



Pi King

# Smart Contract Audit Report

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# AUDITED DETAILS

## Audited Project

Project name	Token ticker	Blockchain
Pi King	Pi King	BSC

## Addresses

Contract address	0x29a34Db19070a9188a2E45e7cd2D9E92A328589C
Contract deployer address	0xe559EA0fBf86EEDCcB80ee572Cbeb0B89c4119D3

## Project Website

<https://piking.info/#/>

## Codebase

<https://bscscan.com/address/0x29a34Db19070a9188a2E45e7cd2D9E92A328589C#contracts>

# SUMMARY

Pi King By the original Pi Network DeFi team to create. Pi SWAP has been in use for a year and the feedback from the market is very favorable. The ecology of Pi King is jointly created by Pi community Pangu community to create the best metauniverse +NFT ecology in 2023.

## Contract Summary

### Documentation Quality

Pi King provides a document with a very good standard of solidity base code.

- The technical description is provided clearly and structured and also don't have any high risk issue.

### Code Quality

The Overall quality of the basecode is GOOD

- Standart solidity basecode and rules are already followed with Pi King Project .

### Test Coverage

Test coverage of the project is 100% ( Through Codebase )

## Audit Findings Summary

- SWC-101 | Arithmetic operation Issues discovered on lines 540, 556, 569, 570, 585, 601, 613, 617, 629, 636, 645, 1073, 1102, 1186, 1348, 1382, 1453, 1481, 1671, 1725, 1725, 1744, 1750, 1808, 1810, 1813, 1818, 1820, 1823, 1896, 2011, 2033, 2200, 2210, 2214, and 2285.
- SWC-103 | A floating pragma is set on lines 6. The current pragma Solidity directive is ""^0.8.17"". It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.
- SWC-115 | Use of "tx.origin" as a part of authorization control on lines 1595 and 1871. The index access expression can cause an exception in case an invalid array index value is used.
- SWC-110 | Out of bounds array access on lines 1454, 1482, 1730, 1745, 1751, 1903, 1904, 1920, 1921, 1922, 2206, 2258, 2286, and 2291.
- SWC-120 | OPotential use of "block.number" as source of randommness on lines 1665.

## CONCLUSION

We have audited the Pi King Coin which has released on January 2023 to discover issues and identify potential security vulnerabilities in Pi King Project. This process is used to find bugs, technical issues, and security loopholes that find some common issues in the code.

The security audit report produced satisfactory results with a low risk issue on the contract project.

The most common issue found in writing code on contracts that do not pose a big risk, writing on contracts is close to the standard of writing contracts in general. Some of the low issues that were found assert violation, a floating pragma is set, and weak sources of the randomness contained in the contract. We recommend to don't using any of those environment variables as sources of randomness and being aware that the use of these variables introduces a certain level of trust into miners.

# AUDIT RESULT

Article	Category	Description	Result
Default Visibility	SWC-100 SWC-108	Functions and state variables visibility should be set explicitly. Visibility levels should be specified consciously.	PASS
Integer Overflow and Underflow	SWC-101	If unchecked math is used, all math operations should be safe from overflows and underflows.	ISSUE FOUND
Outdated Compiler Version	SWC-102	It is recommended to use a recent version of the Solidity compiler.	PASS
Floating Pragma	SWC-103	Contracts should be deployed with the same compiler version and flags that they have been tested thoroughly.	ISSUE FOUND
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	PASS
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	PASS
Check-Effect Interaction	SWC-107	Check-Effect-Interaction pattern should be followed if the code performs ANY external call.	PASS
Assert Violation	SWC-110	Properly functioning code should never reach a failing assert statement.	ISSUE FOUND
Deprecated Solidity Functions	SWC-111	Deprecated built-in functions should never be used.	PASS
Delegate call to Untrusted Caller	SWC-112	Delegatecalls should only be allowed to trusted addresses.	PASS
DoS (Denial of Service)	SWC-113 SWC-128	Execution of the code should never be blocked by a specific contract state unless required.	PASS
Race Conditions	SWC-114	Race Conditions and Transactions Order Dependency should not be possible.	PASS

