

# Assure DeFi<sup>®</sup>

THE VERIFICATION **GOLD STANDARD**



## Security Assessment

**Coincreate**



Date: 01/11/2024

Audit Status: FAIL

Audit Edition: Advanced

# Risk Analysis

## Vulnerability summary

Classification	Description
● High	High-level vulnerabilities can result in the loss of assets or manipulation of data.
● Medium	Medium-level vulnerabilities can be challenging to exploit, but they still have a considerable impact on smart contract execution, such as allowing public access to critical functions.
● Low	Low-level vulnerabilities are primarily associated with outdated or unused code snippets that generally do not significantly impact execution, sometimes they can be ignored.
● Informational	Informational vulnerabilities, code style violations, and informational statements do not affect smart contract execution and can typically be disregarded.

## Executive Summary

According to the Assure assessment, the Customer's smart contract is **Poorly Secured**.

Insecure

**Poorly Secured**

Secured

Well Secured

# Scope

## Target Code And Revision

For this audit, we performed research, investigation, and review of the Coincreate contracts followed by issue reporting, along with mitigation and remediation instructions outlined in this report.

## Target Code And Revision

<b>Project</b>	Assure
<b>Language</b>	Solidity
<b>Codebase</b>	CoinCreate 5 contracts.zip [SHA256]: <a href="#">7122ef1f7cf985704316de8c802e9594f6c81f9a2266e1d54806237146681e04</a>
<b>Audit Methodology</b>	NFTFlat.sol [SHA256] <a href="#">77128bedd3c476fa194c101ddad151f7af6c2a868753262d09ce2d2ea181b8f</a>

# 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.

Category	Item
Code review & Functional Review	<ul style="list-style-type: none"><li>• Compiler warnings.</li><li>• Race conditions and Reentrancy.</li><li>• Cross-function race conditions.</li><li>• Possible delays in data delivery.</li><li>• Oracle calls.</li><li>• Front running.</li><li>• Timestamp dependence.</li><li>• Integer Overflow and Underflow.</li><li>• DoS with Revert.</li><li>• DoS with block gas limit.</li><li>• Methods execution permissions.</li><li>• Economy model.</li><li>• Private user data leaks.</li><li>• Malicious Event log.</li><li>• Scoping and Declarations.</li><li>• Uninitialized storage pointers.</li><li>• Arithmetic accuracy.</li><li>• Design Logic.</li><li>• Cross-function race conditions.</li><li>• Safe Zeppelin module.</li><li>• Fallback function security.</li><li>• Overpowered functions / Owner privileges</li></ul>

# AUDIT OVERVIEW



HIGH

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No high severity issues were found.



MEDIUM

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## **1. Insufficient Balance Check in transfer() and erc20TransferFrom()**

**Contract:** ERC404

**Function:** transfer(), erc20TransferFrom()

**Issue:** Attempting to send more tokens than the current balance can result in unexpected contract behavior, potentially causing the contract to become unresponsive.

**Recommendation:** Introduce a require statement to ensure that from.balance is greater than or equal to value\_.

## **2. Gas Exhaustion Risk in getERC721TokensInQueue()**

**Contract:** ERC404

**Function:** getERC721TokensInQueue()

**Issue:** A high value for count\_ can lead to gas exhaustion during execution.

**Recommendation:** Implement a require statement to impose a limit on count\_, preventing gas depletion.

## **3. Incorrect Minting Logic in mint()**

**Contract:** ERC404\_V2

**Function:** mint()

**Issue:** The function only mints one ERC20 token, even if a higher mintPrice is provided.

**Recommendation:** Require that the exact amount is sent in msg.value, or return any excess amount.

## **4. Incorrect Minting Logic in safeMint()**

**Contract:** NFT

**Function:** safeMint()

**Issue:** The function only mints one token, even if a higher mintPrice is provided.

**Recommendation:** Require that the exact amount is sent in msg.value, or return any excess amount.



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### **1. Initial Supply Exceeds Maximum Supply in constructor()**

**Contract:** ERC404\_V2

**Function:** constructor()

**Issue:** The initialSupply\_ parameter can be greater than max\_supply.

**Recommendation:** Implement a require() statement to ensure that maxSupply\_ is greater than or equal to initialSupply\_.

