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 Experiement : ERC-20 Basics – Tokenization Concepts

* Coding Phase: Pseudo Code / Flow Chart / Algorithm

ALGORITHM:

- **Start** the process by selecting the Ethereum blockchain network as the base platform for token creation.
- **Define token parameters** such as token name, symbol, total supply, and decimal units.
- **Write a smart contract** using the ERC-20 standard functions like totalSupply, balanceOf, transfer, approve, and allowance.
- **Compile and deploy** the smart contract on the Ethereum test network (e.g., using Remix IDE or MetaMask).
- **Verify deployment** by checking the contract address and token details on the blockchain explorer.
- **Test transactions** such as transferring tokens between accounts to confirm proper functionality.
- **End** the process after successful token verification and validation of all ERC-20 functions.

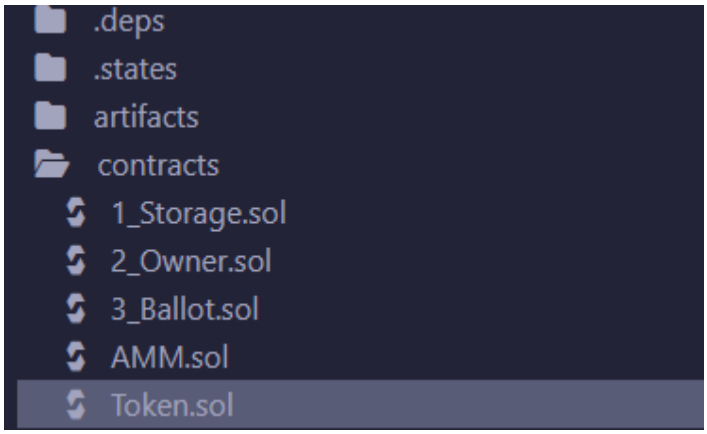
* Software used

1. Remix IDE
2. Metamask wallet

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

* Testing Phase: Compilation of Code (error detection)

