Smart Contract
Security Audit
V1

Honey Ratel Game Token Smart Contract

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Background

The purpose of the audit was to achieve the following:

- Ensure that the smart contract functions as intended.
- Identify potential security issues with the smart contract.

The information in this report should be used to understand the risk exposure of the smart contract, and as a guide to improve the security posture of the smart contract by remediating the issues that were identified.

Project Information

- **Platform**: Binance Smart Chain
- **Contract Address**: 0x11dc3384b42D0238518Fdd5aDB2B21880aF435Ea
- **Code:**

https://testnet.bscscan.com/address/0x11dc3384b42d0238518fdd5adb2b21880af435ea#code

Token Information

- Name: HRGT
- Total Supply: 250,000,000,000
- Holders:
- Total transactions:

Contracts address deployed to test net (BSC)

Honey Ratel Game Token Smart contract on BSC test net to test the write functions by the auditor.

https://testnet.bscscan.com/address/0x11dc3384b42d0238518fdd5adb2b21880af435ea

Executive Summary

According to our assessment, the customer`s solidity smart contract is **Secured**.

Well Secured	
Secured	✓
Poor Secured	
Insecure	

Automated checks are with remix IDE. All issues were performed by the team, which included the analysis of code functionality, manual audit found during automated analysis were manually reviewed and applicable vulnerabilities are presented in the audit overview section. The general overview is presented in the Project Information section and all issues found are located in the audit overview section.

Team found 0 critical, 0 high, 1 medium, 2 low, 0 very low-level issues and 0 note in all solidity files of the contract

The files:

HoneyRatelGameToken.sol

File and Function Level Report

File in Scope:

Contract Name	SHA 256 hash	Contract Address
HoneyRatelGameToken.sol	**4b2675b845f8e01e001d03eecbdc420d608b3e96529c295ed9eea4c2eae28cc1**	0x11dc3384b42D0238518Fdd5aDB2B21880aF435Ea

- Contract: HoneyRatelGameToken
- Inherit: ERC20, Ownable, Pausable, Blacklistable
- Observation: All passed including security check
- Test Report: passed
- Score: passed
- Conclusion: passed

Function	Test Result	Type / Return Type	Score
blacklister	✓	Read / public	**Passed**
paused	✓	Read / public	**Passed**
name	✓	Read / public	**Passed**
owner	✓	Read / public	**Passed**
symbol	✓	Read / public	**Passed**
totalsupply	✓	Read / public	**Passed**
allowance	✓	Read / public	**Passed**
decimals	✓	Read / public	**Passed**
totalSupply	✓	Read / public	**Passed**
isBlacklisted	✓	Read / public	**Passed**
updateBlacklister	✓	Write / public	**Passed**
blacklist	✓	Write / public	**Passed**

unBlacklist	✓	Write / public	**Passed**
transferOwnership	✓	Write / public	**Passed**
withdraw	✓	Write / public	**Passed**
approve	✓	Write / public	**Passed**
decreaseAllowance	✓	Write / public	**Passed**
renounceOwnership	✓	Write / public	**Passed**
increaseAllowance	✓	Write / public	**Passed**
transfer	✓	Write / public	**Passed**
transferFrom	✓	Write / public	**Passed**

Issues Checking Status

No.	Issue Description	Checking Status
1	Compiler warnings.	**Passed**
2	Race conditions and Reentrancy. Cross-function race conditions.	**Passed**
3	Possible delays in data delivery.	**Passed**
4	Oracle calls.	**Passed**
5	Design Logic.	**Passed**
6	Timestamp dependence.	**Passed**
7	Integer Overflow and Underflow.	**Passed**
8	DoS with Revert.	**Passed**
9	DoS with block gas limit.	**Passed with notes**
10	Methods execution permissions.	**Passed**
11	Economy model. If application logic is based on an incorrect economic model, the application would not function correctly and participants would incur financial losses. This type of issue is most often found in bonus rewards systems, Staking and Farming contracts, Vault and Vesting contracts, etc.	**Passed**
12	The impact of the exchange rate on the logic.	**Passed**
13	Private user data leaks.	**Passed**
14	Malicious Event log.	**Passed**
15	Scoping and Declarations.	**Passed**
16	Uninitialized storage pointers.	**Passed**
17	Arithmetic accuracy.	**Passed**

