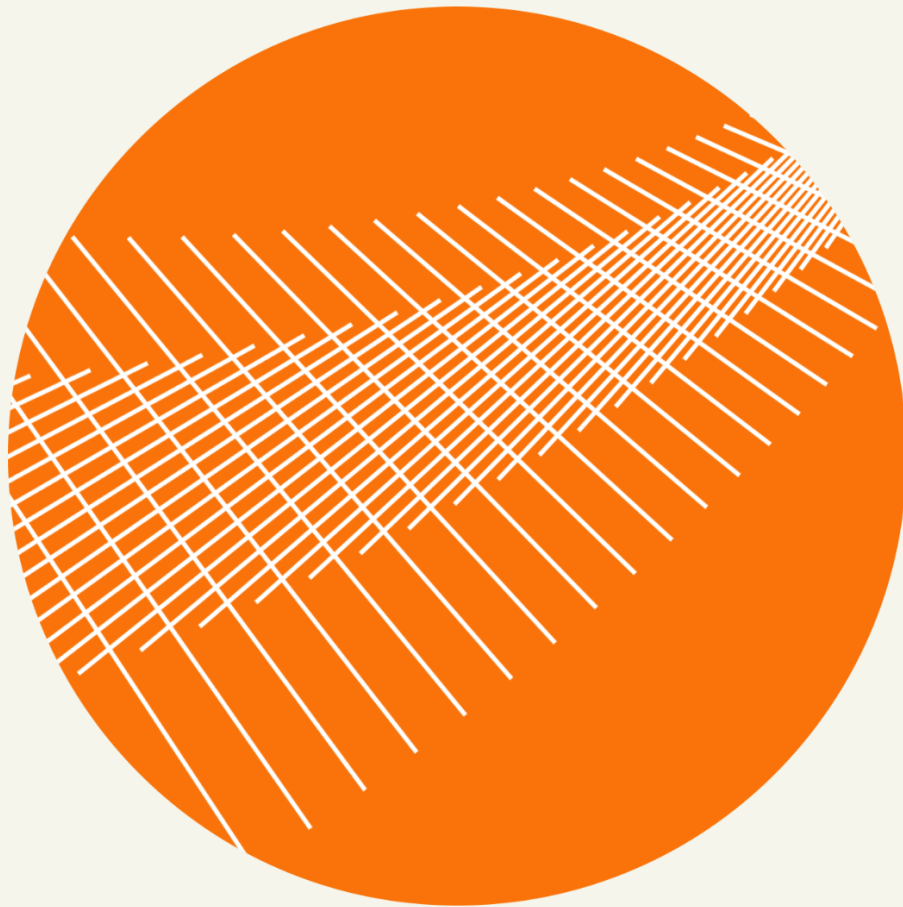


CTDSEC

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TERMS

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Smart contract security audit



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1.0 Introduction

1.1 Project engagement

During March of 2023, Dextools team engaged CTDSec to audit smart contracts that they created. The engagement was technical in nature and focused on identifying security flaws in the design and implementation of the contracts. Dextools provided CTDSec with access to their code repository and all the technical and business information necessary to be able to analyze the complete flow of contracts and back/front end..

The project to be audited consists of a token creator to simplify and secure the creation of tokens. It is made up of a factory which generates a standardized and secured contract following correct security guidelines and forking contracts that have been tested in the past and worked correctly.

Dextools includes a small fee for the creation of the token which is outside the supply (the supply is transferred 100% to the creator) only the creation fee is paid with stablecoins or the token that Dextools chooses.

1.2 Disclaimer

It should be noted that this audit is not an endorsement of the reliability or effectiveness of the contract, rather limited to an assessment of the logic and implementation. In order to ensure a secure contract that's able to withstand the network's fast-paced and rapidly changing environment, we at CTDSec recommend that Dextools team put in place a bug bounty program to encourage further and active analysis of the smart contract.

Being an evolutionary and changing environment, we also recommend monitoring the behavior of all contracts in all evm networks and evaluating future changes that may occur in opcodes of the different networks and whether they may imply any impact.

2.0 Coverage

2.1 Target Code and Revision

For this audit, we performed research, investigation, and review of the Dextools contracts followed by issue reporting, along with mitigation and remediation instructions outlined in this report. The following code files are considered in-scope for the review:

Source file [all files included in the next repo]:

<https://github.com/dextools-io/token-creator-contracts>

Commit: `ecc0bb327bf6ff3f0c7d17730a76234bafac05e1`

2.2 Attacks made to the contract

In order to check for the security of the contract, we tested several attacks in order to make sure that the contract is secure and follows best practices.

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	Front running.	PASSED
6	Timestamp dependence.	PASSED
7	Integer Overflow and Underflow.	PASSED
8	DoS with Revert.	PASSED
9	DoS with block gas limit.	PASSED
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
18	Design Logic.	ACKNOWLEDGE
19	Cross-function race conditions.	PASSED
20	Safe Zeppelin module.	PASSED
21	Fallback function security.	PASSED
22	Overpowered functions / Owner privileges	PASSED

3.0 Security Issues

3.1 High severity issues

No high severity issues were found.

3.2 Medium severity issues [Acknowledge]

1. Token Uniqueness

Contract: TokenFactoryManager.sol

Issue: The assignTokensToOwner function uses the hasToken mapping to check if a token has already been assigned to an owner. If a token is found in the mapping for a specific owner, the function reverts with the TokenAlreadyExists error. However, this mechanism might not be foolproof in all scenarios. For example, it does not account for cases where a token might be transferred and then re-assigned, or other complex interactions that might not be immediately apparent but could lead to unintended duplicate assignments.

Fix: Enhance the uniqueness check to account for various token lifecycle events, not just assignments. This might include tracking token transfers, destruction, creation, and any other state-changing events.

3.3 Low severity issues [Acknowledge]

1. Input validation

Contract: TokenFactoryBase.sol

Issue: The constructor doesn't validate its input parameters, which could lead to setting an incorrect factoryManager.

Fix: Add input validation checks in the constructor to ensure parameters meet addresses are not zero.

3.4 Informational Findings [Acknowledge]

1. Unnecessary use of Safemath

Contract: Antibot.sol

Issue: Solidity 0.8.0 includes built-in overflow protection. The use of SafeMath is redundant.

Fix: Remove the SafeMath library and its usage, as Solidity 0.8.0 handles overflow automatically.

