



# Aspirant Smart Contract Audit Report

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# AUDITED DETAILS

## Audited Project

Project name	Token ticker	Blockchain
Aspirant	ASPIRANT	BSC

## Addresses

Contract address	0xCCD9748c5204927AC7fC9ECc47bA4Df6Aaa29399
Contract deployer address	0xe716d9Fd11276B03056892F29ad72c75693AeE64

## Project Website

<https://www.aspirant.app/>

## Codebase

<https://bscscan.com/address/0xCCD9748c5204927AC7fC9ECc47bA4Df6Aaa29399#code>

# SUMMARY

Aspirant is a secure marketplace for contractors and customers that enables you to find trusted professionals for the services you require, such as car services, home services, construction services, and much more. Whether you are a customer looking for a secure home services online platform to hire local experts or a service provider willing to offer their services to local customers, we've got you covered.

## | Contract Summary

### **Documentation Quality**

This project has a standard of documentation.

- Technical description provided.

### **Code Quality**

The quality of the code in this project is up to standard.

- The official Solidity style guide is followed.

### **Test Scope**

Project test coverage is 100% ( Via Codebase ).

## | Audit Findings Summary

### **Issues Found**

- SWC-101 | Arithmetic operation issues discovered on lines 104, 136, 159, 160, 195, 231, 758, 758, 759, 783, 784, 915, 917, 940, 995, 1030, 1036, 1042, .
- SWC-101 | Compiler-rewritable " - 1 " discovered on line 917
- SWC-108 | State variable visibility is not set on line 780. It is best practice to set the visibility of state variables explicitly to public or private.
- SWC-110 | Out of bounds array access issues discovered on lines 916, 917, 996, 997, 998, 1152, and 1153.

# CONCLUSION

We have audited the Aspirant project which has released on May 2022 to discover issues and identify potential security vulnerabilities in Aspirant Project. This process is used to find technical issues and security loopholes that find some common issues in the code.

The security audit report produced satisfactory results with low-risk issues.

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. The low-level issues found are some arithmetic operation issues, a state variable visibility is not set, and out of bounds array access which the index access expression can cause an exception in case of use of an invalid array index value.

# 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.	ISSUE FOUND
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.	PASS
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.	PASS
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.	PASS
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	Fri May 05 2022 23:17:20 GMT+0000 (Coordinated Universal Time)
Finished	Sat May 06 2022 02:02:50 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	aspirant.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

LINE 104

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
103  function add(uint256 a, uint256 b) internal pure returns (uint256) {  
104      uint256 c = a + b;  
105      require(c >= a, "SafeMath: addition overflow");  
106  
107      return c;
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 136

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
135   require(b <= a, errorMessage);  
136   uint256 c = a - b;  
137  
138   return c;  
139   }
```

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

LINE 159

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
158
159  uint256 c = a * b;
160  require(c / a == b, "SafeMath: multiplication overflow");
161
162  return c;
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 160

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
159  uint256 c = a * b;  
160  require(c / a == b, "SafeMath: multiplication overflow");  
161  
162  return c;  
163  }
```

# SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 195

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
194   require(b > 0, errorMessage);  
195   uint256 c = a / b;  
196   // assert(a == b * c + a % b); // There is no case in which this doesn't hold  
197  
198   return c;
```

# SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 231

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
230     require(b != 0, errorMessage);
231     return a % b;
232 }
233 }
234
```

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

LINE 758

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
757 uint256 private constant MAX = ~uint256(0);  
758 uint256 private _tTotal = 986_000_000_000 * 10 ** 18;  
759 uint256 private _rTotal = (MAX - (MAX % _tTotal));  
760 uint256 private _tFeeTotal;  
761
```



# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 759

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
758 uint256 private _tTotal = 986_000_000_000 * 10 ** 18;  
759 uint256 private _rTotal = (MAX - (MAX % _tTotal));  
760 uint256 private _tFeeTotal;  
761  
762 string private _name = "Aspirant";
```

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

LINE 783

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
782
783  uint256 public _maxTxAmount = 4_930_000_000 * 10 ** 18;
784  uint256 private numTokensSellToAddToLiquidity = 493_000_000 * 10 ** 18;
785
786  event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);
```

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

LINE 784

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
783  uint256 public _maxTxAmount = 4_930_000_000 * 10 ** 18;  
784  uint256 private numTokensSellToAddToLiquidity = 493_000_000 * 10 ** 18;  
785  
786  event MinTokensBeforeSwapUpdated(uint256 minTokensBeforeSwap);  
787  event SwapAndLiquifyEnabledUpdated(bool enabled);
```