Severity Definitions

Risk Level	Description
Critical	Critical vulnerabilities are usually straightforward to exploit and can lead to tokens loss etc.
High	High-level vulnerabilities are difficult to exploit; however, they also have significant impact on smart contract execution, e.g. public access to crucial functions
Medium	Medium-level vulnerabilities are important to fix; however, they can’t lead to tokens lose
Low	Low-level vulnerabilities are mostly related to outdated, unused etc. code snippets, that can’t have significant impact on execution
Note	Lowest-level vulnerabilities, code style violations and info statements can’t affect smart contract execution and can be ignored.

Audit Findings

Critical:

No critical severity vulnerabilities were found.

High:

No High severity vulnerabilities were found

Medium:

#Missing add the Pause and unpaused write functions on the main contract

Description

HoneyRatelGameToken smart contract is inherit ERC20, Ownable, Pausable, Blacklistable but the main contract doesn't have any write function that allows the owner to paused and un paused the contract only the read function which is useless.

Remediation

Add paused and un paused write functions to the main contract and make the owner is the only controller, or remove the pause library from the contract and make the main contract inherit only ERC20, Ownable, Blacklistable.

Status: Closed. Fixed in version 2.

Low:

#Pragam version not fixed

Description

It is a good practice to lock the solidity version for a live deployment (use 0.8.7 instead of ^0.8.7). contracts should be deployed with the same compiler version and flags that they have been tested the most with. Locking the pragma helps ensure that contracts do not accidentally get deployed using, for example, the latest compiler which may have higher risks of undiscovered bugs. Contracts may also be deployed by others and the pragma indicates the compiler version intended by the original authors.

Remediation

Remove the ^ sign to lock the pragma version.

Status: Closed. Fixed in version 2.

#Owner privileges (In the period when the owner isn't renounced)

Description

The owner can add any add address as blacklister which allow to add or remove any address to Blacklist.

```
function blacklist(address _account) public onlyBlacklister {
        blacklisted[_account] = true;
        emit Blacklisted(_account);
    }

    function unBlacklist(address _account) public onlyBlacklister {
        blacklisted[_account] = false;
        emit UnBlacklisted(_account);
    }

    function updateBlacklister(address _newBlacklister) public onlyOwner {
        require(_newBlacklister != address(0));
        blacklister = _newBlacklister;
        emit BlacklisterChanged(blacklister);
    }
```

Remediation

Make these functions internal in next version.
P.S: This issue is common to the majority of Blacklistable smart contracts.

Status: Acknowledged.

Very Low:

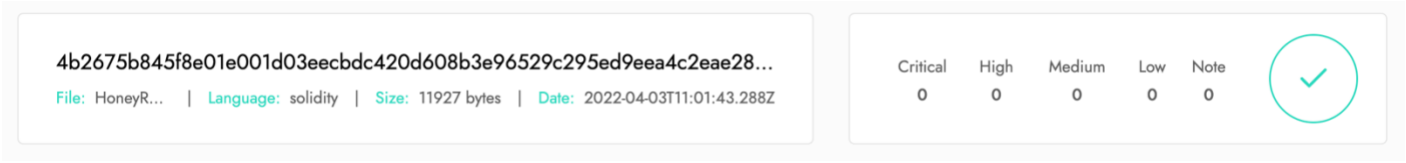
No Very Low severity vulnerabilities were found.

Notes:

No Notes were found.