4.0 Testing coverage - python

During the testing phase, custom use cases were written to cover all the logic of contracts in python language. **Check "5 Annexes" to see the testing code.*

Test_baby_token:

```
tests/test_factory_token.py::test_baby_token RUNNING
Transaction sent: 0x38f651d763c4cb7a661060168e6455b7e6d5e0b5048e343e1448341ddc2dcee5
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 37
MockWETH.constructor confirmed Block: 95 Gas used: 501055 (4.18%)
MockWETH deployed at: 0x480FccF53589c1F185B35db88bB315a0bBF9a3e0

Transaction sent: 0xd9bf19a62a7816f36f52c7dfecb50b16dfd367077730cd59ac85782ff24e0
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 38
UniswapV2Factory.constructor confirmed Block: 96 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0xFE0F4Cf81B5c0a6Fd65a610FD9488F33aE9095cB

Transaction sent: 0xd69b255a58019fdb15269b958da2f9b95a0ee2a076151b93f14acb8979103e1c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 39
UniswapV2Router02.constructor confirmed Block: 97 Gas used: 3906858 (32.56%)
UniswapV2Router02 deployed at: 0x4e3E7dC9D84dA7BE8f017f4C36153A61341736d4

Transaction sent: 0x31a82394f2faa9d944cd988167e54d409c7fc395796eb2dfe6f6244b0703f9c5
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 40
MockWETH.constructor confirmed Block: 98 Gas used: 501055 (4.18%)
MockWETH deployed at: 0x0AC45e945A008D3fc19da8f591be8601C1F63130

Transaction sent: 0xb912b161f2a050ae928585b97a97c1024a919139e190a92efbed5b2eef2c036b
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 41
IterableMapping.constructor confirmed Block: 99 Gas used: 323455 (2.70%)
IterableMapping deployed at: 0x5847798CE8c89e3Fff59AE5fA30BEC0d406b5687

Transaction sent: 0x78b6191ed30c265f76e247e266649d95b7787773e09bc01dd397d9145d81e7ac
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 42
BabyTokenDividendTracker.constructor confirmed Block: 100 Gas used: 1939638 (16.16%)
BabyTokenDividendTracker deployed at: 0x0C60536783db9ED5A2B216970B10FF2243d317d

Transaction sent: 0xdcf161839ea4278894b26bd09982612eed2458a361aac4aa21437650d24bab54
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 43
AntiBot.constructor confirmed Block: 101 Gas used: 1001328 (8.34%)
AntiBot deployed at: 0x0e19E87b363DD7a3af5c45C95ab6885367251B94

Transaction sent: 0x3ace9111279e3943ff4bfc8bb76c6874647828f3efd9ab1e3cc1c4a9bc9372
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 44
TokenFactoryManager.constructor confirmed Block: 102 Gas used: 943663 (7.86%)
TokenFactoryManager deployed at: 0xaA7e46855e0506401214c9b1C35f3d889669609e

Transaction sent: 0xf2a13695c76fc0e00941c07d81c0c75bef3ed2ca1723c42cbdbc5cb7e119d808
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 45
BabyToken.constructor confirmed Block: 103 Gas used: 3768840 (31.41%)
BabyToken deployed at: 0xa1910C6e0Fbd0E38cfBabAeC5D1C1D539F81CC63

Transaction sent: 0x68fbb249a5a33d39c5e01a6749d5cdf0e7fd1d6fd8f06a9193e745988fee80f25
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 46
BabyTokenFactory.constructor confirmed Block: 104 Gas used: 910439 (7.59%)
BabyTokenFactory deployed at: 0x8BE16B874F47371C42498b499837Ed87D7661E86

Transaction sent: 0xca432e3d727a3de8e1f6481f8acb2e9df994ed2e738bef715439c6c9e0311219
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 47
TokenFactoryManager.addTokenFactory confirmed Block: 105 Gas used: 85428 (0.71%)

Transaction sent: 0x94d293dcc78016ff13ca8ab8ca2a6948761b1e857d277e68505ecd281d94cd66
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 46
BabyTokenFactory.create confirmed Block: 106 Gas used: 3180722 (26.51%)

Transaction sent: 0x491fdc32e1b5c01d546072ebe5d1d150103f641d09a999f65b368bb774470c96
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 47
Transaction confirmed Block: 107 Gas used: 117925 (0.98%)

Transaction sent: 0x6ebe9e9bee4b58c2aa05db5307aa58e814e84ac5813ef185e0f14399e02e9285
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 48
Transaction confirmed (This address is blacklisted) Block: 108 Gas used: 28885 (0.24%)

Transaction sent: 0x1b049fba90df4d32a86cf7afe9089c65430b618ade9ac6ec799ec755a7cc3226
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 49
Transaction confirmed Block: 109 Gas used: 468349 (3.90%)

Transaction sent: 0xbd7a5318702d4fbd4edd96e641884ea1c3f9c8500eb2443d212c01f65c259f89
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 50
Transaction confirmed Block: 110 Gas used: 37705 (0.31%)

Transaction sent: 0x9701b514fa6e7e4e58af2278cbb29fc3c7113fe3b4dde98fc06ff2e410ddf771
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 51
Transaction confirmed Block: 111 Gas used: 92882 (0.77%)

Transaction sent: 0x36d37a33a365730a75aebca86ca4450102f3ddd812ca4f15fbceb57ad81ffbf4
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 48
AntiBot.setTimeLimit confirmed Block: 112 Gas used: 28489 (0.24%)
```

```

Transaction sent: 0xae068b46afdf7c38386b01eb137ea3e28ea586ed92a9c35410bddf38fa5df1b0
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
AntiBot.updateTokenOwner confirmed (Only the token owner allowed) Block: 115 Gas used: 23281 (0.19%)

Transaction sent: 0x28d4b3d4049b986dd5007d21005498720befabb550e4de9a576dde447fd9c6b0
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 52
AntiBot.updateTokenOwner confirmed Block: 116 Gas used: 30459 (0.25%)

Transaction sent: 0x6e37c8f73cc62409a8c999e48f3d8ccf758a4d75ee13951dc5961dce8694a627
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 2
BabyTokenFactory.create confirmed Block: 117 Gas used: 3165746 (26.38%)

Transaction sent: 0x7676ca0d1805cf329b2b67c7ec08f8e009c38299259bef40714e0867fb5b0e7b
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 3
Transaction confirmed Block: 118 Gas used: 117913 (0.98%)

Transaction sent: 0x767be6d0e201be53b1ae45bfb94884e7299fcd8af09061186474e74001d85
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 4
Transaction confirmed Block: 119 Gas used: 92894 (0.77%)

Transaction sent: 0xc3632c300a2b4495049520224577cf5a055c145cbcd71f592fada431149e3ef8
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 5
Transaction confirmed (Can not perform this operation) Block: 120 Gas used: 29976 (0.25%)

Transaction sent: 0x15acec07f578b6394366e4f7095a8022eb4a969085651429576dea8e27b4d67e
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 6
Transaction confirmed (BabyToken: The marketing wallet cannot be the value of zero) Block: 121 Gas used: 23416 (0.20%)

Transaction sent: 0x47b2afdb7c48f07d98038a510a52e1914665736620a66b45874f5dcc51f37d91
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 7
Transaction confirmed (Marketing wallet cannot be a contract) Block: 122 Gas used: 24409 (0.20%)

Transaction sent: 0x87ecbb631d96ec10bee96d14810a35ee2b4da67ed002e5277b5b3a8732c12bca
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 8
Transaction confirmed Block: 123 Gas used: 30115 (0.25%)

Transaction sent: 0xe3239c1ece606148adb9b4f26917479f6705860c6f7276e4029ee30f82c489d1
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 9
Transaction confirmed (BabyToken: gasForProcessing must be between 200,000 and 500,000) Block: 124 Gas used: 23320 (0.19%)

Transaction sent: 0x65479e7035a20b2f0eec3cf0c467daedd04bb81a7d93ff6a81bf6249065598a0
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 10
Transaction confirmed (BabyToken: Cannot update gasForProcessing to same value) Block: 125 Gas used: 24181 (0.20%)

Transaction sent: 0x27e4bca3ab1d3b36daa77d5441382912a41f84b560bb4a6088a5e2fac34cee49
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 11
Transaction confirmed Block: 126 Gas used: 31363 (0.26%)

Transaction sent: 0xd30f43fc538c838636e2a35e4aeb45a1128f96b5baa0f92cda73badeea07005c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 12
Transaction confirmed (BabyToken: Amount must be greater than 0.001% of total supply) Block: 127 Gas used: 24175 (0.20%)

Transaction sent: 0x77bc872ddd48e812e195e3ee37d39a6d955942b5bb0e6b378bac685a98dd0de
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 13
Transaction confirmed Block: 128 Gas used: 29066 (0.24%)

Transaction sent: 0xbf503403cbaee5065211796dfdd34b63640db3c79058c35a7975c1e4abc3b5a
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 14
Transaction confirmed (Total fee is over 20%) Block: 129 Gas used: 35215 (0.29%)

Transaction sent: 0x985a394cbcef140f0522c67e4efff7b1a51d4b9bcf49b4dfc55c9400ad0886d3
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 15
Transaction confirmed Block: 130 Gas used: 26687 (0.22%)

Transaction sent: 0xa18bdbfe77d769c6c60bbf6bf860e3b7265df5574dd4af50d14d6ebb0a92c8b
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 16
Transaction confirmed Block: 131 Gas used: 46460 (0.39%)

Transaction sent: 0xcf7983b0ef15b44a195d6dbff8c1f46203d0642f5916217d166856d00bf9f96b
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 17
Transaction confirmed (BabyToken: Account is already excluded) Block: 132 Gas used: 24561 (0.20%)

tests/test_factory_token.py::test_baby_token PASSED