### **2. Zero Address Acceptance in mint()**

**Contract:** ERC404\_V2

**Function:** mint()

**Issue:** The to address can be zero, leading to invalid transactions.

**Recommendation:** Add a require() statement to verify that the to address is not the zero address.

### **3. Zero Address Acceptance in safeMint()**

**Contract:** NFT

**Function:** safeMint()

**Issue:** The to address can be zero, leading to invalid transactions.

**Recommendation:** Add a require() statement to ensure that the to address is not the zero address.



## INFORMATIONAL

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### **1. Lack of Clarity in Vesting Schedule Checks in `onlyIfVestingScheduleNotRevoked()`**

**Contract:** TokenVesting

**Function:** `onlyIfVestingScheduleNotRevoked()`

**Issue:** The function currently lacks a clear error message when the vesting schedule is revoked.

**Recommendation:** Add a descriptive message to the `require()` statement for better clarity.

### **2. Absence of Token Recovery Mechanism**

**Contract:** SToken

**Function:** N/A

**Issue:** The contract lacks a function to recover tokens that have become stuck.

**Recommendation:** Implement a function to facilitate the recovery of stuck tokens.

### **3. Enhance Traceability in `setMintPrice()`**

**Contract:** NFT

**Function:** `setMintPrice()`

**Issue:** The function currently does not provide traceability for changes to the mint price.

**Recommendation:** Emit an event whenever the mint price is updated to enhance contract traceability.

# Testing coverage

During the testing phase, custom use cases were written to cover all the logic of contracts. [\\*Check Annexes](#) to see the testing code.

## Coincreate contract tests:

### Test btoken:

```
tests/test_btoken.py::test_burn RUNNING
Transaction sent: 0x90d13fc1fc76df2fb70464b27d2dbb5cbfebc7339429bf23815e722afed7ec
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
  BTToken.constructor confirmed  Block: 1  Gas used: 1554390 (12.95%)
  BTToken deployed at: 0x3194cBDC3dbc3Ella07892e7bA5c3394048Cc87

Transaction sent: 0x3f6b04f113699ef1cc831d8b4e48ecb7cell182f940e07672601c925108bf6f4
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
  BTToken.burn confirmed (Burn amount must be greater than zero)  Block: 2  Gas used: 21601 (0.18%)

Transaction sent: 0x67f3694d0cblaall14464fc003ae9400e00ec4a64840133ecc2fd2fa341aaeae6
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 1
  BTToken.burn confirmed (Insufficient balance)  Block: 3  Gas used: 24609 (0.21%)

Transaction sent: 0xb1d7e257d24c31603fb184f489082c9ced612e9c26c9f1f8c1327bb2fc19f7a8
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 1
  BTToken.transfer confirmed  Block: 4  Gas used: 53120 (0.44%)

Transaction sent: 0x7d34a45139cb45a98e9ff2d9064bdd9f05eb8801e3318016543cb485c9c5f154
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 2
  BTToken.burn confirmed  Block: 5  Gas used: 43883 (0.37%)

tests/test_btoken.py::test_burn PASSED
tests/test_btoken.py::test_set_trusted_forwarder RUNNING
Transaction sent: 0xc4c052aeeb07f5f9a5e5aeba2a8e99b5199dbf7d0e45ea3a28d32b17c08e0f01
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 2
  BTToken.constructor confirmed  Block: 6  Gas used: 1554390 (12.95%)
  BTToken deployed at: 0xE7eD6747FaC5360f88a2EFC03E00d25789F69291

Transaction sent: 0xde81e14a61c3a35e392ced13e16fc528d00e2aa24d0b83e3b6b11d03a5ad0cb6
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
  BTToken.setTrustedForwarder confirmed (reverted)  Block: 7  Gas used: 26804 (0.22%)

Transaction sent: 0x0fbcc62aaa212d929b130e1d2a60f6a5661a9044e8876b2b7f5d40e948dae2ede
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
  BTToken.setTrustedForwarder confirmed (Trusted Forwarder address cannot be the zero address)  Block: 8  Gas used: 24632 (0.21%)

Transaction sent: 0xed5589f18b244636fb47ad33b319f2f449afc4ebd7e32a046e49b5fb2d92db52
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 4
  BTToken.setTrustedForwarder confirmed  Block: 9  Gas used: 32614 (0.27%)

tests/test_btoken.py::test_set_trusted_forwarder PASSED
tests/test_btoken.py::test_set_token_uri RUNNING
Transaction sent: 0x68d6a220afeb90d87b29a2c90a9de80fdfel0cc98f435bfb0beed35d9ada4b0e
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 5
  BTToken.constructor confirmed  Block: 10  Gas used: 1554390 (12.95%)
  BTToken deployed at: 0x6b48De1086912A6Cb24ce3dB43b3466e6c72AFd3

Transaction sent: 0x434ebb09d87390e3cd3cbdd52d9bb9847bef9be153f1241fa768a7ecc203e09
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 4
  BTToken.setTokenURI confirmed (reverted)  Block: 11  Gas used: 27211 (0.23%)

Transaction sent: 0x0a5840e44e8dc58427f7e92478d12bledefaabab2dc99244300c95920c0204fd
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 6
  BTToken.setTokenURI confirmed  Block: 12  Gas used: 34048 (0.28%)

tests/test_btoken.py::test_set_token_uri PASSED
```

