



Qatar World Cup Smart Contract Audit Report

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AUDITED DETAILS

Audited Project

Project name	Token ticker	Blockchain
Qatar World Cup	QWC	Ethereum

Addresses

Contract address	0xFB50df8a2C54fe5eAE220E138D6215B1Ea27f969
Contract deployer address	0xa962d2CD77fC7068BA Ae525283910D8B6CD26F42

Project Website

https://qwcworldcup.org/

Codebase

https://etherscan.io/address/0xFB50df8a2C54fe5eAE220E138D6215B1Ea27f969#code

SUMMARY

The future of cryptocurrency has arrived, along with Staking, the DAO platform, and the potential Metaverse! Blockchain applications can be found all over the world, and crypto betting is not far behind. It is evident with decentralised sports betting platforms. These are altering the way we bet and will pave the way for a decentralised and community-driven betting activity.

Contract Summary

Documentation Quality

Qatar World Cup provides a very good documentation with 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 standard.

- Standard solidity basecode and rules are already followed by Qatar World Cup with the discovery of several low issues.

Test Coverage

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

Audit Findings Summary

- SWC-100 SWC-108 | Explicitly define visibility for all state variables on lines 157 and 190.
- SWC-101 | It is recommended to use vetted safe math libraries for arithmetic operations consistently on lines 39, 51, 61, 62, 73, 83, 231, 231, 249, 249, 250, 250, 345, 351, 351, 363 and 363.
- SWC-103 | Pragma statements can be allowed to float when a contract is intended on lines 11.
- SWC-110 SWC-123 | It is recommended to use of revert(), assert(), and require() in Solidity, and the new REVERT opcode in the EVM on lines 233, 234, 235, 237, 238, 239, 241, 242, 243, 249, 250, 253, 254, 346, 490 and 491.

CONCLUSION

We have audited the Qatar World Cup project released on November 2022 to discover issues and identify potential security vulnerabilities in Qatar World Cup Project. This process is used to find technical issues and security loopholes which might be found in the smart contract.

The security audit report provides a satisfactory result with some low-risk issues.

The issues found in the Qatar World Cup smart contract code do not pose a considerable risk. The writing of the contract is close to the standard of writing contracts in general. The low-risk issues found are some arithmetic operation issues, a floating pragma is set, 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 the 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.	ISSUE FOUND
Unchecked Call Return Value	SWC-104	The return value of a message call should be checked.	PASS
Unprotected Ether Withdrawal	SWC-105	Due to missing or insufficient access controls, malicious parties can withdraw from the contract.	PASS
SELFDESTRUCT Instruction	SWC-106	The contract should not be self-destructible while it has funds belonging to users.	PASS
Reentrancy	SWC-107	Check effect interaction pattern should be followed if the code performs recursive call.	PASS
Uninitialized Storage Pointer	SWC-109	Uninitialized local storage variables can point to unexpected storage locations in the contract.	PASS
Assert Violation	SWC-110 SWC-123	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 Callee	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
Incorrect Constructor Name	SWC-118	Constructors are special functions that are called only once during the contract creation.	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
Write to Arbitrary Storage Location	SWC-124	The contract is responsible for ensuring that only authorized user or contract accounts may write to sensitive storage locations.	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
Insufficient Gas Griefing	SWC-126	Insufficient gas grieving attacks can be performed on contracts which accept data and use it in a sub-call on another contract.	PASS
Arbitrary Jump Function	SWC-127	As Solidity doesnt support pointer arithmetics, it is impossible to change such variable to an arbitrary value.	PASS

Typographical Error	SWC-129	A typographical error can occur for example when the intent of a defined operation is to sum a number to a variable.	PASS
Override control character	SWC-130	Malicious actors can use the Right-To-Left-Override unicode character to force RTL text rendering and confuse users as to the real intent of a contract.	PASS
Unused variables	SWC-131 SWC-135	Unused variables are allowed in Solidity and they do not pose a direct security issue.	PASS
Unexpected Ether balance	SWC-132	Contracts can behave erroneously when they strictly assume a specific Ether balance.	PASS
Hash Collisions Variable	SWC-133	Using abi.encodePacked() with multiple variable length arguments can, in certain situations, lead to a hash collision.	PASS
Hardcoded gas amount	SWC-134	The transfer() and send() functions forward a fixed amount of 2300 gas.	PASS
Unencrypted Private Data	SWC-136	It is a common misconception that private type variables cannot be read.	PASS

SMART CONTRACT ANALYSIS

Started	Wednesday Nov 16 2022 23:54:33 GMT+0000 (Coordinated Universal Time)
Finished	Thursday Nov 17 2022 15:00:32 GMT+0000 (Coordinated Universal Time)
Mode	Standard
Main Source File	QatarWorldCup.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 39