```

Test_burn_token:

```
tests/test_factory_token.py::test_burn_token RUNNING
Transaction sent: 0x93b1b0e195c665661a7b82a27f8cf32cd48af014eb92cab3046fee89906d7496
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 5
AntiBot.constructor confirmed Block: 11 Gas used: 1001328 (8.34%)
AntiBot deployed at: 0x6b4BDe1086912A6Cb24ce3d3B43b3466e6c72AFd3

Transaction sent: 0xa6df9fcda5c5bc949a87c3c13ee58e0c554be75dc17d6899a40dc0d7ef4fb2ed
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 6
TokenFactoryManager.constructor confirmed Block: 12 Gas used: 943663 (7.86%)
TokenFactoryManager deployed at: 0x9E4c14403d7d9A8A782044E86a93CAE09D7B2ac9

Transaction sent: 0x639ddea6c658254faebf034c556d1d750e4b0db271100f43fe6b9ca55a7e8b8f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 7
BurnToken.constructor confirmed Block: 13 Gas used: 1582392 (13.19%)
BurnToken deployed at: 0xcCB53c9429d32594F404d01f9e9E65ED1DCda8D9

Transaction sent: 0x55355f9a93b8a8a7d8c2eaae9426fa25807ff291c2f814fa1077d0e6617357c8
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 8
BurnTokenFactory.constructor confirmed Block: 14 Gas used: 847585 (7.06%)
BurnTokenFactory deployed at: 0x420b1099B9eF5baba6D92029594eF45E19A04A4A

Transaction sent: 0xfbf850df2e4c600cbb63fdb33d3c988b1455726291679663915db4b6e7fb3eef
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 9
TokenFactoryManager.addTokenFactory confirmed Block: 15 Gas used: 85428 (0.71%)

Transaction sent: 0x00aec2d0526be8a072175e58695fda2c462fd219a7bf5260efc669b208747c3a
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 5
BurnTokenFactory.create confirmed Block: 16 Gas used: 509470 (4.25%)

Transaction sent: 0x0ec972a23cc29f2c1797388db6fb95e51fef9590eb64e309c3afad36897b7718
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 6
Transaction confirmed Block: 17 Gas used: 68925 (0.57%)

Transaction sent: 0xd282b3f7ab6884e2a346ff57f76736b0b07664021c9e0e961e407782dfcedcc1
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 7
Transaction confirmed Block: 18 Gas used: 117811 (0.98%)

Transaction sent: 0x5a0c7e043c0ba84fb183d5da92a39832a770f0801e58d43b0579c216fe828f2c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 8
Transaction confirmed (This address is blacklisted) Block: 19 Gas used: 28891 (0.24%)

Transaction sent: 0xa3e67034a72ce3807cac1ce0785ce677181e3bdb1e624e572e4f0c0099d6e645
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 10
AntiBot.setAddressLimit confirmed Block: 20 Gas used: 28478 (0.24%)

Transaction sent: 0x9b8abf133842e29d38d40e70b094efb90524bcb9eb32143f360f2550829fa241
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
BurnTokenFactory.create confirmed Block: 21 Gas used: 509470 (4.25%)

Transaction sent: 0x97ed63b25d328fe545b455414308a19fced6a81fd47edbbc02a1269b7a9177a9
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
Transaction confirmed Block: 22 Gas used: 117811 (0.98%)

Transaction sent: 0xd618ef647bd4c1732e747650115e4f93f62eeae0baaa7d227e9850f7209a68b5
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 2
Transaction confirmed (blacklisted more than allowed) Block: 23 Gas used: 87941 (0.73%)

Transaction sent: 0x57c985ffb1183e41620bebdef986b58a3084e001630c8019b50af47733c1f393
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 3
Transaction confirmed Block: 24 Gas used: 27503 (0.23%)

Transaction sent: 0xd4084e391eeede232f2cbb1bb08af7f9e580e418d4ed7944393f263f98ff4144
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 4
Transaction confirmed Block: 25 Gas used: 117823 (0.98%)

Transaction sent: 0x6f9d3f6400cfb31370734b3406d59cdc6b3cf66cd5d80036e16b9a23fc124ec8
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 5
Transaction confirmed (Burn fee is over 15%) Block: 26 Gas used: 28302 (0.24%)

Transaction sent: 0xc77aa047b7281bd201c40f8f625223a721f5a894a4ff45269ee9a4a8200148b5
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 6
Transaction confirmed Block: 27 Gas used: 28174 (0.23%)

tests/test_factory_token.py::test_burn_token PASSED
```