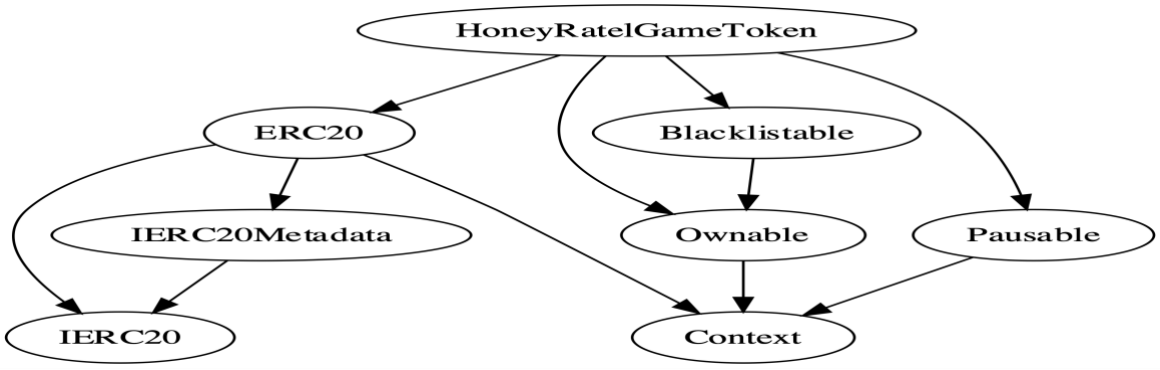
Automatic Testing

1- Check for security

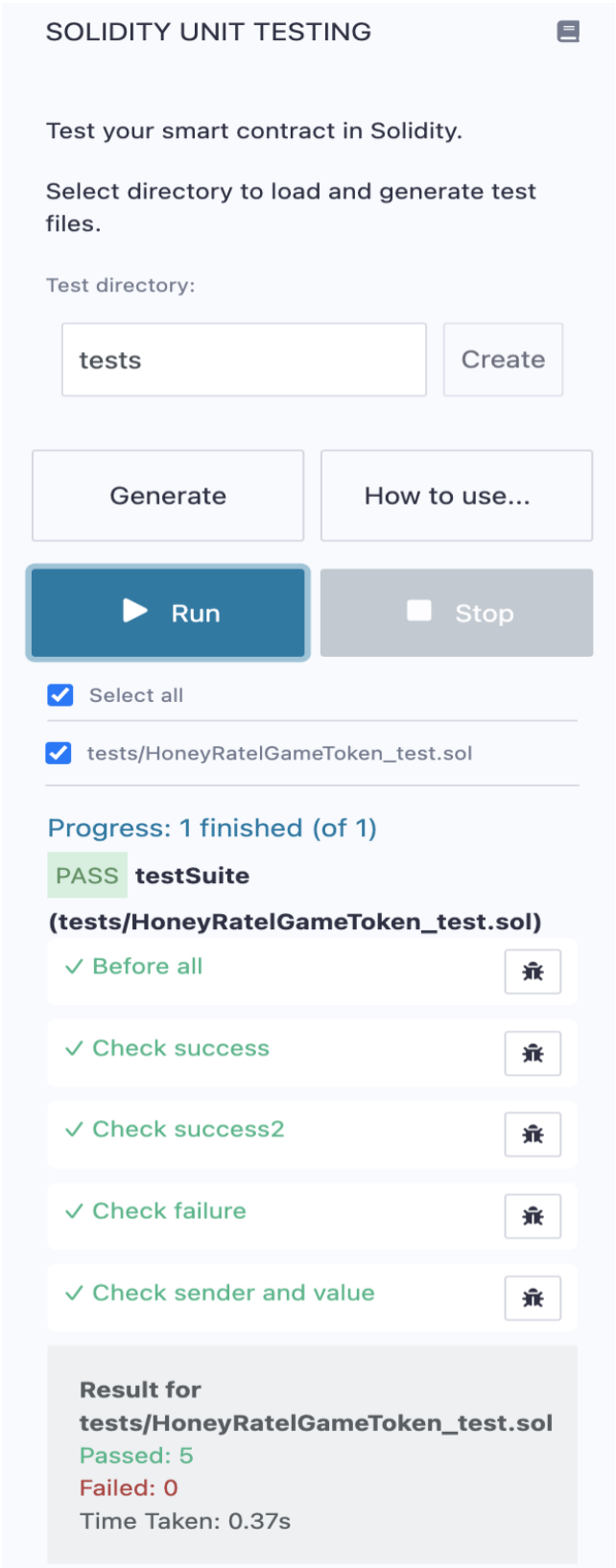


2- SOLIDITY STATIC ANALYSIS

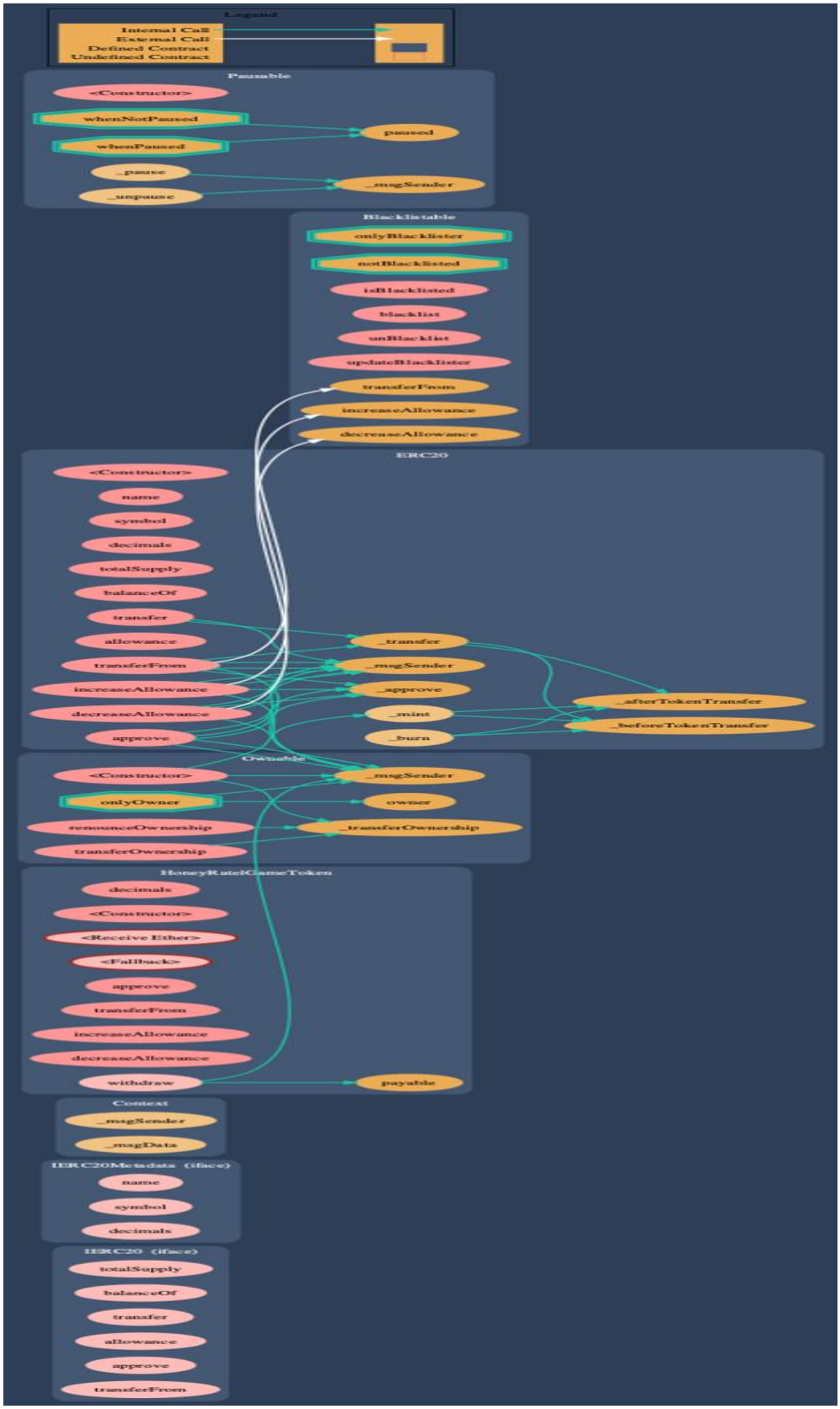
3- Inheritance graph



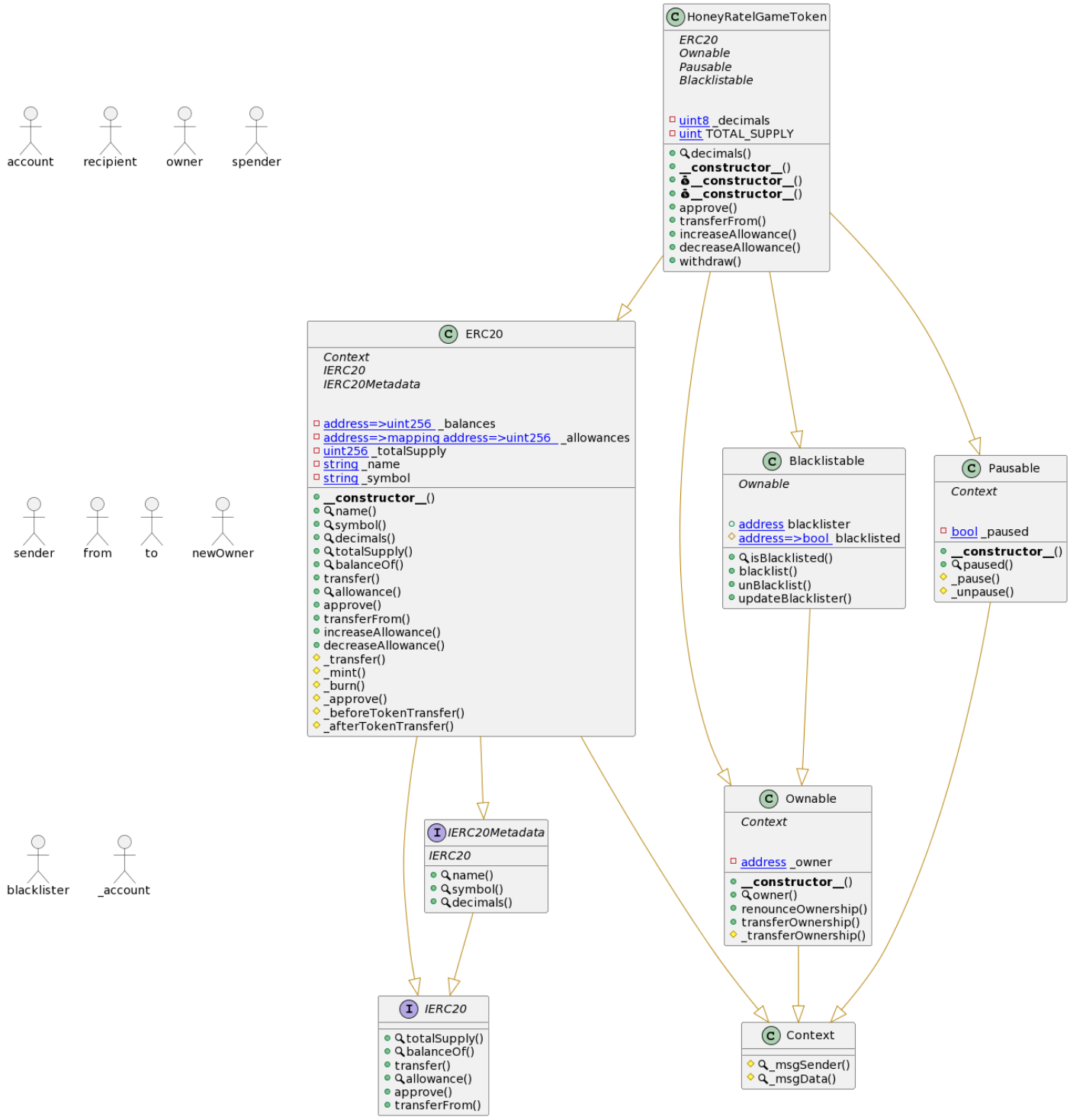
4- SOLIDITY UNIT TESTING



5- Call graph


Legend
Internal Call
External Call
Defined Contract
Undefined Contract
Pausable
<Constructor>
whenNotPaused
whenPaused
paused
_pause
_unpause
_msgSender
Blacklistable
onlyBlacklister
notBlacklisted
isBlacklisted
blacklist
unBlacklist
updateBlacklister
transferFrom
increaseAllowance
decreaseAllowance
ERC20
<Constructor>
name
symbol
decimals
totalSupply
