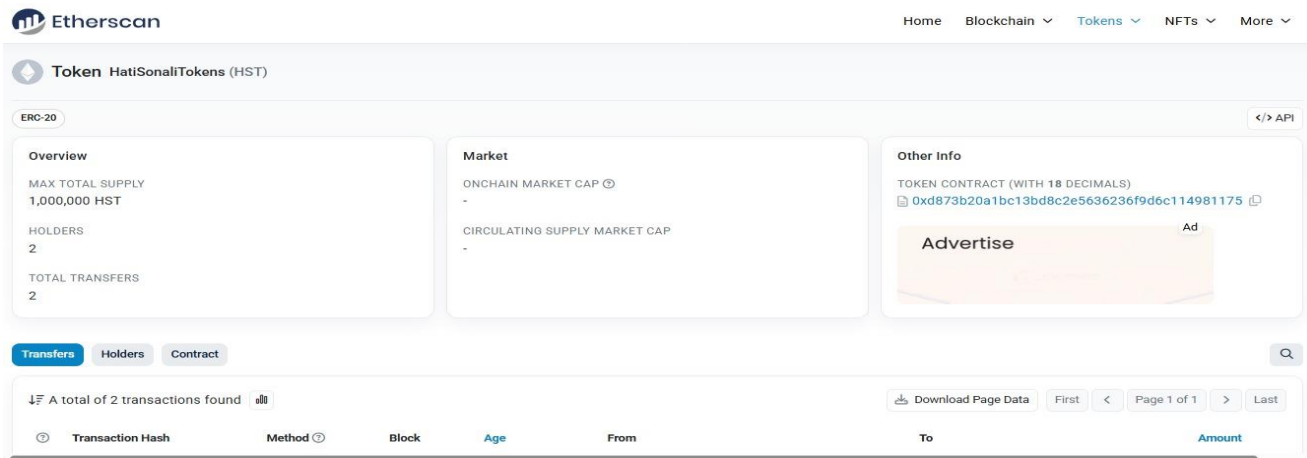
Step 4: Add Token to MetaMask.

- In MetaMask, click "**Import Tokens**".
- Enter your deployed contract address.
- Your token should appear in the wallet.



## Step 5: Check Token Details.

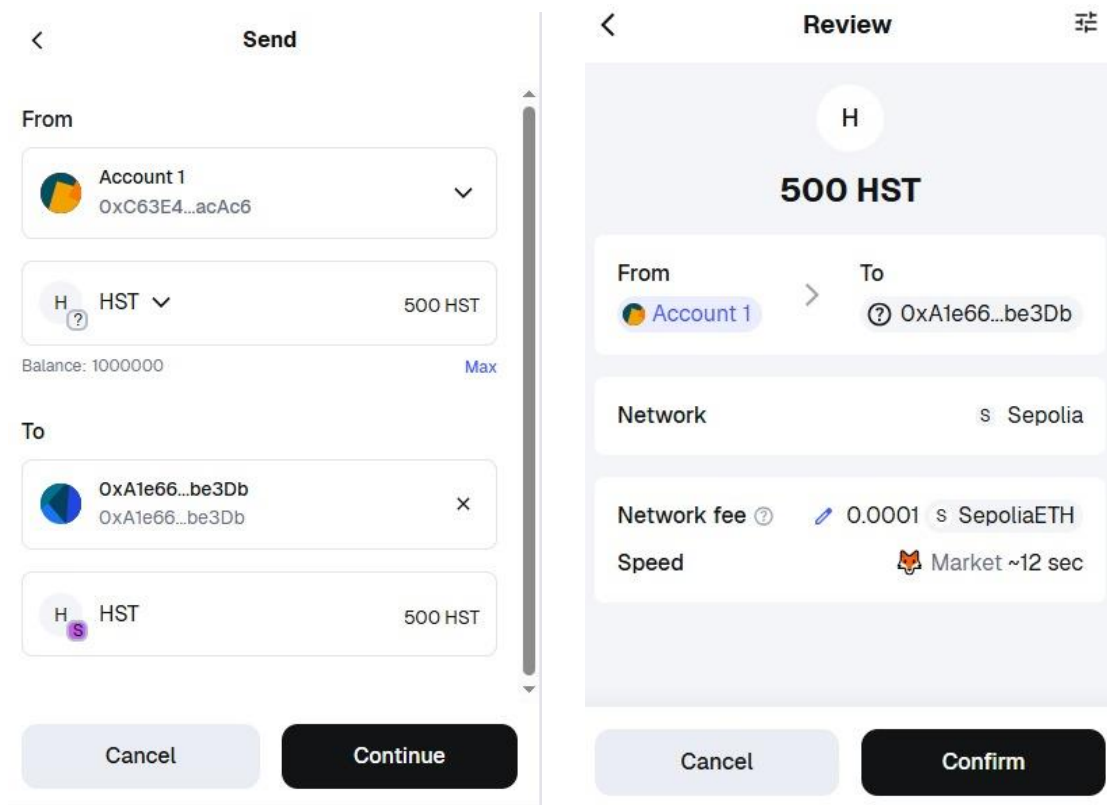
- `name()` → should return "HatiSwornaTokens"
- `symbol()` → should return "HST"
- `totalSupply()` → should return 10000000.



The screenshot shows the Etherscan interface for the token 'HatiSonalitokens (HST)'. The page is divided into several sections: Overview, Market, and Other Info. The Overview section shows the token's name, symbol, and total supply. The Market section shows the onchain market cap and circulating supply market cap. The Other Info section shows the token contract address and a link to the contract. Below these sections, there are tabs for Transfers, Holders, and Contract. The Transfers tab is selected, showing a list of transactions. The table has columns for Transaction Hash, Method, Block, Age, From, To, and Amount. The first transaction is visible, showing a transfer of 500 HST from Account 1 to another account.

## Step 6: Transfer Token:

- Use `transfer(receiver_address, amount)` to send tokens to another account.
- Then check balance Of (receiver\_address) to confirm transfer.



The screenshot shows two screens from a mobile application. The left screen is titled 'Send' and the right screen is titled 'Review'. Both screens show the token 'HST' and the amount '500 HST'. The 'Send' screen shows the 'From' account as 'Account 1' and the 'To' account as '0xA1e66...be3Db'. The 'Review' screen shows the same information, along with the network 'Sepolia', the network fee '0.0001 s SepoliaETH', and the speed 'Market ~12 sec'. Both screens have 'Cancel' and 'Continue' (or 'Confirm') buttons at the bottom.

## Observations

- The OpenZeppelin library makes ERC20 token creation quick and secure.
- Local deployment requires no real ETH.
- Token functions behave exactly the same as on testnet/mainnet.

### 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		
<b>Total</b>	<b>50</b>		

**Signature of the Student:**

Name :

Regn. No. :

Page No.....

**Signature of the Faculty:**

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