## Test Erc404:

```
tests/test_erc404.py::test_mint RUNNING
Transaction sent: 0x3fc987ce34b46defa2a8740f7c426560076b6a6a00a596b403cc9b02ddf9105
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
ERC404_V2.constructor confirmed Block: 1 Gas used: 2958107 (24.65%)
ERC404_V2 deployed at: 0x3194cBDC3dbc3Ella07892e7bA5c3394048Cc87

Transaction sent: 0x6c7f180915df1233a4899858483d985b007257832e27e299b03176c758d94a23
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
ERC404_V2.mint confirmed (Max supply reached) Block: 2 Gas used: 28593 (0.24%)

Transaction sent: 0x5e62fecde23b63762f146c4ef0fb7b083914f4476908757ce9fcc8f239509be2
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
ERC404_V2.constructor confirmed Block: 3 Gas used: 2958215 (24.65%)
ERC404_V2 deployed at: 0x602C71e4DAC47a042Ee7f46E0aee17F94A3bA0B6

Transaction sent: 0x88d7316625752d88c2ee0596d82a3e727e8d0c5c82813ba59d83bd301deb6260
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 1
ERC404_V2.mint confirmed (Mint price value sent is not correct) Block: 4 Gas used: 29447 (0.25%)

Transaction sent: 0x9eef9d8a8766e7dd2c5e353a4634727ee92199dc5074f9a6f8e16ca4fa83931
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 2
ERC404_V2.mint confirmed Block: 5 Gas used: 170574 (1.42%)

Transaction sent: 0xd5092ba9293b3a6becbb489829a7ae8bf47c3e829d912f8ac8ea51adb12d495c
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 0
ERC404_V2.mint confirmed Block: 6 Gas used: 155562 (1.30%)

Transaction sent: 0xb0fab61ea3e264a13f0f9594f2b373cf4927d6c26a1fc6337366cd5367858146
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 3
ERC404_V2.transfer confirmed Block: 7 Gas used: 64226 (0.54%)

Transaction sent: 0x5de7ed512e93048dba3c96c9751aaefd351cbecc81b9060b7de2a47ebc2e2425d
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 4
ERC404_V2.transfer confirmed Block: 8 Gas used: 78404 (0.65%)

tests/test_erc404.py::test_mint PASSED
tests/test_erc404.py::test_set_mint_price RUNNING
Transaction sent: 0x61b8b83a50d1b37073d80b28ee4c7e4f841af00a061d72450e195acd5402bd55
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 2
ERC404_V2.constructor confirmed Block: 9 Gas used: 2958215 (24.65%)
ERC404_V2 deployed at: 0xE7eD6747FaC5360f88a2EFC03E00d25789F69291

Transaction sent: 0x0fc290dcbab7c593fea9c5b62a4707025e6367621896e815ea1e879b90686f352
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 5
ERC404_V2.setMintPrice confirmed (OwnableUnauthorizedAccount: 0x33a4622b82d4c04a53e170c638b944ce27cffce3) Block: 10 Gas used: 22520 (0.19%)

Transaction sent: 0x26e14b7ba4ec50b9dde3280e7f758fe92e926e27e7b9784222accb326be01af
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 3
ERC404_V2.setMintPrice confirmed Block: 11 Gas used: 28527 (0.24%)

tests/test_erc404.py::test_set_mint_price PASSED
tests/test_erc404.py::test_set_erc721_transfer_exempt RUNNING
Transaction sent: 0x780a8d2321d2f957d87a50cela710967b7c80137836fe749224aab7alleba479
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 4
ERC404_V2.constructor confirmed Block: 12 Gas used: 2958215 (24.65%)
ERC404_V2 deployed at: 0xe0aA552A10d7EC8760Fc6c246D391E698a82d0f9

Transaction sent: 0x1afca5ea2dfa291756b96f0f30fa6f729e25aae9be6f85340b779a6778ab13cf
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 6
ERC404_V2.setErc721TransferExempt confirmed (OwnableUnauthorizedAccount: 0x33a4622b82d4c04a53e170c638b944ce27cffce3) Block: 13 Gas used: 23010 (0.19%)

Transaction sent: 0x41316fa09e03cbdd5358dc1002bc4fdd01537493573dfe680913f7eca85e31e5
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 5
ERC404_V2.setErc721TransferExempt confirmed Block: 14 Gas used: 44934 (0.37%)

Transaction sent: 0xb0f542b110faec9c3665d57cc864e60bcf3f8f4b8cc1489c010584c9841b7b8f
Gas price: 0.0 gwei Gas limit: 12000000 Nonce: 6
ERC404_V2.setErc721TransferExempt confirmed Block: 15 Gas used: 15966 (0.13%)

tests/test_erc404.py::test_set_erc721_transfer_exempt PASSED
```