Test_liquidity_buy_sell_fee_token:

```
tests/test_factory_token.py::test_liquidity_buy_sell_fee_token RUNNING
Transaction sent: 0xe668d3a5997f1d637fa71b09b25b3276c8178618ea37af196ebe22dff248a6e7
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 28
  MockWETH.constructor confirmed Block: 69 Gas used: 501055 (4.18%)
  MockWETH deployed at: 0xA95916C3D979400C7443961330b3092510a229Ba

Transaction sent: 0x9dd0a73d19ee78cb08605b7756d93196a6449c8f38b6a9712c52aeffb5965fb
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 29
  UniswapV2Factory.constructor confirmed Block: 70 Gas used: 2412742 (20.11%)
  UniswapV2Factory deployed at: 0x42E8D004c84E6B5Bad559D3b5CE7947AADB9E0bc

Transaction sent: 0xad9cf8e644afb5ee1d3873305971c32c5fb011a1c0009d5beb47784f0436d5dc
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 30
  UniswapV2Router02.constructor confirmed Block: 71 Gas used: 3906858 (32.56%)
  UniswapV2Router02 deployed at: 0xF06D5f5BFFFCB6a52c84cfebc03AD35637728E73

Transaction sent: 0x2dd1cc21c1073e7f9b8e4f042d2bd8f51cf25cd445b9faec6c4579860cc2abe1
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 31
  AntiBot.constructor confirmed Block: 72 Gas used: 1001328 (8.34%)
  AntiBot deployed at: 0x82c83b7f88aef2eD99d4869D547b6ED28e69C8df

Transaction sent: 0x840ee285f67966ddad47c346d9d01743c4e74f8678de342989f52afe6addb686
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 32
  ERC20Mock.constructor confirmed Block: 73 Gas used: 619873 (5.17%)
  ERC20Mock deployed at: 0x724Ca58E1e6e64BFB1E15d7Eec0fe1E5f581c7bd

Transaction sent: 0x578d5e729b1ce8c5c448187fe135f1f505be818f51d419d56cbce17cf24ac3c3
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 33
  TokenFactoryManager.constructor confirmed Block: 74 Gas used: 943663 (7.86%)
  TokenFactoryManager deployed at: 0x34b97ffa01dc0DC959c5f1176273D0de3be914C1

Transaction sent: 0x76f4bc21fe2d806db898d3fd84bd577750ede91c2e0a07827aabf8cf41aaac78
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 34
  LiquidityBuySellFeeToken.constructor confirmed Block: 75 Gas used: 3610900 (30.09%)
  LiquidityBuySellFeeToken deployed at: 0xc830Ad2FDfCC2f368fE5DeC93b1Dc72ecABb3691

Transaction sent: 0xe732eaf7cd59f825ad41344a4a5ca9851550df0176f40a36a27831f78700a925
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 35
  LiquidityBuySellFeeTokenFactory.constructor confirmed Block: 76 Gas used: 924468 (7.70%)
  LiquidityBuySellFeeTokenFactory deployed at: 0xbc8eCccbc89650c3E796e803CB009BF9b898CB359

Transaction sent: 0xf51db67638e20672e9eede7f4340c346d7eb162d1c5edebf6fd8cc04c5a188e4
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 36
  TokenFactoryManager.addTokenFactory confirmed Block: 77 Gas used: 85428 (0.71%)

Transaction sent: 0xcab9c2577ffa0cf721dfa21a56862056188d92467b1e65fe947f958fb8f76d00
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 31
  LiquidityBuySellFeeTokenFactory.create confirmed Block: 78 Gas used: 2853177 (23.78%)

Transaction sent: 0x15dd1b892987a696fb86bd8892a70bcecb9d1e50009735e81e52c17fbb4df75
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 32
  Transaction confirmed Block: 79 Gas used: 117911 (0.98%)

Transaction sent: 0xa7756d8cab2848b1da78fbc6e619bd995d8f487f55314dd4cf90b3a81f28d9f8
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 33
  Transaction confirmed (This address is blacklisted) Block: 80 Gas used: 28882 (0.24%)

Transaction sent: 0x597992013cdda070e2ee8e21f36aed14c2a87e0e880efa50f3c733a1fa528c19
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 34
  Transaction confirmed Block: 81 Gas used: 108342 (0.90%)

Transaction sent: 0x4bedf51941c3492ec2b709380c80c68f70eefcd77634c2c58f4fe2908770431c
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 35
  Transaction confirmed Block: 82 Gas used: 108342 (0.90%)

Transaction sent: 0x101015821658532a1c606b8e162b4ce7b769888d03e76db522ae030dfc370f1a
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
  Transaction confirmed Block: 83 Gas used: 126754 (1.06%)

Transaction sent: 0x12e298a006d45a4fa3dc9bd933bfe84fa2e5bb8756ad0f14cab8ee9b82f0b37e
```

```
Transaction sent: 0x7eb350714494f465ba73aec8e8ca8c3a58a5b44e68ee4e59b23b654e3b130d39
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 40
Transaction confirmed (sell fee is over 20%) Block: 89 Gas used: 53890 (0.45%)

Transaction sent: 0x35264927d901d9eea3b26c7b5946b0385ae708fb7ae55dcc9e7dcf9340c89c56
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 41
Transaction confirmed Block: 90 Gas used: 53784 (0.45%)

Transaction sent: 0xdc1889f188dd55810cb421f177ee10b29ffe9454f8452f261b424c7d1f01c7ec
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 42
Transaction confirmed Block: 91 Gas used: 115096 (0.96%)

Transaction sent: 0x91ec2e0efcf27f083e22d2d8da4aba43848350e1cf9b2734da53c5b04db661ff
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 43
Transaction confirmed (Account is already excluded) Block: 92 Gas used: 25379 (0.21%)

Transaction sent: 0xc802e4ed5c09128d25a2c21c97d121bfc8f9cde6d6821b50d2d393460aeaf45e
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 44
Transaction confirmed Block: 93 Gas used: 27373 (0.23%)

Transaction sent: 0x3a1083976a0022e31dab1138b2401520a851eae059bd1af97bc76fab0e8c2a09
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 45
Transaction confirmed (Account is already included) Block: 94 Gas used: 24463 (0.20%)

tests/test_factory_token.py::test_liquidity_buy_sell_fee_token PASSED
tests/test_factory_token.py::test_buy_token RUNNING
```