Creating a file

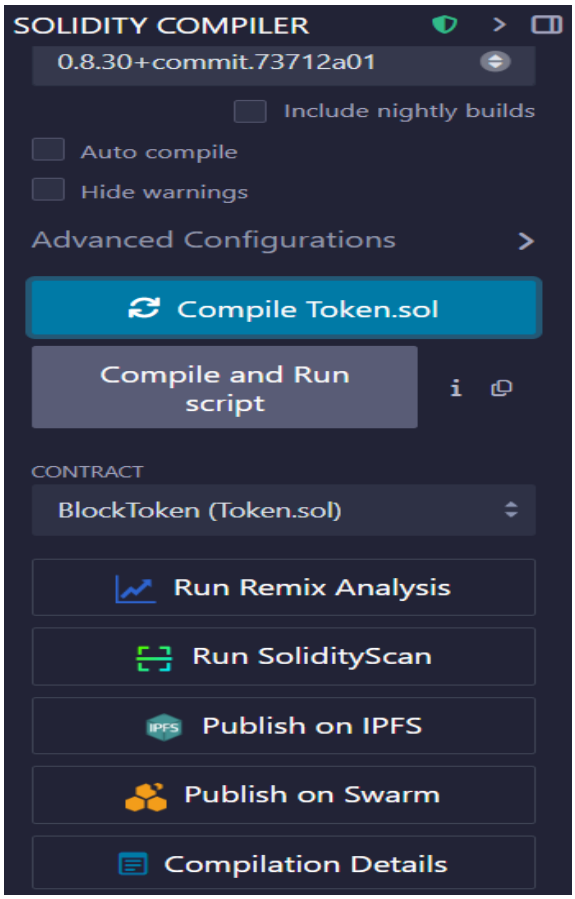


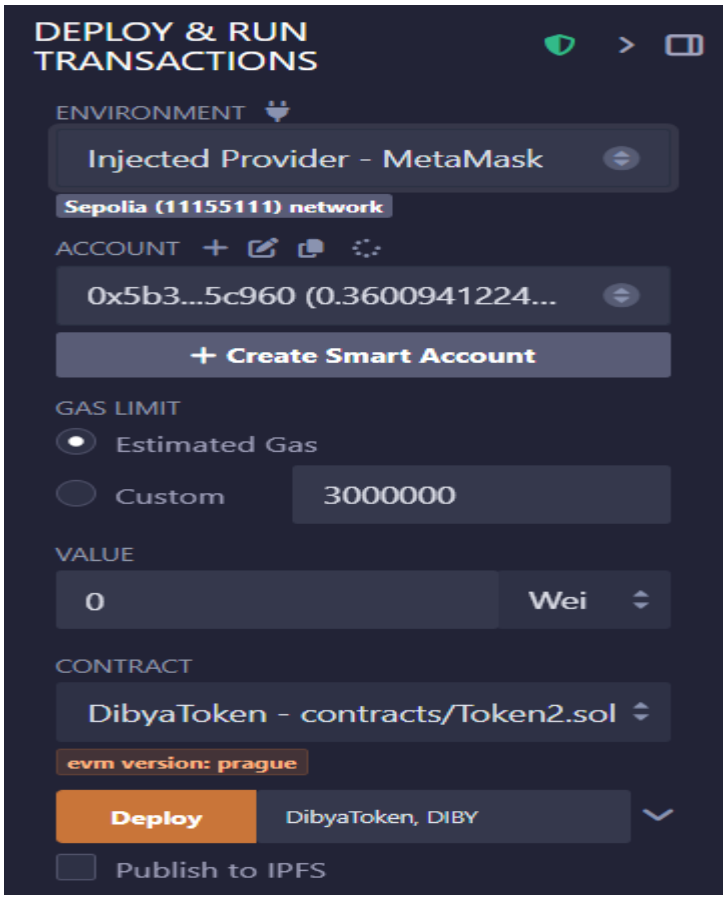
Write the solidity code

```
//SPDX-License-Identifier: MIT
pragma solidity ^0.8.20;

import "@openzeppelin/contracts/token/ERC20/ERC20.sol";
contract DibyaToken is ERC20 {
    constructor(string memory name, string memory symbol) ERC20(name, symbol){    infinite gas 710800 gas
        _mint(msg.sender, 1000000 * 10 ** decimals());
    }
}
```

Compiling the file and deploy it.





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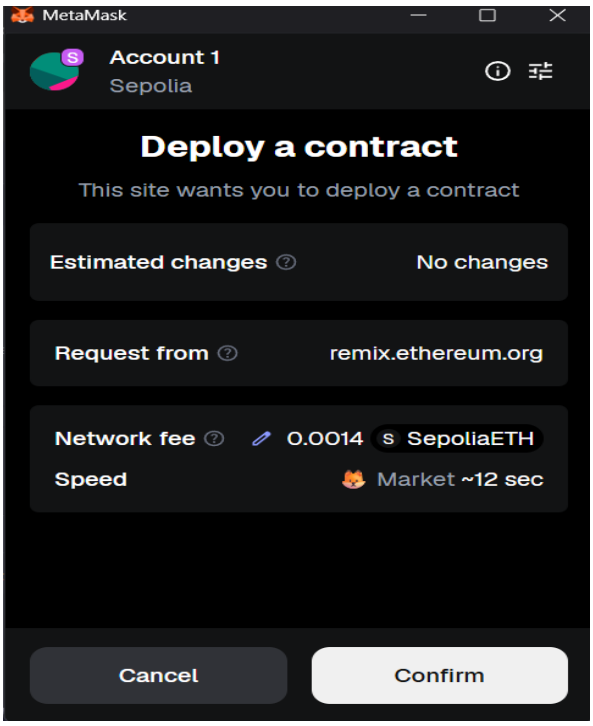
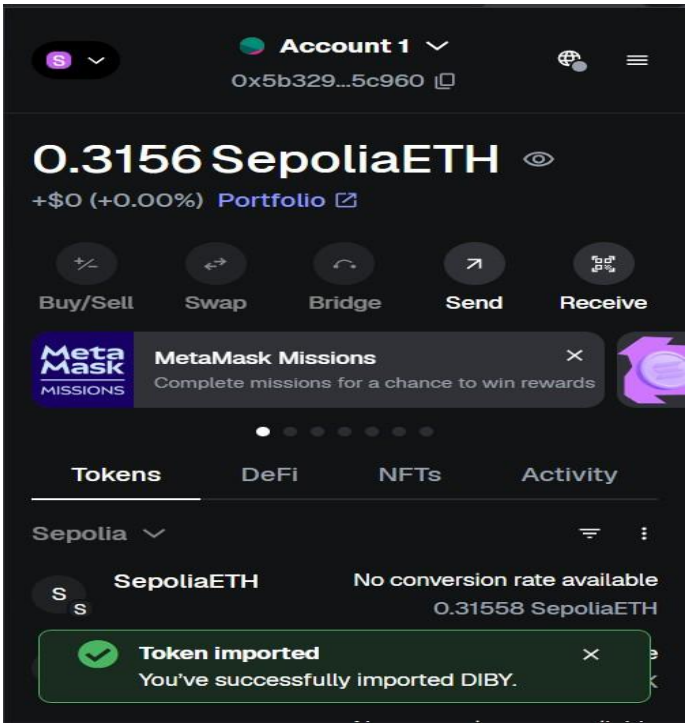
* Implementation Phase: Final Output (no error)

Deploy the contract and Import the tokens





* Observations

•The ERC-20 smart contract was successfully created and deployed on the Ethereum test network.
•Token parameters such as name, symbol, and total supply were correctly defined and initialized.
•The deployed contract generated a unique token address visible on the blockchain 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:

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Two sheets per experiment (10-20) to be used.