## Test NFT Flat:

```
tests/test_nft_flat.py::test_safe_mint RUNNING
Transaction sent: 0xc89f749f90c0c3afdf2dd0db436040919030d2ff563f67196d43c35cada17efb
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
    NFT.constructor confirmed (Royalty value should be less than 20%)  Block: 1  Gas used: 306931 (2.56%)

Transaction sent: 0x6f4e5be450ffccf4c76e0dba240cc449de329fe4e3f32f507a5a59abe370c7c8
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 1
    NFT.constructor confirmed  Block: 2  Gas used: 1965681 (16.38%)
    NFT deployed at: 0x602C71e4DAC47a042Ee7f46E0aae17F94A3bA0B6

Transaction sent: 0x5973390e7c6928665668118a13931ef4573e14517ae1faf5c618683c809d9f75
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
    NFT.safeMint confirmed (Max supply reached)  Block: 3  Gas used: 29414 (0.25%)

Transaction sent: 0x4d3cf7d31523f821e9825cle6ed1571b84c4b53a2ecd84cfb5d966eb1e96148b
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 2
    NFT.constructor confirmed  Block: 4  Gas used: 1984917 (16.54%)
    NFT deployed at: 0xE7eD6747FaC5360f88a2EFC03E00d25789F69291

Transaction sent: 0x617867931c07aa1e7e5fbe134b66821a9a999ceb39c492c4be5075710f5522e8
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 1
    NFT.safeMint confirmed (Mint price value sent is not correct)  Block: 5  Gas used: 30257 (0.25%)

Transaction sent: 0x5990f0e273c208c8c2ec823451d98e0eabf7c4492a5ea5f113de58f7c2f30f7f
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 2
    NFT.safeMint confirmed  Block: 6  Gas used: 204924 (1.71%)

Transaction sent: 0x24465169780f780ffb06367f26af91f136d78f5da0f5e74c0b5560eae3646f6a
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
    NFT.safeMint confirmed  Block: 7  Gas used: 194112 (1.62%)

Transaction sent: 0x99cf657e72edfc7b8f15f5b6d66e2861091fdda125a0f6a9c1be6d6aa80a14aa
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
    NFT.safeTransferFrom confirmed  Block: 8  Gas used: 65719 (0.55%)

tests/test_nft_flat.py::test_safe_mint PASSED
tests/test_nft_flat.py::test_set_mint_price RUNNING
Transaction sent: 0x51b72b105291e5c1c27c34c5ef4d8b9680fc3e3c9772bd89c3190efa4f6cdb97
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
    NFT.constructor confirmed  Block: 9  Gas used: 1984917 (16.54%)
    NFT deployed at: 0x6951b5Bd815043E3F842c1b026b0Fa888Cc2DD85

Transaction sent: 0x8316740c5d82a2f9efff72084fef503598dcacb5c489577ed63faa29238ee205
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 4
    NFT.setMintPrice confirmed (reverted)  Block: 10  Gas used: 22520 (0.19%)

Transaction sent: 0x37474b22f7cleafffb4e67e68895828f816e8d9d80fb2d9edb1428ba96f20a0b
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 4
    NFT.setMintPrice confirmed  Block: 11  Gas used: 27462 (0.23%)

tests/test_nft_flat.py::test_set_mint_price PASSED
tests/test_nft_flat.py::test_set_base_uri RUNNING
Transaction sent: 0x30daae3d3c1e504b96697a3dc37089c36aba172d25a724274c2de90a09af21c0
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 5
    NFT.constructor confirmed  Block: 12  Gas used: 1984917 (16.54%)
    NFT deployed at: 0x6b4BDe1086912A6Cb24ce3dB43b3466e6c72AFd3

Transaction sent: 0x829ebbebc41eadc1695499a4654424701e2ff5e7accc271783260c1d61f8c1b3
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 5
    NFT.setBaseURI confirmed (reverted)  Block: 13  Gas used: 23130 (0.19%)

Transaction sent: 0xa6649781553b3acfa7967acd9dc49692b87da4a1e049fb6147fb4f14a676b0b
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 6
    NFT.setBaseURI confirmed  Block: 14  Gas used: 29346 (0.24%)

tests/test_nft_flat.py::test_set_base_uri PASSED
```