Test_liquidity_fee_token:


```
tests/test_factory_token.py::test_liquidity_fee_token RUNNING
Transaction sent: 0x551667748f253fa7815d9e64c7cd9274c68f6529ac4b71d7f974f7d1b2428c36
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 19
MockWETH.constructor confirmed Block: 48 Gas used: 501055 (4.18%)
MockWETH deployed at: 0xDae02e4fE488952cFB8c95177154D188647a0146

Transaction sent: 0xe12aabe9f122cd39cd064064ecf9afbe6fb40d30a3da8bc7e2bf747babf6e931
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 20
UniswapV2Factory.constructor confirmed Block: 49 Gas used: 2412742 (20.11%)
UniswapV2Factory deployed at: 0xdCF93F11ef216cEC9C07fd31d801c9b2b39Afb4

Transaction sent: 0x1e0bb8017550d324bf32a608d20ff4ac25e16ea6d4da932516d6f5cf1cbe792a
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 21
UniswapV2Router02.constructor confirmed Block: 50 Gas used: 3906858 (32.56%)
UniswapV2Router02 deployed at: 0xBcb61491F1859f53438918F1A5aFCA542Af9D397

Transaction sent: 0xed7557db4f2f970e9d1c40f3f780059ec5be8f980a3d8e7e2fc5c83c129735b4
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 22
AntiBot.constructor confirmed Block: 51 Gas used: 1001328 (8.34%)
AntiBot deployed at: 0xD22363efee93190f82b52FCD62B7Dbcb920eF658

Transaction sent: 0x722022b3ab417038d1bbe14817e98b1b8d093e5d7ae5717cceaf12eb37a43ab9
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 23
ERC20Mock.constructor confirmed Block: 52 Gas used: 619873 (5.17%)
ERC20Mock deployed at: 0x4D1B781ce59B8C184F63B99D39d6719A522f46B5

Transaction sent: 0x9067e464381c2f0e104307ac5d5aa6e848f7011ff46816b35ab334b6064523fe
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 24
TokenFactoryManager.constructor confirmed Block: 53 Gas used: 943663 (7.86%)
TokenFactoryManager deployed at: 0xf9C8Cf55f2E520B08d869df7bc76aa3d3ddDF913

Transaction sent: 0x9a21597fb6ae557ea0419dc247a360b04ee868a7b28cf007134b245e1ff7a162
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 25
LiquidityFeeToken.constructor confirmed Block: 54 Gas used: 3472384 (28.94%)
LiquidityFeeToken deployed at: 0x654f70d8442EA18904FA1AD79114f7250F7E9336

Transaction sent: 0xd43577962fab266488a6c84160bf52c712e4706d08915eb5180f4f9e3d322d9e
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 26
LiquidityFeeTokenFactory.constructor confirmed Block: 55 Gas used: 905908 (7.55%)
LiquidityFeeTokenFactory deployed at: 0xAdE61D42dE86f9058386D1D0d739d20C7eAfC43

Transaction sent: 0x9d13f94ce74e74bed8456852317a7083a4a3f2119c224c01317bcd2739646831
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 27
TokenFactoryManager.addTokenFactory confirmed Block: 56 Gas used: 85428 (0.71%)

Transaction sent: 0x058471fdccbc0456bda3d739953ddf8afe2fc14d96c0eba9e527982baa796f7e
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 20
LiquidityFeeTokenFactory.create confirmed Block: 57 Gas used: 2805857 (23.38%)

Transaction sent: 0xb1d22b866c6e47ee64f3cdc232a057852bbea5098d3a57e3f6dd5f479dcd8b44
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 21
Transaction confirmed Block: 58 Gas used: 117811 (0.98%)

Transaction sent: 0xa33c00064aa124eb04c910b82187f93350ed1cca54bc05393c89beb296a1d07c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 22
Transaction confirmed (This address is blacklisted) Block: 59 Gas used: 28914 (0.24%)

Transaction sent: 0xac72b053ae54db853d05e7d5275978507094d2adfb348a811a45c380d9d99e9b
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 23
Transaction confirmed Block: 60 Gas used: 27515 (0.23%)

Transaction sent: 0x91dbdec97a9f50776ee77fc10c194dba81776aaffdfdb2b9055a85396940b1b07
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 24
Transaction confirmed Block: 61 Gas used: 108329 (0.90%)

Transaction sent: 0xc10cff2d5820c4b5347c6176b87861daf89477d6ebaff8d19a4a44c1af82f0c9
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
Transaction confirmed Block: 62 Gas used: 133913 (1.12%)

Transaction sent: 0xbf75ef619d10845545fa13ff52f38c726612004d68508260f68c222183018aee
```

```
Transaction sent: 0xc9a04706c61f40037423d8271da8b2cce67e952a51999174fb423a677af33786
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 30
Transaction confirmed Block: 68 Gas used: 29913 (0.25%)
tests/test_factory_token.py::test_liquidity_fee_token PASSED
```

Test_liquidity_token:

```
tests/test_factory_token.py::test_liquidity_token RUNNING
Transaction sent: 0x367dd269cff5c0e59a1ad38ce4f51987e19b076194720f026299eebb968578a
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 11
  MockWETH.constructor confirmed Block: 28 Gas used: 501055 (4.18%)
  MockWETH deployed at: 0x7a3d735ee6873f17Dbdcab1d51B604928dc10d92

Transaction sent: 0xa47edad5a9a6734b96b93dd304aac72b81b7638550f95e75baea7c3ebe6b2401
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 12
  UniswapV2Factory.constructor confirmed Block: 29 Gas used: 2412742 (20.11%)
  UniswapV2Factory deployed at: 0x2c15A315610Bfa5248E4CbCbd693320e9D8E03Cc

Transaction sent: 0x18a2dc675bcf8585503913adb540fa7fddebc9d253fd05fd05fdbcb2827560cedfe3
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 13
  UniswapV2Router02.constructor confirmed Block: 30 Gas used: 3906858 (32.56%)
  UniswapV2Router02 deployed at: 0xe692Cf21B12e0B2717C4bF647F9768Fa58861c8b

Transaction sent: 0xfa6e030fb796accc3a31bacc92dd95a8997022f46c433145c12a3ad4116ab51
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 14
  AntiBot.constructor confirmed Block: 31 Gas used: 1001328 (8.34%)
  AntiBot deployed at: 0xe65A7a341978d59d40d30FC23F5014FACB4f575A

Transaction sent: 0xf1d485f71ab0096a6104ef0adb76dc5d5cacdaa8fe7244852ba5dc6207946fab
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 15
  TokenFactoryManager.constructor confirmed Block: 32 Gas used: 943663 (7.86%)
  TokenFactoryManager deployed at: 0x30375B532345B01cB8c2AD12541b09E9Aa53A93d

Transaction sent: 0x16478adc0d16a0a07cd92905110a16fe09527e47ef0d4dbaf1eb77c255a22a6a
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 16
  LiquidityToken.constructor confirmed Block: 33 Gas used: 2842388 (23.69%)
  LiquidityToken deployed at: 0x26f15335BB1C6a4C0B660eDd694a0555A9F1cce3

Transaction sent: 0xb2b4df8ade5063b7abbffd8abcc508cee9b2265455c85dd6b8061b8e773eb0c3
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 17
  LiquidityTokenFactory.constructor confirmed Block: 34 Gas used: 851689 (7.10%)
  LiquidityTokenFactory deployed at: 0xFbD588c72B438faD4Cf7cD879c8F730Faa213Da0

Transaction sent: 0xf53ab2dedc1195611f70b2cb9616c9eca4358424e5ba9918333562e8c5b75851
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 18
  TokenFactoryManager.addTokenFactory confirmed Block: 35 Gas used: 85428 (0.71%)

Transaction sent: 0xe9c44448eb56993a80b38349487f6a9a192a48bef8b3bac60d54a96769c6c14d
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 9
  LiquidityTokenFactory.create confirmed Block: 36 Gas used: 2698872 (22.49%)

Transaction sent: 0xe4494a14a88bee7c589903430cabce376545a4037ce6733df6f3b8b6711f4b1e
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 10
  Transaction confirmed Block: 37 Gas used: 117811 (0.98%)

Transaction sent: 0xa61b9bfc88d9d35a77d882cd6d782ff25e7cbe876143d97475202e6e3c28d137
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 11
  Transaction confirmed (This address is blacklisted) Block: 38 Gas used: 28914 (0.24%)

Transaction sent: 0x17 added 98571985306753c01130d39debc8b643e0cd5d951b38c5f2ebdf3c28c3
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 12
  Transaction confirmed Block: 39 Gas used: 27515 (0.23%)

Transaction sent: 0xd9e91a29b1e28ec2168e4e910c599026a3662349c35e5aa7d0681279aac22e23
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 13
  Transaction confirmed Block: 40 Gas used: 99379 (0.83%)

Transaction sent: 0x2ade39e2f780653e2651b965b55f5c5deaaa5d23e004aa92c3989fecb1e15f88
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
  Transaction confirmed Block: 41 Gas used: 119808 (1.00%)

Transaction sent: 0x7a307e58f1f35b85b7940d357ccbfe6935b8681e79d31b85c16215ac29f0abff
  Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 14
  Transaction confirmed Block: 42 Gas used: 114975 (0.96%)
```