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
38  function add(uint256 a, uint256 b) internal pure returns (uint256) {
39  uint256 c = a + b;
40  require(c >= a, "SafeMath: addition overflow");
41
42  return c;
43
```

SWC-101 | ARITHMETIC OPERATION "-" DISCOVERED

LINE 51

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
50  require(b <= a, errorMessage);  
51  uint256 c = a - b;  
52  
53  return c;  
54  }  
55
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 61

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
60
61  uint256 c = a * b;
62  require(c / a == b, "SafeMath: multiplication overflow");
63
64  return c;
65
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 62

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
61  uint256 c = a * b;  
62  require(c / a == b, "SafeMath: multiplication overflow");  
63  
64  return c;  
65  }  
66
```

SWC-101 | ARITHMETIC OPERATION "/" DISCOVERED

LINE 73

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
72  require(b > 0, errorMessage);  
73  uint256 c = a / b;  
74  return c;  
75  }  
76  
77
```


SWC-101 | ARITHMETIC OPERATION "%" DISCOVERED

LINE 83

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
82  require(b != 0, errorMessage);
83  return a % b;
84  }
85  }
86
87
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 231

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
230  _decimals = 9;  
231  _totalSupply = _SUPPLY * 10**_decimals;  
232  
233  _buyLiquidityFee = _BUYFEE[0];  
234  _buyMarketingFee = _BUYFEE[1];  
235
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 231

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
230  _decimals = 9;
231  _totalSupply = _SUPPLY * 10**_decimals;
232
233  _buyLiquidityFee = _BUYFEE[0];
234  _buyMarketingFee = _BUYFEE[1];
235
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 249

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
248
249  _txLimitAmount = _LMT[0] * 10**_decimals;
250  _walletLimitAmount = _LMT[1] * 10**_decimals;
251
252  minimumTokensBeforeSwap = _totalSupply.mul(1).div(10000);
253
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 249

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
248
249  _txLimitAmount = _LMT[0] * 10**_decimals;
250  _walletLimitAmount = _LMT[1] * 10**_decimals;
251
252  minimumTokensBeforeSwap = _totalSupply.mul(1).div(10000);
253
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 250

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
249  _txLimitAmount = _LMT[0] * 10**_decimals;
250  _walletLimitAmount = _LMT[1] * 10**_decimals;
251
252  minimumTokensBeforeSwap = _totalSupply.mul(1).div(10000);
253  MarketingWallet = payable(_walletList[0]);
254
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 250

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
249  _txLimitAmount = _LMT[0] * 10**_decimals;  
250  _walletLimitAmount = _LMT[1] * 10**_decimals;  
251  
252  minimumTokensBeforeSwap = _totalSupply.mul(1).div(10000);  
253  MarketingWallet = payable(_walletList[0]);  
254
```

SWC-101 | ARITHMETIC OPERATION "++" DISCOVERED

LINE 345

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
344     require(addresses.length < 201);
345     for (uint256 i; i < addresses.length; ++i) {
346         isExcludedFromFee[addresses[i]] = status;
347     }
348 }
349
```


SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 351

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
350     function setTxLimitAmount(uint256 newValue) external onlyOwner() {  
351         _txLimitAmount = newValue * 10 ** decimals();  
352     }  
353  
354     function enableWalletLimitEnable(bool newValue) external onlyOwner {  
355
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 351

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
350     function setTxLimitAmount(uint256 newValue) external onlyOwner() {  
351         _txLimitAmount = newValue * 10 ** decimals();  
352     }  
353  
354     function enableWalletLimitEnable(bool newValue) external onlyOwner {  
355
```

SWC-101 | ARITHMETIC OPERATION "*" DISCOVERED

LINE 363

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
362 function setWalletLimitAmount(uint256 newValue) external onlyOwner {  
363     _walletLimitAmount = newValue * 10 ** decimals();  
364 }  
365  
366 function setNumTokensBeforeSwap(uint256 newValue) external onlyOwner() {  
367
```

SWC-101 | ARITHMETIC OPERATION "**" DISCOVERED

LINE 363

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
362 function setWalletLimitAmount(uint256 newValue) external onlyOwner {  
363     _walletLimitAmount = newValue * 10 ** decimals();  
364 }  
365  
366 function setNumTokensBeforeSwap(uint256 newValue) external onlyOwner() {  
367
```

SWC-103 | A FLOATING PRAGMA IS SET.

LINE 11

low SEVERITY

The current pragma Solidity directive is `""^0.8.0""`. 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

- QatarWorldCup.sol

Locations

```
10 // SPDX-License-Identifier: MIT
11 pragma solidity ^0.8.0;
12
13 abstract contract Context {
14     function _msgSender() internal view virtual returns (address payable) {
15
```

SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 157

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
156
157 mapping (address => uint256) _balances;
158 mapping (address => mapping (address => uint256)) private _allowances;
159
160
161
```

SWC-108 | STATE VARIABLE VISIBILITY IS NOT SET.

LINE 190

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

- QatarWorldCup.sol

Locations

```
189
190  bool inSwapAndLiquify;
191  bool public swapAndLiquifyEnabled = true;
192  bool public swapAndLiquifyBySmallOnly = false;
193  bool public walletLimitEnable = true;
194
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 233