balanceOf
transfer
allowance
transferFrom
increaseAllowance
decreaseAllowance
approve
_transfer
_msgSender
_approve
_mint
_burn
_afterTokenTransfer
_beforeTokenTransfer
Ownable
<Constructor>
onlyOwner
renounceOwnership
transferOwnership
_msgSender
owner
_transferOwnership
HoneyRuleGameToken
decimals
<Constructor>
<Receive Ether>
<Fallback>
approve
transferFrom
increaseAllowance
decreaseAllowance
withdraw
payable
Context
_msgSender
_msgData
IERC20Metadata (iface)
name
symbol
decimals
IERC20 (iface)
totalSupply
balanceOf
transfer
allowance
approve
transferFrom

Unified Modeling Language (UML)



Functions signature

```
Sighash   |   Function Signature
========================
39509351  =>  increaseAllowance(address,uint256)
18160ddd  =>  totalSupply()
70a08231  =>  balanceOf(address)
a9059cbb  =>  transfer(address,uint256)
dd62ed3e  =>  allowance(address,address)
095ea7b3  =>  approve(address,uint256)
23b872dd  =>  transferFrom(address,address,uint256)
06fdde03  =>  name()
95d89b41  =>  symbol()
313ce567  =>  decimals()
119df25f  =>  _msgSender()
8b49d47e  =>  _msgData()
a457c2d7  =>  decreaseAllowance(address,uint256)
30e0789e  =>  _transfer(address,address,uint256)
4e6ec247  =>  _mint(address,uint256)
6161eb18  =>  _burn(address,uint256)
104e81ff  =>  _approve(address,address,uint256)
cad3be83  =>  _beforeTokenTransfer(address,address,uint256)
8f811a1c  =>  _afterTokenTransfer(address,address,uint256)
8da5cb5b  =>  owner()
715018a6  =>  renounceOwnership()
f2fde38b  =>  transferOwnership(address)
d29d44ee  =>  _transferOwnership(address)
5c975abb  =>  paused()
320b2ad9  =>  _pause()
fc8234cb  =>  _unpause()
fe575a87  =>  isBlacklisted(address)
f9f92be4  =>  blacklist(address)
1a895266  =>  unBlacklist(address)
ad38bf22  =>  updateBlacklister(address)
3ccfd60b  =>  withdraw()
```

Automatic general report

Files Description Table

File Name	SHA-1 Hash
/Users/macbook/Desktop/smart contracts/HoneyRatelGameToken.sol	6202bbfb447aeaf9a243ce714ae7cc9f82da8ddf