Test_standard_token:

```
tests/test_factory_token.py::test_standard_token RUNNING
Transaction sent: 0xef69b8db2a72a3ac040e001151f0378f4fa54d3d47da4736ed74ae68d1d8d4ba
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
AntiBot.constructor confirmed Block: 1 Gas used: 1001328 (8.34%)
AntiBot deployed at: 0x3194cBDC3dbcd3E11a07892e7bA5c3394048Cc87

Transaction sent: 0x9abeeb7a32962c7c3c52c25a8f74b6ae3d8fdfa13e79742477bbca22db7d2b85
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
TokenFactoryManager.constructor confirmed Block: 2 Gas used: 943663 (7.86%)
TokenFactoryManager deployed at: 0x602C71e4DAC47a042Ee7f46E0aee17F94A3bA0B6

Transaction sent: 0x25b8374c7e678668119fd4005d84260d632070ec5ee5d85588dcbac892df030b
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 2
StandardToken.constructor confirmed Block: 3 Gas used: 1400584 (11.67%)
StandardToken deployed at: 0xE7eD6747FaC5360f88a2EFC03E00d25789F69291

Transaction sent: 0xebfeb84a055cb4dc5e0c7b501f7374e9bee659d893660ba911edbaad6d425a5d
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 3
StandardTokenFactory.constructor confirmed Block: 4 Gas used: 836136 (6.97%)
StandardTokenFactory deployed at: 0x6951b58d815043E3F842c1b026b0Fa888Cc2DD85

Transaction sent: 0xb187ef89ab0ce43369679c47d0533c9f302e8bdd7e891095e83fb3f9efbb0371
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 4
TokenFactoryManager.addTokenFactory confirmed Block: 5 Gas used: 85428 (0.71%)

Transaction sent: 0xe71d7d296a54451c68662ab62390a4330d972d1419f527d8fe07a012080ccc1cf
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
StandardTokenFactory.create confirmed Block: 6 Gas used: 489013 (4.08%)

Transaction sent: 0x052f89799f43ad853787b47289d4d7b3683808d23abdb002d57318b1d2eb51cf
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
Transaction confirmed Block: 7 Gas used: 117833 (0.98%)

Transaction sent: 0x5d78901ce92ad1ef0bb34528ffd5ad8d0632a74f0b9a1c84e412f7a7d7d153c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 2
Transaction confirmed (This address is blacklisted) Block: 8 Gas used: 28780 (0.24%)

Transaction sent: 0xe2ddbdc3dd0f33615183b651775d54d415237874128ceee9a197d398c41db5d4
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 3
Transaction confirmed Block: 9 Gas used: 27514 (0.23%)

Transaction sent: 0x0767bfa51f4a06939fec1ef12e78820e4e77b4ef38a82823983343d38baecc9a
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 4
Transaction confirmed Block: 10 Gas used: 57796 (0.48%)

tests/test_factory_token.py::test_standard_token PASSED
```

5.0 Annexes

Testing code provided by our team.

Test factory token.py:

```
From brownie import (  
    reverts,  
    StandardToken,  
    BurnToken,  
    LiquidityToken,  
    LiquidityFeeToken,  
    LiquidityBuySellFeeToken,  
    BabyToken  
)  
  
from brownie.network.contract import Contract  
  
from scripts.helpful_scripts import (  
    ZERO_ADDRESS,  
    get_account,  
    evm_increase_time,  
    get_timestamp  
)
```

```

from scripts.deploy import (

    deploy_WETH,

    deploy_mock_token,

    deploy_antibot,

    deploy_standard_token_factory,

    deploy_burn_token_factory,

    deploy_liquidity_token_factory,

    deploy_router,

    deploy_liquidity_fee_token_factory,

    deploy_liquidity_buy_sell_fee_token_factory,

    deploy_baby_token_dividend,

    deploy_baby_token_token_factory
)

def test_standard_token(only_local):

    #arrange

    owner = get_account(0)

    other_account = get_account(1)

    antibot = deploy_antibot(owner)

    standard_factory = deploy_standard_token_factory(owner)

    tx = standard_factory.create(

        "Test", "TEST", 18, 10000000000,

        antibot.address, True,

```

```

        {"from": other_account, "amount": "1000 gwei"})

    standard_token_addr = tx.events['TokenCreated'][0]['token']

    new_standard_token = Contract.from_abi("StandardToken", standard_token_addr,
StandardToken.abi)

    addr = "0x0d5dFEC1006A2B3782bD01dA484838160FDAFaC2"

    new_standard_token.addToBlacklist([addr], {"from": other_account})

    with reverts():

        tx = new_standard_token.transfer(addr, 1000, {"from": other_account})

    new_standard_token.removeFromBlacklist(addr, {"from": other_account})

    tx = new_standard_token.transfer(addr, 1000, {"from": other_account})

def test_burn_token(only_local):

    #arrange

    owner = get_account(0)

    other_account = get_account(1)

    extra = get_account(2)

    antibot = deploy_antibot(owner)

    burn_factory = deploy_burn_token_factory(owner)

    tx = burn_factory.create(

