

TransPepeToken

SecurityAudit

May26,2023

V1.0.0

Audited by Mayank

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<i>Introduction</i>	3
<i>AdditionalInfoabout AuditedProject</i>	4
<i>SourceCode</i>	5
<i>Methodology</i>	6
<i>IssuesDescriptionsandRecommendations</i>	7
<i>Report</i>	8
<i>Functions(Read&Write)</i>	12
<i>Disclaimer</i>	13

This document includes the results of the security audit for smart contract (0x3862B022f0Db84C11AA2c0dF9F587F2cEB8Dfc2e0nBSCchain provided by john)

code as found in the section titled 'Source Code'.

Mayank's security team performed this security audit from May 25, 2023, to May 26, 2023. The purpose of this audit is to review the source code of specific Solidity contracts and provide feedback on the design, architecture, and quality of the source code with an emphasis on validating the correctness and security of the software in its entirety.

Disclaimer:

While [Mayank's](#) team review is comprehensive and has surfaced some changes that should be made to the source code, this audit should not solely be relied upon for security, as no single audit is guaranteed to catch all possible bugs.

Overall Assessment

We identified some low to high-severity issues.

Specification

Our understanding of the specification was based on the following sources:

- Discussion on with [rimonZain](#)
- The Source code found on the block chain explorer.

Additional Info about Audited Project

Contract Name-

TransPepeContractType-

ERC20ContractAdd.-

0x3862B022f0Db84C11AA2c0dF9F587F2cEB8Dfc2eBlockchainexplorerlink-[link](#)

CompilerVersion-v0.8.2License

- notavailableDecimal-

18TotalSupply-

1,000,000,000,000,000

Contractcreatedby-[0x4C086e4B8fAA58aE17FCe3fca19e88Ca51051dAd](#)

SourceCode

thefollowingsourcecodewasreviewedduringtheaudit:

Link:-[SourceCode](#)

Note: This document contains an audit solely of the Solidity contracts listed above. Specifically, the audit pertains only to the contracts themselves and does not pertain to any other programs or scripts, including deployment scripts and libraries.

Libraries used in Contract

none

Methodology

The audit was conducted in several steps.

First, we reviewed in detail all available documentation and specifications for the project, as described in the 'Specification' section above.

Second, we performed a thorough manual review of the code, checking that the code matched the specification and the spirit of the contract (i.e. the intended behavior). During this manual review portion of the audit, we primarily searched for security vulnerabilities, unwanted behavior vulnerabilities, and problems with systems of incentives.

Third, we performed the automated portion of the review consisting of measuring test coverage (while also assessing the quality of the test suite) and valuating the results of various symbolic execution tools against the code.

Lastly, we performed a final line-by-line inspection of the code – including comments – in an effort to find any minor issues with code quality, documentation, or best practices.

Issues Descriptions and Recommendations

Severity Level Reference:

Level	Description
High	The issue poses an existential risk to the project, and the issue identified could lead to massive financial or reputational repercussions. We highly recommend fixing the reported issue. If you have already deployed, you should upgrade or redeploy your contracts.
Medium	The potential risk is large, but there is some ambiguity surrounding whether or not the issue would practically manifest. We recommend considering a fix for the reported issue.
Low	The risk is small, unlikely, or not relevant to the project in a meaningful way. Whether or not the project wants to develop a fix is up to the goals and needs of the project.
Code Quality	The issue identified does not pose any obvious risk, but fixing it would improve overall code quality, conform to possible best practices, and perhaps lead to fewer development issues in the future.
Gas Optimizations	The presented optimizations suggestion would save an amount of gas significant enough, in our opinion, to be worth the development cost of implementing it.

Based on these Levels we have found some particular issues in the smart contract after we have found after checking all parameters and given information by [iyenitemi897](#)

Report on Smart Contract for TransPepe

Upon reviewing the provided Solidity code, I have identified three potential vulnerabilities related to the `approve()` function in the Token contract.

Here's issue 1:

In the `approve()` function, the allowance mapping is directly updated without considering the existing allowance value.

```
allowance[msg.sender][spender] = value;
```

This means that each time the `approve()` function is called, it sets the allowance value to the new value specified. However, it does not consider or update the previous allowance value, which can lead to unexpected behavior.