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

LINE 915

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
914   require(!_isExcluded[account], "Account is already excluded");
915   for (uint256 i = 0; i < _excluded.length; i++) {
916       if (_excluded[i] == account) {
917           _excluded[i] = _excluded[_excluded.length - 1];
918           _tOwned[account] = 0;
```

# SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 917

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
916   if (_excluded[i] == account) {  
917     _excluded[i] = _excluded[_excluded.length - 1];  
918     _tOwned[account] = 0;  
919     _isExcluded[account] = false;  
920     _excluded.pop();
```

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

LINE 940

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
939     _maxTxAmount = _tTotal.mul(maxTxPercent).div(  
940     10**2  
941     );  
942 }  
943
```

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

LINE 995

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
994  uint256 tSupply = _tTotal;
995  for (uint256 i = 0; i < _excluded.length; i++) {
996  if (_rOwned[_excluded[i]] > rSupply || _tOwned[_excluded[i]] > tSupply) return
(_rTotal, _tTotal);
997  rSupply = rSupply.sub(_rOwned[_excluded[i]]);
998  tSupply = tSupply.sub(_tOwned[_excluded[i]]);
```

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

LINE 1030

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
1029     return _amount.mul(_taxFee).div(  
1030         10**2  
1031     );  
1032 }  
1033
```



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

LINE 1036

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
1035     return _amount.mul(_liquidityFee).div(  
1036         10**2  
1037     );  
1038 }  
1039
```

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

LINE 1042

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
1041     return _amount.mul(_marketingFee).div(  
1042         10**2  
1043     );  
1044 }  
1045
```

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

LINE 917

## low SEVERITY

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

## Source File

- aspirant.sol

## Locations

```
916   if (_excluded[i] == account) {  
917     _excluded[i] = _excluded[_excluded.length - 1];  
918     _tOwned[account] = 0;  
919     _isExcluded[account] = false;  
920     _excluded.pop();
```

## SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 780

### low SEVERITY

It is best practice to set the visibility of state variables explicitly. The default visibility for "inSwapAndLiquify" is internal. Other possible visibility settings are public and private.

### Source File

- aspirant.sol

### Locations

```
779
780  bool inSwapAndLiquify;
781  bool public swapAndLiquifyEnabled = false;
782
783  uint256 public _maxTxAmount = 4_930_000_000 * 10 ** 18;
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 916

### low SEVERITY

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

### Source File

- aspirant.sol

### Locations

```
915   for (uint256 i = 0; i < _excluded.length; i++) {  
916     if (_excluded[i] == account) {  
917       _excluded[i] = _excluded[_excluded.length - 1];  
918       _tOwned[account] = 0;  
919       _isExcluded[account] = false;
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 917

### low SEVERITY

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

### Source File

- aspirant.sol

### Locations

```
916   if (_excluded[i] == account) {  
917     _excluded[i] = _excluded[_excluded.length - 1];  
918     _tOwned[account] = 0;  
919     _isExcluded[account] = false;  
920     _excluded.pop();
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 996

### low SEVERITY

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

### Source File

- aspirant.sol

### Locations

```
995   for (uint256 i = 0; i < _excluded.length; i++) {  
996     if (_rOwned[_excluded[i]] > rSupply || _tOwned[_excluded[i]] > tSupply) return  
      (_rTotal, _tTotal);  
997     rSupply = rSupply.sub(_rOwned[_excluded[i]]);  
998     tSupply = tSupply.sub(_tOwned[_excluded[i]]);  
999   }
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 997

### low SEVERITY

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

### Source File

- aspirant.sol

### Locations

```
996   if (_rOwned[_excluded[i]] > rSupply || _tOwned[_excluded[i]] > tSupply) return
    (_rTotal, _tTotal);
997   rSupply = rSupply.sub(_rOwned[_excluded[i]]);
998   tSupply = tSupply.sub(_tOwned[_excluded[i]]);
999   }
1000   if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
```



## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 998

### low SEVERITY

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

### Source File

- aspirant.sol

### Locations

```
997   rSupply = rSupply.sub(_rOwned[_excluded[i]]);
998   tSupply = tSupply.sub(_tOwned[_excluded[i]]);
999   }
1000   if (rSupply < _rTotal.div(_tTotal)) return (_rTotal, _tTotal);
1001   return (rSupply, tSupply);
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1152

### low SEVERITY

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

### Source File

- aspirant.sol

### Locations

```
1151     address[] memory path = new address[](2);
1152     path[0] = address(this);
1153     path[1] = uniswapV2Router.WETH();
1154
1155     _approve(address(this), address(uniswapV2Router), tokenAmount);
```

## SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 1153

### low SEVERITY

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

### Source File

- aspirant.sol

### Locations

```
1152 path[0] = address(this);
1153 path[1] = uniswapV2Router.WETH();
1154
1155 _approve(address(this), address(uniswapV2Router), tokenAmount);
1156
```

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