```

```

    "Test", "TEST", 18, 100000000000, 1500,

    antibot.address, True,

    {"from": other_account, "amount": "1000 gwei"})

    burn_token_addr = tx.events['TokenCreated'][0]['token']

    new_burn_token = Contract.from_abi("BurnToken", burn_token_addr,
    BurnToken.abi)

    tx = new_burn_token.transfer(extra, 1000, {"from": other_account})

    random_account = "0x0d5dFEC1006A2B3782bD01dA484838160FDAFaC2"

    new_burn_token.addToBlacklist([random_account], {"from": other_account})

    with reverts():

        tx = new_burn_token.transfer(random_account, 500, {"from":
other_account})

    tx = antibot.setAddressLimit(1, {"from": owner})

    tx = burn_factory.create(

        "Test", "TEST", 18, 100000000000, 1500,

        antibot.address, True,

        {"from": extra, "amount": "1000 gwei"})

    burn_token_addr = tx.events['TokenCreated'][0]['token']

    new_burn_token = Contract.from_abi("BurnToken", burn_token_addr,
    BurnToken.abi)

    new_burn_token.addToBlacklist([random_account], {"from": extra})

    with reverts():

```



```

new_burn_token.addToBlacklist(["0xEaB66830A2c2C15793DF090d70c8E3E6609a8C5A"],
{"from": extra})

    new_burn_token.removeFromBlacklist(random_account, {"from": extra})

    new_burn_token.addToBlacklist(["0xEaB66830A2c2C15793DF090d70c8E3E6609a8C5A"],
{"from": extra})

    with reverts("Burn fee is over 15%"):

        new_burn_token.setBurnFeePercent(2000, {"from": extra})

new_burn_token.setBurnFeePercent(1000, {"from": extra})

def test_liquidity_token(only_local):

    #arrange

    owner = get_account(0)

    other_account = get_account(1)

    extra_account = get_account(2)

    router = deploy_router(owner)

    antibot = deploy_antibot(owner)

    liquidity_factory = deploy_liquidity_token_factory(owner)

    total_supply, tax_fee, liquidity_fee = 100000000000, 1000, 1000

    tx = liquidity_factory.create(

        "Test", "TEST", total_supply,

        router.address, antibot.address,

        tax_fee, liquidity_fee, True,

```

```

        {"from": other_account, "amount": "1000 gwei"})

liquidity_token_addr = tx.events['TokenCreated'][0]['token']

new_liquidity_token = Contract.from_abi("LiquidityToken",
liquidity_token_addr, LiquidityToken.abi)

#assert

addr = "0x0d5dFEC1006A2B3782bD01dA484838160FDAFaC2"

new_liquidity_token.addToBlacklist([addr], {"from": other_account})

with reverts():

    tx = new_liquidity_token.transfer(addr, 1000, {"from": other_account})

new_liquidity_token.removeFromBlacklist(addr, {"from": other_account})

tx = new_liquidity_token.transfer(addr, 1000, {"from": other_account})

tx = new_liquidity_token.transfer(extra_account, 1000, {"from": addr})

new_liquidity_token.excludeFromReward(extra_account, {"from": other_account})

with reverts("Account is already excluded"):

    new_liquidity_token.excludeFromReward(extra_account, {"from":
other_account})

new_liquidity_token.includeInReward(extra_account, {"from": other_account})

with reverts("Account is already included"):

    new_liquidity_token.includeInReward(extra_account, {"from":
other_account})

```

```

with reverts("Total fee is over 20%"):
    new_liquidity_token.setTaxFeePercent(2000, {"from": other_account})
    new_liquidity_token.setTaxFeePercent(500, {"from": other_account})

def test_liquidity_fee_token(only_local):
    #arrange

    owner = get_account(0)

    other_account = get_account(1)

    marketing_wallet = get_account(2)

    another_account = get_account(3)

    router = deploy_router(owner)

    antibot = deploy_antibot(owner)

    marketing_token = deploy_mock_token(owner)

    liquidity_factory = deploy_liquidity_fee_token_factory(owner)

    total_supply, tax_fee, liquidity_fee, marketing_fee = 100000000000, 1000,
500, 500

    tx = liquidity_factory.create(
        "Test", "TEST", total_supply,
        [router.address, marketing_wallet, marketing_token.address,
antibot.address],
        [tax_fee, liquidity_fee, marketing_fee], True,
        {"from": other_account, "amount": "1000 gwei"})

```

```

liquidity_token_addr = tx.events['TokenCreated'][0]['token']

new_liquidity_token = Contract.from_abi("LiquidityFeeToken",
liquidity_token_addr, LiquidityFeeToken.abi)

addr = "0x0d5dFEC1006A2B3782bD01dA484838160FDAFaC2"

new_liquidity_token.addToBlacklist([addr], {"from": other_account})

with reverts():

    tx = new_liquidity_token.transfer(addr, 1000, {"from": other_account})

new_liquidity_token.removeFromBlacklist(addr, {"from": other_account})

tx = new_liquidity_token.transfer(addr, 1000, {"from": other_account})

tx =
new_liquidity_token.transfer("0x51bD4197E97efC2341EC9E07768b8CCbdeafB0b6", 1000,
{"from": addr})

new_liquidity_token.excludeFromReward(another_account, {"from":
other_account})

with reverts("Account is already excluded"):

    new_liquidity_token.excludeFromReward(another_account, {"from":
other_account})

new_liquidity_token.includeInReward(another_account, {"from": other_account})

with reverts("Account is already included"):

    new_liquidity_token.includeInReward(another_account, {"from":
other_account})

```

```

with reverts("Total fee is over 20%"):
    new_liquidity_token.setTaxFeePercent(2000, {"from": other_account})

new_liquidity_token.setTaxFeePercent(500, {"from": other_account})

def test_liquidity_buy_sell_fee_token(only_local):
    #arrange

    owner = get_account(0)

    other_account = get_account(1)

    marketing_wallet = get_account(2)

    extra_account = get_account(3)

    router = deploy_router(owner)

    antibot = deploy_antibot(owner)

    marketing_token = deploy_mock_token(owner)

    liquidity_factory = deploy_liquidity_buy_sell_fee_token_factory(owner)

    total_supply = 100000000000

    fee_settings = [1000, 1000, 0]

    buy_fee_settings = [200, 200, 0]

    sell_fee_settings = [500, 500, 0]

    tx = liquidity_factory.create(
        "Test", "TEST", total_supply,
        [router.address, marketing_wallet, marketing_token.address,
        antibot.address],

```

```

    fee_settings, buy_fee_settings, sell_fee_settings, True,
    {"from": other_account, "amount": "1000 gwei"})

liquidity_token_addr = tx.events['TokenCreated'][0]['token']

new_liquidity_token = Contract.from_abi("LiquidityBuySellFeeToken",
liquidity_token_addr, LiquidityBuySellFeeToken.abi)

uniswap_pair = new_liquidity_token.uniswapV2Pair()

random_addr = "0xe3a78e5BF04FB02634bF66cCa4418402782FCdb5"

new_liquidity_token.addToBlacklist([random_addr], {"from": other_account})

with reverts():

    tx = new_liquidity_token.transfer(random_addr, 1000, {"from":
other_account})

    tx = new_liquidity_token.transfer(extra_account, 1000, {"from":
other_account}) # no fees owner

    tx = new_liquidity_token.transfer(uniswap_pair, 1000, {"from":
other_account}) # no fees from owner

    tx = new_liquidity_token.transfer(extra_account, 1000, {"from":
uniswap_pair}) # fees buy

    tx = new_liquidity_token.transfer(uniswap_pair, 1000, {"from":
extra_account}) # fee sell

with reverts("fee is over 20%"):

    new_liquidity_token.updateFees(1000, 1000, 1000, {"from": other_account})

    new_liquidity_token.updateFees(500, 500, 500, {"from": other_account})