Contracts Description Table

Contract	Type	Bases		
└	**Function Name**	**Visibility**	**Mutability**	**Modifiers**
IERC20	Interface				
└	totalSupply	External ❗		NO❗
└	balanceOf	External ❗		NO❗
└	transfer	External ❗	🛑	NO❗
└	allowance	External ❗		NO❗
└	approve	External ❗	🛑	NO❗
└	transferFrom	External ❗	🛑	NO❗
IERC20Metadata	Interface	IERC20			
└	name	External ❗		NO❗
└	symbol	External ❗		NO❗
└	decimals	External ❗		NO❗
Context	Implementation				
└	_msgSender	Internal 🔒		
└	_msgData	Internal 🔒		
ERC20	Implementation	Context, IERC20, IERC20Metadata			
└	<Constructor>	Public ❗	🛑	NO❗
└	name	Public ❗		NO❗
└	symbol	Public ❗		NO❗
└	decimals	Public ❗		NO❗
└	totalSupply	Public ❗		NO❗
└	balanceOf	Public ❗		NO❗
└	transfer	Public ❗	🛑	NO❗
└	allowance	Public ❗		NO❗
└	approve	Public ❗	🛑	NO❗
└	transferFrom	Public ❗	🛑	NO❗
└	increaseAllowance	Public ❗	🛑	NO❗
└	decreaseAllowance	Public ❗	🛑	NO❗
└	_transfer	Internal 🔒	🛑	
└	_mint	Internal 🔒	🛑	
└	_burn	Internal 🔒	🛑	
└	_approve	Internal 🔒	🛑	
└	_beforeTokenTransfer	Internal 🔒	🛑	
└	_afterTokenTransfer	Internal 🔒	🛑	

```
||||||
| **Ownable** | Implementation | Context |||
| └ | <Constructor> | Public ❗ | 🛑 |NO❗ |
| └ | owner | Public ❗ |  |NO❗ |
| └ | renounceOwnership | Public ❗ | 🛑 | onlyOwner |
| └ | transferOwnership | Public ❗ | 🛑 | onlyOwner |
| └ | _transferOwnership | Internal 🔒 | 🛑 | |
||||||
| **Pausable** | Implementation | Context |||
| └ | <Constructor> | Public ❗ | 🛑 |NO❗ |
| └ | paused | Public ❗ |  |NO❗ |
| └ | _pause | Internal 🔒 | 🛑 | whenNotPaused |
| └ | _unpause | Internal 🔒 | 🛑 | whenPaused |
||||||
| **Blacklistable** | Implementation | Ownable |||
| └ | isBlacklisted | Public ❗ |  |NO❗ |
| └ | blacklist | Public ❗ | 🛑 | onlyBlacklister |
| └ | unBlacklist | Public ❗ | 🛑 | onlyBlacklister |
| └ | updateBlacklister | Public ❗ | 🛑 | onlyOwner |
||||||
| **HoneyRatelGameToken** | Implementation | ERC20, Ownable, Pausable,
Blacklistable |||
| └ | decimals | Public ❗ |  |NO❗ |
| └ | <Constructor> | Public ❗ | 🛑 | ERC20 |
| └ | <Receive Ether> | External ❗ | 💸 |NO❗ |
| └ | <Fallback> | External ❗ | 💸 |NO❗ |
| └ | approve | Public ❗ | 🛑 | whenNotPaused notBlacklisted notBlacklisted |
| └ | transferFrom | Public ❗ | 🛑 | whenNotPaused notBlacklisted notBlacklisted
notBlacklisted |
| └ | increaseAllowance | Public ❗ | 🛑 | whenNotPaused notBlacklisted
notBlacklisted |
| └ | decreaseAllowance | Public ❗ | 🛑 | whenNotPaused notBlacklisted
notBlacklisted |
| └ | withdraw | External ❗ | 🛑 | onlyOwner |

 Legend

|  Symbol  |  Meaning  |
|:--------:|-----------|
|    🛑    | Function can modify state |
|    💸    | Function is payable |
```

Conclusion

The contracts are written systematically. Team found no critical issues. So, it is good to go for production.

Since possible test cases can be unlimited and developer level documentation (code flow diagram with function level description) not provided, for such an extensive smart contract protocol, we provide no such guarantee of future outcomes. We have used all the latest static tools and manual observations to cover maximum possible test cases to scan Everything.

Security state of the reviewed contract is “Secured”.

✓ No volatile code.
✓ Not many high severity issues were found.

Disclaimer

This is a limited report on our findings based on our analysis, in accordance with good industry practice as of 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 you 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 you should not rely on this report and cannot claim against the team on the basis of what it says or doesn't say, or how team produced it, and it is important for you to conduct your own independent investigations before making any decisions. team go into more detail on this in the below disclaimer below – please make sure to read it in full.

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