This vulnerability can be exploited in the following way:

1. Assume there are two parties, A and B.
2. Party A has tokens and approves Party B to spend a certain amount of tokens.
3. Before Party B utilizes the approved allowance, Party A decides to call the `approve()` function again with a different value, possibly reducing the allowance.
4. As a result, Party B still has the previously approved allowance but cannot now spend more tokens than intended by Party A.

To mitigate this vulnerability, you can modify the `approve()` function to handle the allowance updates properly, taking into account the existing allowance value. One common approach is to use the `SafeMath` library to prevent overflows/underflows when updating the allowance.

PossibleSolution:

Here's an example of how you can modify the `approve()` function to address the vulnerability using `SafeMath`:

```
import "@openzeppelin/contracts/utils/math/SafeMath.sol";

contract Token {
    using SafeMath for uint256;

    // ... Contract code ...

    function approve(address spender, uint256 value) public returns (bool) {
        require(spender != address(0));

        allowance[msg.sender][spender] = allowance[msg.sender][spender].add(value);
        emit Approval(msg.sender, spender, allowance[msg.sender][spender]);

        return true;
    }
}
```

By utilizing `SafeMath`'s `sadd()` function, the updated allowance value is correctly calculated, considering the existing allowance.

Here's issue2:

Upon further review, I have identified another potential vulnerability in the provided Solidity code:

In the `transferFrom()` function, there is no check to ensure that the spender has sufficient allowance to transfer the specified value from the "from" address.

```
allowance[from][msg.sender] -= value;
balances[to] += value;
balances[from] -= value;
emit Transfer(from, to, value);
```

This means that anyone can call the `transferFrom()` function and transfer tokens from one address to another, even if they do not have the necessary allowance. This can lead to unauthorized token transfers.

To address this vulnerability, you should add a check to verify that the spender has sufficient allowance before executing the transfer. You can do this by comparing the allowance with the value being transferred.

Here's an example of how you can modify the `transferFrom()` function to include the allowance check:

Possible Solution:

```
function transferFrom(address from, address to, uint value) public returns(bool) {
    require(to != address(0));
    require(allowance[from][msg.sender] >= value); // Check if spender has sufficient allowance

    allowance[from][msg.sender] -= value;
    balances[to] += value;
    balances[from] -= value;
    emit Transfer(from, to, value);
    return true;
}
```

By adding the `require(allowance[from][msg.sender] >= value)` statement, the function ensures that the spender has enough allowance to transfer the specified value from the "from" address. This helps prevent unauthorized transfers.

Here's issue 3:

1. The `balanceOf()` function does not specify the view modifier.

```
function balanceOf(address owner) public returns (uint) {
    return balances[owner];
}
```

Since the function only retrieves the balance of an address without modifying any state variables, it is best practice to add the view modifier to explicitly indicate that the function does not modify the contract's state.

PossibleSolution:

To address this, you can modify the `balanceOf()` function as follows:

```
function balanceOf(address owner) public view returns (uint) {  
    return balances[owner];  
}
```

By adding the `view` modifier, the function explicitly states that it only reads from the contract's state and does not modify it. This helps improve code clarity and prevents any accidental modifications to the state when interacting with the function.

It is important to note that this vulnerability does not pose a security risk but is more of a best practice for code readability and maintenance.

Note - We have only checked and audited the contract (0x3862B022f0Db84C11AA2c0dF9F587F2cEB8Dfc2e).

Audited by Mayank

AllFunctionsofSmartContract

READFunctions

1. *BalanceOf*-showsthetokenbalanceofthewallet
2. *Allowance*-checkallowanceofaparticularwallet
3. *Decimals*-showsthedecimalquantityoftoken
4. *Name*-Nameofcontract
5. *Symbol*-Symbolofcontract
6. *TotalSupply*-showsthetotalquantityoftokens

WriteFunctions

1. *Transfer/TransferFrom*-fortransferringtoken
 2. *Approve*-forapprovingtokenfortransfer/trading.
 3. *Balanceof*-checkbalanceofwalletaddress
-
-

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