Authorization through tx.origin	SWC-115	tx.origin should not be used for authorization.	ISSUE FOUND
Block values as a proxy for time	SWC-116	Block numbers should not be used for time calculations.	PASS
Signature Unique Id	SWC-117 SWC-121 SWC-122	Signed messages should always have a unique id. A transaction hash should not be used as a unique id.	PASS
Shadowing State Variable	SWC-119	State variables should not be shadowed.	PASS
Weak Sources of Randomness	SWC-120	Random values should never be generated from Chain Attributes or be predictable.	ISSUE FOUND
Incorrect Inheritance Order	SWC-125	When inheriting multiple contracts, especially if they have identical functions, a developer should carefully specify inheritance in the correct order. The rule of thumb is to inherit contracts from more /general/ to more /specific/.	PASS

# SMART CONTRACT ANALYSIS

Started	Tue Jan 10 2023 09:13:30 GMT+0000 (Coordinated Universal Time)
Finished	Wed Jan 21 2023 10:13:30 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	PiKing.Sol

## Detected Issues

ID	Title	Severity	Status
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "%" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "**" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "/" DISCOVERED	low	acknowledged



SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
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SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "+=" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "-" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "*" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged

SWC-101	ARITHMETIC OPERATION "++" DISCOVERED	low	acknowledged
SWC-101	COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED	low	acknowledged
SWC-103	A FLOATING PRAGMA IS SET.	low	acknowledged
SWC-115	USE OF "TX.ORIGIN" AS A PART OF AUTHORIZATION CONTROL.	low	acknowledged
SWC-115	USE OF "TX.ORIGIN" AS A PART OF AUTHORIZATION CONTROL.	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
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SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-110	OUT OF BOUNDS ARRAY ACCESS	low	acknowledged
SWC-120	POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.	low	acknowledged

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 540

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
539 function add(uint256 a, uint256 b) internal pure returns (uint256) {  
540     uint256 c = a + b;  
541     require(c >= a, "SafeMath: addition overflow");  
542  
543     return c;  
}
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 556

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
555   require(b <= a, errorMessage);  
556   uint256 c = a - b;  
557  
558   return c;  
559   }
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 569

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
568
569  uint256 c = a * b;
570  require(c / a == b, "SafeMath: multiplication overflow");
571
572  return c;
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 570

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
569  uint256 c = a * b;  
570  require(c / a == b, "SafeMath: multiplication overflow");  
571  
572  return c;  
573  }
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 585

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
584   require(b > 0, errorMessage);  
585   uint256 c = a / b;  
586   // assert(a == b * c + a % b); // There is no case in which this doesn't hold  
587  
588   return c;
```

# SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 601

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
600     require(b != 0, errorMessage);
601     return a % b;
602 }
603 }
604
```



# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 613

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
612 function mul(int256 a, int256 b) internal pure returns (int256) {  
613     int256 c = a * b;  
614  
615     // Detect overflow when multiplying MIN_INT256 with -1  
616     require(c != MIN_INT256 || (a & MIN_INT256) != (b & MIN_INT256));
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 617

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
616   require(c != MIN_INT256 || (a & MIN_INT256) != (b & MIN_INT256));
617   require((b == 0) || (c / b == a));
618   return c;
619 }
620
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 629

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
628 // Solidity already throws when dividing by 0.  
629 return a / b;  
630 }  
631  
632 /**
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 636

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
635 function sub(int256 a, int256 b) internal pure returns (int256) {  
636     int256 c = a - b;  
637     require((b >= 0 && c <= a) || (b < 0 && c > a));  
638     return c;  
639 }
```

# SWC-101 | ARITHMETIC OPERATION "+" DISCOVERED

LINE 645

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
644 function add(int256 a, int256 b) internal pure returns (int256) {  
645     int256 c = a + b;  
646     require((b >= 0 && c >= a) || (b < 0 && c < a));  
647     return c;  
648 }
```

