	School: .... Campus: ....
	Academic Year: .... Subject Name: .... Subject Code: ....
Centurion UNIVERSITY Shaping Lives... Empowering Communities...	Semester: .... Program: .... Branch: .... Specialization: ....
	Date: ....

Applied and Action Learning
(Learning by Doing and Discovery)

Name of the Experiement : Contract QA – Testing Smart Contracts

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

ALGORITHM:

- **Start** by selecting the smart contract to be tested and identify its key functions and expected behaviors.
- **Set up the testing environment** using a framework such as **Truffle**, **Hardhat**, or **Remix IDE** connected to a local blockchain like **Ganache**.
- **Write test cases** for each function, including positive scenarios (expected behavior) and negative scenarios (error handling).
- **Execute the tests** using the framework's testing tools and record the output for each function.
- **Verify results** by comparing actual outputs with expected results to detect errors or inconsistencies.
- **Debug and fix issues** in the smart contract if any test fails, and re-run the tests to ensure proper functionality.
- **End** the process after all test cases pass successfully, confirming that the smart contract behaves as intended.

* Software used

1. Brave Browser
2. Remix IDE
3.Etherscan

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

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

First create a new file and name it as SimpleStorage.sol
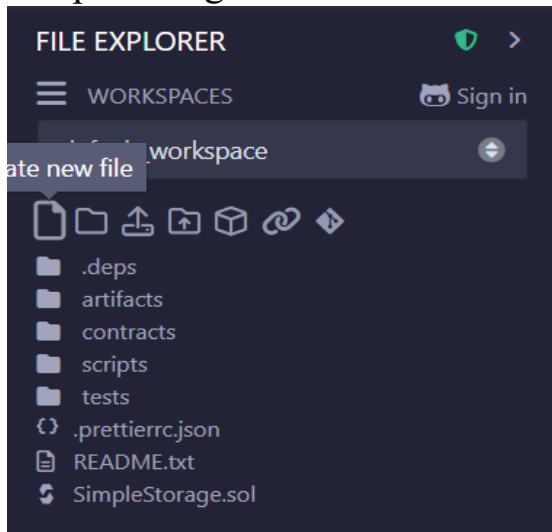

```solidity
//SPDX-License-Identifier: MIT
pragma solidity ^0.8.0;
contract SimpleStorage {
    uint public storedData;

    constructor(uint _data) {
        storedData = _data;
    }
    function set(uint x) public {
        storedData = x;
    }
    function get() public view returns (uint) {
        return storedData;
    }
}
```
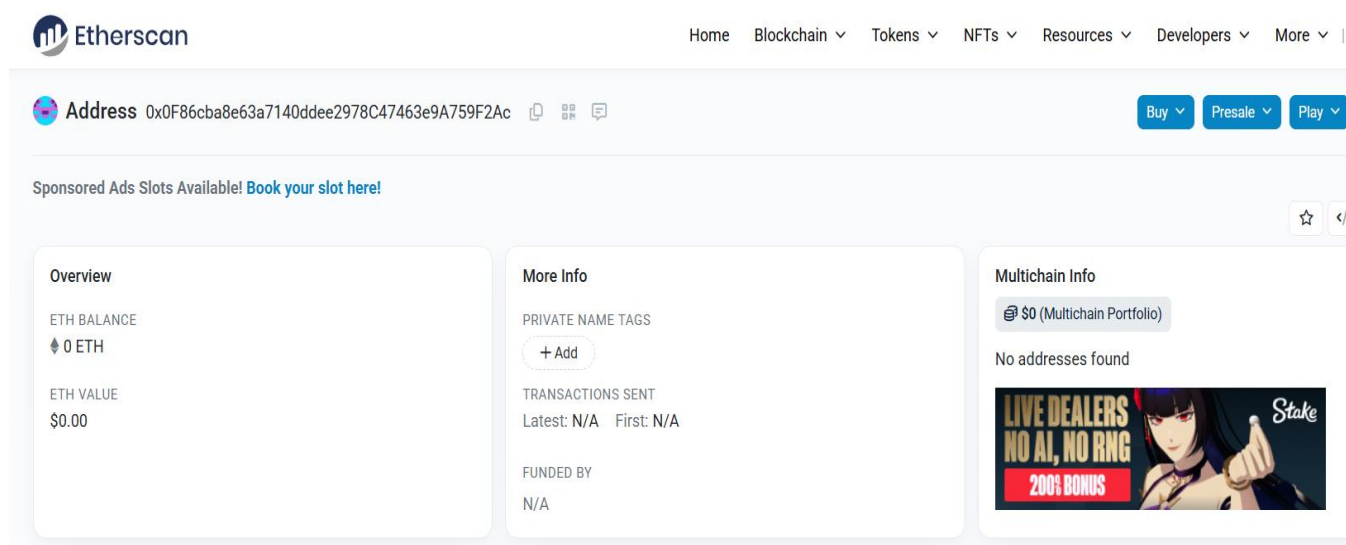
Compile the file
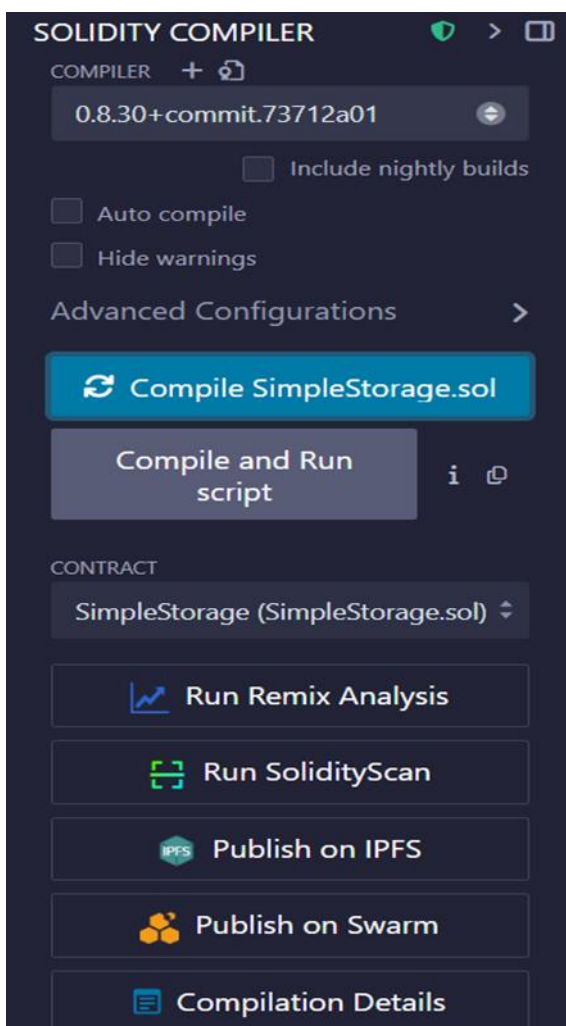
Now deploy the file and coopy the address from deployed contracts
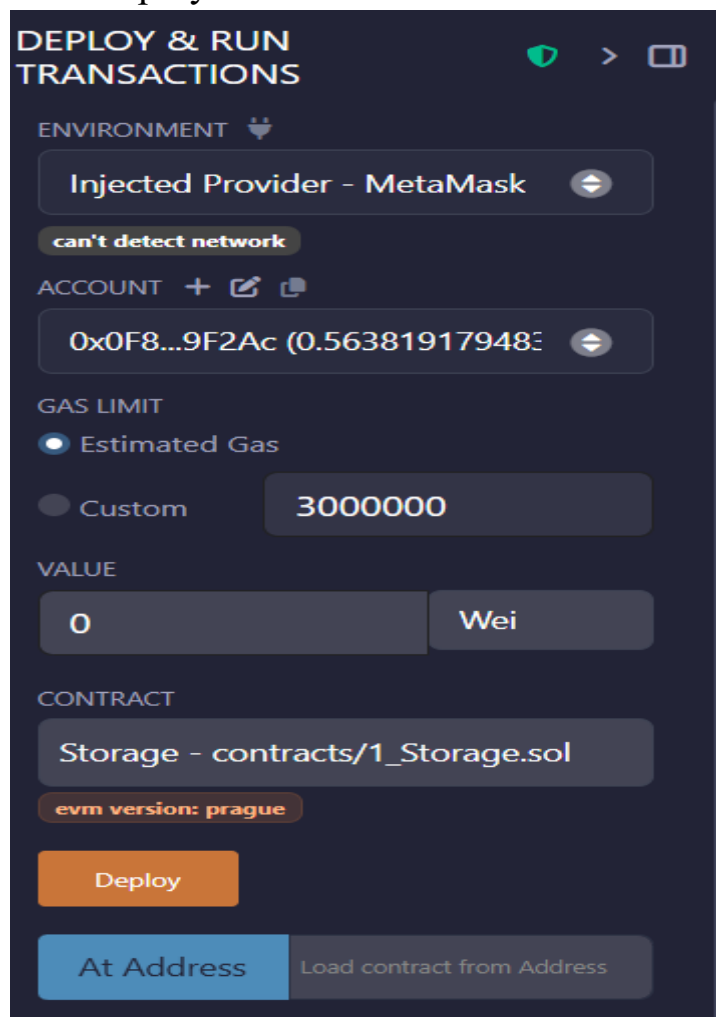
* Implementation Phase: Final Output (no error)   Applied and Action Learning

Now search for ethaerscan in browser and paste the copied address, you will get your whole transaction history done usimg your metamask or any other wallet.

* Observations

•All smart contract functions were successfully tested in the local blockchain environment.
•Positive test cases produced expected outputs, confirming correct functionality.
•Negative test cases correctly handled errors and reverted invalid transactions.
•Any initial bugs were identified and fixed, ensuring reliable smart contract behavior.

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:

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