DUDES

SMART CONTRACT AUDIT REPORT

Prepared by:

BlockAudit

Date Of Enrollment:

May 10th, 2023 - May 15th, 2023

Visit : www.blockaudit.report

TABLE OF CONTENTS

SUMMARY

This Audit Report mainly focuses on the extensive security of **Dudes** Smart Contracts. With this report, we attempt to ensure the reliability and correctness of the smart contract by complete and rigorous assessment of the system's architecture and the smart contract codebase.

The auditing process pays special attention to the following considerations:

- Testing the smart contracts against both common and uncommon attack vectors.
- Assessing the codebase to ensure compliance with current best practices and industry standards.
- Ensuring contract logic meets the specifications and intentions of the client.
- Cross referencing contract structure and implementation against similar smart contracts producedby industry leaders.
- Thorough line-by-line manual review of the entire codebase by industry experts.

The security assessment resulted in findings that ranged from critical to informational. We recommend addressing these findings to ensure a high level of security standards and industry practices. We suggest recommendations that could better serve the project from the security perspective:

- Enhance general coding practices for better structures of source codes;
- Add enough unit tests to cover the possible use cases;
- Provide more comments per each function for readability, especially contracts that are verified inpublic;
- Provide more transparency on privileged activities once the protocol is live.

OVERVIEW

Project Summary

Project Name	Dudes
Logo	
Platform	ETH
Language	Solidity
Code Link	https://etherscan.io/token/0x971aaBCf9E922e1003969A7662a43765D4527b82

File Summary

ID	File Name	Audit Status
DUDE	DUDE-DudesToken.sol	Pass

Audit Summary

Date of Delivery	15 May 2023
Audit Methodology	Code Analysis. Automatic Assesment, Manual Review
Audit Result	**Passed** ✓✓
Audit Team	BlockAudit Report Team

FINDINGS

Critical	0	0.0%
High	0	0.0%
Medium	2	50.0%
Low	1	25.0%
Informational	1	25.0%
Ownership	0	0.0%
Gas Optimization	0	0.0%

Vulnerability Findings Summary

ID	Type	Line	Severity	Status
DUDE01	Incorrect Access Control	630	Medium	Acknowledged
DUDE02	Approve front-running attack	353-356	Medium	Acknowledged
DUDE03	Missing Events For Critical Parameters	603 / 609-610	Low	Acknowledged
DUDE03	Floating Pragma / Outdated Compiler Version	588	Informational	Acknowledged

DUDE01

Type	incorrect access control
Severity	Medium
File	DudesToken.sol
Line	630
Status	**Acknowledged**

Description

an attacker could purchase any token and then call the burn function to burn all the tokens on UniSwap, creating inflation and hence increasing the worth of the token and then swapping it for ETH till the pool is exhausted.

Remediation

This could have been prevented if the function had access control implemented like onlyOwner or if the function was internal with correct access control logic.

Snapshot

```
function burn(uint256 value) external {
    _burn(_msgSender(), value);
}
```

DUDE02

Type	Approve front-running attack
Severity	Medium
File	DudesToken.sol
Line	353-356
Status	**Acknowledged**

Description

The implementation of this approve() function is prone to front-running attacks. First, understand what is the front-running attack. An attacker who initiates a transaction that is to be executed before a specific pending transaction could benefit an attacker.

- Alice gives an allowance of 100 tokens to Bob.
- Later, Alice rethinks her choice, changing it to 50. When this happens, Bob watches the chain and transfers his 100 tokens immediately with a higher gas price.

As a result, Bob gains 150 tokens overall instead of 50.

Remediation

Only use the approve function of the ERC/BEP standard to change the allowed amount to 0 or from 0 (wait till the transaction is mined and approved).

The token owner just needs to make sure that the first transaction actually changed allowance from N to 0, Such checking is possible using etherscan.io.
Another way to mitigate the threat is to approve token transfers to smart contracts with verified source code that does not contain logic for performing attacks like described above.

Snapshot

```
function approve(address spender, uint256 amount) public virtual override returns (bool) {
    _approve(_msgSender(), spender, amount);
    return true;
}
```

DUDE03

Type	Missing events for critical parameters
Severity	Low
File	DudesToken.sol
Line	603 / 609-610
Status	**Acknowledged**

Description

blacklist(address, bool) and setRule(bool, address, uint256, uint256) do not emit an event, so keeping track of those critical parameters is hard.

Remediation

Emit an event for critical parameter changes.

Snapshot

```
function blacklist(address _address, bool _isBlacklisting) external onlyOwner {
    blacklists[_address] = _isBlacklisting;
}
```

```
function setRule(bool _limited, address _uniswapV2Pair, uint256 _maxHoldingAmount, uint256 _minHoldingAmount) external onlyOwner {
    limited = _limited;
    uniswapV2Pair = _uniswapV2Pair;
    maxHoldingAmount = _maxHoldingAmount;
    minHoldingAmount = _minHoldingAmount;
}
```

DUDE04

Type	Floating Pragma / outdated compiler version
Severity	Informational
File	DudesToken.sol
Line	588
Status	**Acknowledged**

Description

The preceding code signifies that the code should be compiled with any Solidity version starting from 0.8.0 to 0.8.x because the version starts with a ^ (caret sign). Also using an outdated compiler version can be problematic especially if there are publicly disclosed bugs and issues that affect the current compiler version.