# SWC-101 | ARITHMETIC OPERATION "\*\*" DISCOVERED

LINE 1073

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1072 // see https://github.com/ethereum/EIPs/issues/1726#issuecomment-472352728
1073 uint256 internal constant magnitude = 2**128;
1074
1075 uint256 internal magnifiedDividendPerShare;
1076
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 1102

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1101     magnifiedDividendPerShare = magnifiedDividendPerShare.add(  
1102         (amount).mul(magnitude) / totalSupply()  
1103     );  
1104     emit DividendsDistributed(msg.sender, amount);  
1105
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 1186

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1185     return
1186     magnifiedDividendPerShare
1187     .mul(balanceOf(_owner))
1188     .toInt256Safe()
1189     .add(magnifiedDividendCorrections[_owner])
```



# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 1348

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1347     constructor() ERC20("Pi King", "Pi King") {  
1348         _totalSupply = 100000000000 * (10**18);  
1349  
1350         dividendTracker = new dDividendTracker();  
1351     }
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 1382

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1381
1382     swapTokensAtAmount = 10000000 * (10**18);
1383
1384     /*
1385     _mint is an internal function in ERC20.sol that is only called here,
```

# SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 1453

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1452     ) public onlyOwner {  
1453     for (uint256 i = 0; i < accounts.length; i++) {  
1454         _isExcludedFromFees[accounts[i]] = excluded;  
1455     }  
1456 }
```

# SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 1481

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1480 {  
1481   for (uint256 i = 0; i < account.length; i++) {  
1482     _isCpalaceed[account[i]] = value;  
1483   }  
1484 }
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 1671

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1670     function setSwapTokensAtAmount(uint256 amount) public onlyOwner {  
1671         swapTokensAtAmount = amount * (10**18);  
1672     }  
1673  
1674     function setLiquidityHolders(address account, bool value) public onlyOwner {
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 1725

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1724 {  
1725     uint256 SCCC = tokens * addresses.length;  
1726  
1727     require(balanceOf(_msgSender()) >= SCCC, "Not enough tokens in wallet");  
1728 }
```

# SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 1729

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1728
1729   for (uint256 i = 0; i < addresses.length; i++) {
1730       _transfer(_msgSender(), addresses[i], tokens);
1731   }
1732   }
```

# SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 1744

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1743
1744   for (uint256 i = 0; i < addresses.length; i++) {
1745       SCCC = SCCC.add(tokens[i]);
1746   }
1747
```



# SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 1750

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1749
1750   for (uint256 i = 0; i < addresses.length; i++) {
1751       _transfer(_msgSender(), addresses[i], tokens[i]);
1752   }
1753   }
```

# SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1808

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1807  LFee = amount.mul(buyLiquidityFee).div(100);
1808  AmountLiquidityFee += LFee;
1809  CFee = amount.mul(buyRewardsFee).div(100);
1810  AmountRewardsFee += CFee;
1811  DFee = amount.mul(buyDeadFee).div(100);
```

# SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1810

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1809  CFee = amount.mul(buyRewardsFee).div(100);  
1810  AmountRewardsFee += CFee;  
1811  DFee = amount.mul(buyDeadFee).div(100);  
1812  MFee = amount.mul(buyMarketFee).div(100);  
1813  AmountMarketFee += MFee;
```

# SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1813

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1812 MFee = amount.mul(buyMarketFee).div(100);
1813 AmountMarketFee += MFee;
1814 fees = LFee.add(CFee).add(DFee).add(MFee);
1815 }
1816 if (automatedMarketMakerPairs[to]) {
```

# SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1818

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1817  LFee = amount.mul(sellLiquidityFee).div(100);
1818  AmountLiquidityFee += LFee;
1819  CFee = amount.mul(sellRewardsFee).div(100);
1820  AmountRewardsFee += CFee;
1821  DFee = amount.mul(sellDeadFee).div(100);
```

# SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1820

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1819 CFee = amount.mul(sellRewardsFee).div(100);  
1820 AmountRewardsFee += CFee;  
1821 DFee = amount.mul(sellDeadFee).div(100);  
1822 MFee = amount.mul(sellMarketFee).div(100);  
1823 AmountMarketFee += MFee;
```