```

```

    with reverts("buy fee is over 20%"):
        new_liquidity_token.updateBuyFees(2000, 500, 500, {"from":
other_account})

        new_liquidity_token.updateBuyFees(500, 500, 500, {"from": other_account})

    with reverts("sell fee is over 20%"):
        new_liquidity_token.updateSellFees(100, 100, 2000, {"from":
other_account})

        new_liquidity_token.updateSellFees(200, 300, 400, {"from": other_account})

        new_liquidity_token.excludeFromReward(extra_account, {"from": other_account})

    with reverts("Account is already excluded"):
        new_liquidity_token.excludeFromReward(extra_account, {"from":
other_account})

        new_liquidity_token.includeInReward(extra_account, {"from": other_account})

    with reverts("Account is already included"):
        new_liquidity_token.includeInReward(extra_account, {"from":
other_account})

def test_baby_token(only_local):
    #arrange

    owner = get_account(0)

    other_account = get_account(1)

```

```

marketing_wallet = get_account(2)

extra_account = get_account(3)

new_marketing_wallet = get_account(4)

router = deploy_router(owner)

reward = deploy_WETH(owner)

dividend = deploy_baby_token_dividend(owner)

antibot = deploy_antibot(owner)

baby_token_factory = deploy_baby_token_token_factory(owner)

total_supply = 100000000000

addrs = [reward.address, router.address, marketing_wallet, dividend.address,
antibot.address] #reward, router, marketing wallet, antibot

feeSettings = [5,5,10] # rewards, liquidity, marketing

tx = baby_token_factory.create(
    "Test", "TEST", total_supply,
    addrs, feeSettings, total_supply * 0.1, True,
    {"from": other_account, "amount": "1000 gwei"})

baby_token_addr = tx.events['TokenCreated'][0]['token']

new_baby_token = Contract.from_abi("BabyToken", baby_token_addr,
BabyToken.abi)

```



```

new_baby_token.addToBlacklist([extra_account], {"from": other_account})

with reverts():

    tx = new_baby_token.transfer(extra_account, 1000, {"from":
other_account})

addr = "0x0d5dFEC1006A2B3782bD01dA484838160FDAFaC2"

blacklisted = [

    "0x9EFc4f8607EA8F6332D862A04AB5Cee16E879CE8",

    "0x2AD89FFb5a838857F048ba3fded360eD92F22f24",

    "0x3330243FBE86b19cC4215E3a656c8a60eC3BFbE9",

    "0x61Ce75aCdBc42C7431a06398Edaf577fAA1Bd9c0",

    "0x57795cb5466Ac57B1cfd895BebE8Bed68Bc6E79c",

    "0x789c6bb1431BF2Aace5fd799FdE154A98525A5b6",

    "0xafAe9205Da4586a6254a9bCDf3375a138A2ee542",

    "0x1ae76254976F38d5C8D652349FA5F318593D7521",

    "0x12a1142248DbadFBe8F9bE370Bd2cEA3868cfa4A",

]

new_baby_token.addToBlacklist(blacklisted, {"from": other_account})

new_baby_token.removeFromBlacklist(extra_account, {"from": other_account})

tx = new_baby_token.transfer(addr, 1000, {"from": other_account})

# test antibot

antibot.setTimeLimit(259200, {"from": owner}) # set 3 days

```

```

with reverts("time limit must be less or equal 10 days"):
    antibiot.setTimeLimit(259200 * 4, {"from": owner}) # set 12 days

with reverts("time limit must be greater or equal 1 day"):
    antibiot.setTimeLimit(100, {"from": owner}) # set 100 seconds

with reverts("Only the token owner allowed"):
    antibiot.updateTokenOwner(baby_token_addr, extra_account, {"from":
extra_account})

    antibiot.updateTokenOwner(baby_token_addr, extra_account, {"from":
other_account})

tx = baby_token_factory.create(
    "Test2", "TEST2", total_supply,
    addr, feeSettings, total_supply * 0.1, True,
    {"from": extra_account, "amount": "1000 gwei"})

baby_token_addr = tx.events['TokenCreated'][0]['token']
new_baby_token = Contract.from_abi("BabyToken", baby_token_addr,
BabyToken.abi)

new_baby_token.addToBlacklist([addr], {"from": extra_account})

three_days = get_timestamp(3)
evm_increase_time(three_days)

tx = new_baby_token.transfer(other_account, 1000, {"from": extra_account})

with reverts():
    new_baby_token.removeFromBlacklist(addr, {"from": extra_account})

```

```

with reverts("BabyToken: The marketing wallet cannot be the value of zero"):
    new_baby_token.setMarketingWallet(ZERO_ADDRESS, {"from": extra_account})

with reverts("Marketing wallet cannot be a contract"):
    new_baby_token.setMarketingWallet(reward.address, {"from":
extra_account})

    new_baby_token.setMarketingWallet(new_marketing_wallet, {"from":
extra_account})

with reverts("BabyToken: gasForProcessing must be between 200,000 and
500,000"):
    new_baby_token.updateGasForProcessing(100, {"from": extra_account})

with reverts("BabyToken: Cannot update gasForProcessing to same value"):
    new_baby_token.updateGasForProcessing(300000, {"from": extra_account})
    new_baby_token.updateGasForProcessing(200000, {"from": extra_account})

with reverts():
    new_baby_token.setSwapTokensAtAmount(1, {"from": extra_account})
    new_baby_token.setSwapTokensAtAmount(total_supply * 0.2, {"from":
extra_account})

with reverts("Total fee is over 20%"):
    new_baby_token.setTokenRewardsFee(20, {"from": extra_account})
    new_baby_token.setTokenRewardsFee(5, {"from": extra_account})

```

```
new_baby_token.excludeFromFees(new_marketing_wallet, {"from": extra_account})  
  
with reverts("BabyToken: Account is already excluded"):  
  
    new_baby_token.excludeFromFees(new_marketing_wallet, {"from":  
extra_account})
```

6.0 Summary of the audit

The contracts follow good code practices, despite this medium vulnerabilities are identified which must be checked prior to deployment. Regarding low and informational vulnerabilities, they should not imply a risk for operations, but we continue to recommend their review and evaluation to propose improvements. From our side we will help with any questions or resolution for all the vulnerabilities presented in the report.

Update: The development team has reviewed all the vulnerabilities and confirms that the medium vulnerability will not affect the usability of the factory contract in the current scenarios, it will not generate errors since the risk exposure will be reduced.

Vulnerability Level	Total	Pending	Not Apply	Acknowledged	Resolved
High	0				
Medium	1			1	
Low	1			1	
Informational	1			1	