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
232
233   _buyLiquidityFee = _BUYFEE[0];
234   _buyMarketingFee = _BUYFEE[1];
235   _buyTeamFee = _BUYFEE[2];
236
237
```


SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 234

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
233  _buyLiquidityFee = _BUYFEE[0];
234  _buyMarketingFee = _BUYFEE[1];
235  _buyTeamFee = _BUYFEE[2];
236
237  _sellLiquidityFee = _SELLFEE[0];
238
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 235

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
234  _buyMarketingFee = _BUYFEE[1];
235  _buyTeamFee = _BUYFEE[2];
236
237  _sellLiquidityFee = _SELLFEE[0];
238  _sellMarketingFee = _SELLFEE[1];
239
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 237

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
236
237  _sellLiquidityFee = _SELLFEE[0];
238  _sellMarketingFee = _SELLFEE[1];
239  _sellTeamFee = _SELLFEE[2];
240
241
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 238

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
237  _sellLiquidityFee = _SELLFEE[0];
238  _sellMarketingFee = _SELLFEE[1];
239  _sellTeamFee = _SELLFEE[2];
240
241  _liquidityShare = _SHARE[0];
242
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 239

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
238   _sellMarketingFee = _SELLFEE[1];
239   _sellTeamFee = _SELLFEE[2];
240
241   _liquidityShare = _SHARE[0];
242   _marketingShare = _SHARE[1];
243
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 241

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
240
241  _liquidityShare = _SHARE[0];
242  _marketingShare = _SHARE[1];
243  _teamShare = _SHARE[2];
244
245
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 242

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
241  _liquidityShare = _SHARE[0];  
242  _marketingShare = _SHARE[1];  
243  _teamShare = _SHARE[2];  
244  
245  _totalTaxIfBuying = _buyLiquidityFee.add(_buyMarketingFee).add(_buyTeamFee);  
246
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 243

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
242  _marketingShare = _SHARE[1];  
243  _teamShare = _SHARE[2];  
244  
245  _totalTaxIfBuying = _buyLiquidityFee.add(_buyMarketingFee).add(_buyTeamFee);  
246  _totalTaxIfSelling = _sellLiquidityFee.add(_sellMarketingFee).add(_sellTeamFee);  
247
```


SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 249

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
248
249  _txLimitAmount = _LMT[0] * 10**_decimals;
250  _walletLimitAmount = _LMT[1] * 10**_decimals;
251
252  minimumTokensBeforeSwap = _totalSupply.mul(1).div(10000);
253
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 250

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
249  _txLimitAmount = _LMT[0] * 10**_decimals;
250  _walletLimitAmount = _LMT[1] * 10**_decimals;
251
252  minimumTokensBeforeSwap = _totalSupply.mul(1).div(10000);
253  MarketingWallet = payable(_walletList[0]);
254
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 253

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
252     minimumTokensBeforeSwap = _totalSupply.mul(1).div(10000);  
253     MarketingWallet = payable(_walletList[0]);  
254     TreasuryWallet = payable(_walletList[1]);  
255  
256     IUniswapV2Router02 _uniswapV2Router =  
IUniswapV2Router02(0x7a250d5630B4cF539739dF2C5dAcb4c659F2488D);  
257
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 254

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
253     MarketingWallet = payable(_walletList[0]);
254     TreasuryWallet = payable(_walletList[1]);
255
256     IUniswapV2Router02 _uniswapV2Router =
    IUniswapV2Router02(0x7a250d5630B4cF539739dF2C5dAcb4c659F2488D);
257     uniswapPair = IUniswapV2Factory(_uniswapV2Router.factory())
258
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 346

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
345   for (uint256 i; i < addresses.length; ++i) {  
346       isExcludedFromFee[addresses[i]] = status;  
347   }  
348   }  
349  
350
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 490

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
489     address[] memory path = new address[](2);
490     path[0] = address(this);
491     path[1] = uniswapV2Router.WETH();
492
493     _approve(address(this), address(uniswapV2Router), tokenAmount);
494
```

SWC-110 | OUT OF BOUNDS ARRAY ACCESS

LINE 491

low SEVERITY

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

Source File

- QatarWorldCup.sol

Locations

```
490     path[0] = address(this);  
491     path[1] = uniswapV2Router.WETH();  
492  
493     _approve(address(this), address(uniswapV2Router), tokenAmount);  
494  
495
```

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Sysfixed is a blockchain security certification organization established in 2021 with the objective to provide smart contract security services and verify their correctness in blockchain-based protocols. Sysfixed automatically scans for security vulnerabilities in Ethereum and other EVM-based blockchain smart contracts. Sysfixed a comprehensive range of analysis techniques—including static analysis, dynamic analysis, and symbolic execution—can accurately detect security vulnerabilities to provide an in-depth analysis report. With a vibrant ecosystem of world-class integration partners that amplify developer productivity, Sysfixed can be utilized in all phases of your project's lifecycle. Our team of security experts is dedicated to the research and improvement of our tools and techniques used to fortify your code.