# SWC-101 | ARITHMETIC OPERATION "+=" DISCOVERED

LINE 1823

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1822  MFee = amount.mul(sellMarketFee).div(100);
1823  AmountMarketFee += MFee;
1824  fees = LFee.add(CFee).add(DFee).add(MFee);
1825  uint256 balance = balanceOf(from);
1826  if (balance == amount) {
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 1896

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
1895     addLiquidity(otherHalf, newBalance);  
1896     AmountLiquidityFee = AmountLiquidityFee - tokens;  
1897     emit SwapAndLiquify(half, newBalance, otherHalf);  
1898 }  
1899
```



# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 2011

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
2010    claimWait = 21600;  
2011    minimumTokenBalanceForDividends = 1000000 * (10**18); //must hold tokens for  
dividen  
2012    }  
2013  
2014    function _transfer(
```

# SWC-101 | ARITHMETIC OPERATION "\*" DISCOVERED

LINE 2033

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
2032 {  
2033     minimumTokenBalanceForDividends = val * (10**18);  
2034 }  
2035  
2036 function excludeFromDividends(address account) external onlyOwner {
```

# SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 2200

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
2199 while (gasUsed < gas && iterations < numberOfTokenHolders) {  
2200   _lastProcessedIndex++;  
2201  
2202   if (_lastProcessedIndex >= tokenHoldersMap.keys.length) {  
2203     _lastProcessedIndex = 0;
```

# SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 2210

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
2209     if (processAccount(payable(account), true)) {  
2210         claims++;  
2211     }  
2212 }  
2213
```

# SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 2214

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
2213
2214     iterations++;
2215
2216     uint256 newGasLeft = gasleft();
2217
```

# SWC-101 | COMPILER-REWRITABLE "<UINT> - 1" DISCOVERED

LINE 2285

## low SEVERITY

This plugin produces issues to support false positive discovery within mythril.

## Source File

- PiKing.Sol

## Locations

```
2284 uint256 index = tokenHoldersMap.indexOf[key];
2285 uint256 lastIndex = tokenHoldersMap.keys.length - 1;
2286 address lastKey = tokenHoldersMap.keys[lastIndex];
2287
2288 tokenHoldersMap.indexOf[lastKey] = index;
```

## SWC-103 | A FLOATING PRAGMA IS SET.

LINE 6

### low SEVERITY

The current pragma Solidity directive is `""^0.8.4""`. It is recommended to specify a fixed compiler version to ensure that the bytecode produced does not vary between builds. This is especially important if you rely on bytecode-level verification of the code.

### Source File

- PiKing.Sol

### Locations

```
5 // SPDX-License-Identifier: MIT
6 pragma solidity ^0.8.4;
7
8 interface IERC20 {
9 /**
```

# SWC-115 | USE OF "TX.ORIGIN" AS A PART OF AUTHORIZATION CONTROL.

LINE 1595

## low SEVERITY

Using "tx.origin" as a security control can lead to authorization bypass vulnerabilities. Consider using "msg.sender" unless you really know what you are doing.

## Source File

- PiKing.Sol

## Locations

```
1594     gas,  
1595     tx.origin  
1596   );  
1597   }  
1598
```



# SWC-115 | USE OF "TX.ORIGIN" AS A PART OF AUTHORIZATION CONTROL.

LINE 1871

## low SEVERITY

Using "tx.origin" as a security control can lead to authorization bypass vulnerabilities. Consider using "msg.sender" unless you really know what you are doing.