Remediation

It is always recommended that pragma should be fixed to the version that you are intending to deploy your contracts with. It is also recommended to use a recent version of the Solidity compiler.

Snapshot

```
pragma solidity ^0.8.0;
```

APPENDIX

Auditing Approach and Methodologies applied

The Block Audit Report team has performed rigorous testing of the project including the analysis of the code design patterns where we reviewed the smart contract architecture to ensure it is structured along with the safe use of standard inherited contracts and libraries. Our team also conducted a formal line by line inspection of the Smart Contract i.e., a manual review, to find potential issues including but not limited to

- Race conditions
- Zero race conditions approval attacks
- Re-entrancy
- Transaction-ordering dependence
- Timestamp dependence
- Check-effects-interaction pattern (optimistic accounting)
- Decentralized denial-of-service attacks
- Secure ether transfer pattern
- Guard check pattern
- Fail-safe mode
- Gas-limits and infinite loops
- Call Stack depth

In the Unit testing Phase, we coded/conducted custom unit tests written against each function in the contract to verify the claimed functionality from our client. In Automated Testing, we tested the Smart Contract with our standard set of multifunctional tools to identify vulnerabilities and security flaws. The code was tested in collaboration of our multiple team members and this included but not limited to;

- Testing the functionality of the Smart Contract to determine proper logic has been followed throughout the whole process.
- Analyzing the complexity of the code in depth and in detail line-by-line manual review of the code.
- Deploying the code on testnet using multiple clients to run live tests.
- Analyzing failure preparations to check how the Smart Contract performs in case of any bugs and vulnerabilities.
- Checking whether all the libraries used in the code are on the latest version.
- Analyzing the security of the on-chain data.

Issue Categories:

Every issue in this report was assigned a severity level from the following:

Critical Severity Issues

Issues of Critical Severity leaves smart contracts vulnerable to major exploits and can lead to asset loss and data loss. These can have significant impact on the functionality/performance of the smart contract.
We recommend these issues must be fixed before proceeding to MainNet..

High Severity Issues

Issues of High Severity are not as easy to exploit but they might endanger the execution of the smart contract and potentially create crucial problems.
Fixing these issues is highly recommended before proceeding to MainNet.

Medium Severity Issues

Issues on this level are not a major cause of vulnerability to the smart contract, they cannot lead to data-manipulations or asset loss but may affect funtionality.
It is important to fix these issues before proceeding to MainNet.

Low Severity Issues

Issues at this level are very low in their impact on the overall functionality and execution of the smart contract. These are mostly code-level violations or improper formatting.
These issues can be remain unfixed or can be fixed at a later date if the code is redeployed or forked.

Informational Findings

These are finding that our team comes accross when manually reviewing a smart contract which are important to know for the owners as well as users of a contract.
These issues must be acknowledged by the owners before we publish our report.

Ownership Priviledges

Owner of a smart contract can include certain rights and priviledges while deploying a smart contract that might be hidden deep inside the codebase and may make the project vulnerable to rug-pulls or other types of scams.
We at BlockAudit believe in transparency and hence we showcase Ownership priviledges separately so the owner as well as the investors can get a better understanding about the project.

Gas Optimization

Solidity gas optimization is the process of lowering the cost of operating your Solidity smart code. The term "gas" refers to the level of processing power required to perform specific tasks on the Ethereum network.
Each Ethereum transaction costs a fee since it requires the use of computer resources. It will deduct a fee anytime any function in the smart contract is invoked by the contract's owner or users.

DISCLAIMER

This is a limited report on our findings based on our analysis, in accordance with good industry practice as at the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, the details of which are set out in this report. In order to get a full view of our analysis, it is crucial for the client to read the full report. While we have done our best in conducting our analysis and producing this report, it is important to note that the client should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for the client to conduct the client's own independent investigations before making any decisions. We go into more detail on this in the below disclaimer below – please make sure to read it in full.

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The analysis of the security is purely based on the received smart contracts alone. No related/third-party smart contracts, applications or operations were reviewed for security. No product code has been reviewed.

Note: The statements made in this document should not be interpreted as investment or legal advice, nor should its authors be held accountable for decisions made based on them. Securing smart contracts is a multistep process. One audit cannot be considered enough. We recommend that the **Dudes** team put a bug bounty program in place to encourage further analysis of the smart contracts by other third parties

About BlockAudit

BlockAudit is an industry leading security organisation that helps web3 blockchain based projects with their security and correctness of their smart-contracts. With years of experience we have a dedicated team that is capable of performing audits in a wide variety of languages including HTML, PHP, JS, Node, React, Native, Solidity, Rust and other Web3 frameworks for DApps, DeFi, GameFi and Metaverse platforms.

With a mission to make web3 a safe and secure place BlockAudit is commited to provide it's partners with a budget and investor friendly security Audit Report that will increase the value of their projects significantly.

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