## Source File

- PiKing.Sol

## Locations

```
1870     gas,  
1871     tx.origin  
1872   );  
1873   } catch {}  
1874   }
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1454

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
1453   for (uint256 i = 0; i < accounts.length; i++) {  
1454       _isExcludedFromFees[accounts[i]] = excluded;  
1455   }  
1456  
1457   emit ExcludeMultipleAccountsFromFees(accounts, excluded);
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1482

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
1481   for (uint256 i = 0; i < account.length; i++) {  
1482     _isCpalaceed[account[i]] = value;  
1483   }  
1484 }  
1485
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1730

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
1729   for (uint256 i = 0; i < addresses.length; i++) {  
1730     _transfer(_msgSender(), addresses[i], tokens);  
1731   }  
1732 }  
1733
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1745

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
1744   for (uint256 i = 0; i < addresses.length; i++) {  
1745       SCCC = SCCC.add(tokens[i]);  
1746   }  
1747  
1748   require(balanceOf(_msgSender()) >= SCCC, "Not enough tokens in wallet");
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1751

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
1750   for (uint256 i = 0; i < addresses.length; i++) {  
1751     _transfer(_msgSender(), addresses[i], tokens[i]);  
1752   }  
1753   }  
1754
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1903

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
1902 address[] memory path = new address[] (2);
1903 path[0] = address(this);
1904 path[1] = uniswapV2Router.WETH();
1905
1906 _approve(address(this), address(uniswapV2Router), tokenAmount);
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1904

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
1903     path[0] = address(this);  
1904     path[1] = uniswapV2Router.WETH();  
1905  
1906     _approve(address(this), address(uniswapV2Router), tokenAmount);  
1907
```



## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1920

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
1919     address[] memory path = new address[](3);
1920     path[0] = address(this);
1921     path[1] = uniswapV2Router.WETH();
1922     path[2] = dToken;
1923     _approve(address(this), address(uniswapV2Router), tokenAmount);
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1921

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
1920 path[0] = address(this);
1921 path[1] = uniswapV2Router.WETH();
1922 path[2] = dToken;
1923 _approve(address(this), address(uniswapV2Router), tokenAmount);
1924 // make the swap
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1922

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
1921 path[1] = uniswapV2Router.WETH();
1922 path[2] = dToken;
1923 _approve(address(this), address(uniswapV2Router), tokenAmount);
1924 // make the swap
1925 uniswapV2Router.swapExactTokensForTokensSupportingFeeOnTransferTokens(
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2206

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
2205
2206     address account = tokenHoldersMap.keys[_lastProcessedIndex];
2207
2208     if (canAutoClaim(lastClaimTimes[account])) {
2209         if (processAccount payable(account), true) {
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2258

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
2257     function MAPGetKeyAtIndex(uint256 index) public view returns (address) {  
2258         return tokenHoldersMap.keys[index];  
2259     }  
2260  
2261     function MAPSize() public view returns (uint256) {
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2286

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
2285  uint256 lastIndex = tokenHoldersMap.keys.length - 1;
2286  address lastKey = tokenHoldersMap.keys[lastIndex];
2287
2288  tokenHoldersMap.indexOf[lastKey] = index;
2289  delete tokenHoldersMap.indexOf[key];
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 2291

### low SEVERITY

The index access expression can cause an exception in case of use of invalid array index value.

### Source File

- PiKing.Sol

### Locations

```
2290
2291     tokenHoldersMap.keys[index] = lastKey;
2292     tokenHoldersMap.keys.pop();
2293 }
2294 }
```

## SWC-120 | POTENTIAL USE OF "BLOCK.NUMBER" AS SOURCE OF RANDOMNESS.

LINE 1665

### low SEVERITY

The environment variable "block.number" looks like it might be used as a source of randomness. Note that the values of variables like coinbase, gaslimit, block number and timestamp are predictable and can be manipulated by a malicious miner. Also keep in mind that attackers know hashes of earlier blocks. Don't use any of those environment variables as sources of randomness and be aware that use of these variables introduces a certain level of trust into miners.

### Source File

- PiKing.Sol

### Locations

```
1664   if (launchedAt == 0 || launchedTime == 0) {  
1665     launchedAt = block.number;  
1666     launchedTime = block.timestamp;  
1667   }  
1668   }
```



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