**Test NFT Staking:**

```
tests/test_nft_staking.py::test_stake RUNNING
Transaction sent: 0xbe71255bb3873e2191103938d36bb5d59dbade090d61ce7901b3b3b47e9f1943
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 0
    NFT.constructor confirmed    Block: 1    Gas used: 1984929 (16.54%)
    NFT deployed at: 0x3194cBDC3dbc3E11a07892e7bA5c3394048Cc87

Transaction sent: 0x0ff0980421cfac6ac03e760c8bebec43ade695d9b96a6d27895734b1823790a7
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 1
    ERC20Mock.constructor confirmed    Block: 2    Gas used: 523834 (4.37%)
    ERC20Mock deployed at: 0x602C71e4DAC47a042Ee7f46E0aaee17F94A3bA0B6

Transaction sent: 0x4115b3fa1c605e2f3ade2847cf6b070c412dc7d201635a8d4bb39e1e163c9027
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 2
    NFTStaking.constructor confirmed    Block: 3    Gas used: 1031839 (8.60%)
    NFTStaking deployed at: 0xE7eD6747FaC5360f88a2EFC03E00d25789F69291

Transaction sent: 0x9339e4b70868399d13883ab533f2fd5eb3cb7b93aa724b97c8920aba2c0f4019
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 0
    NFT.safeMint confirmed    Block: 4    Gas used: 204924 (1.71%)

Transaction sent: 0xadfdada62939b102e88ead391fa581b5cfb9bb09aeaaaedd5d7de4f8afb19dbf12
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 1
    NFT.approve confirmed    Block: 5    Gas used: 46035 (0.38%)

Transaction sent: 0x6e8d577d9bc9d7fa8ee7a5e09073d5a2d1b85dc4485d39146b4eb961d3eee1d5
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 2
    NFTStaking.stake confirmed    Block: 6    Gas used: 199217 (1.66%)

Transaction sent: 0xala6a92f2e28d8a58ebdf5c76686a0bb68a23696elccf4b09d5d0c33499305e9
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 3
    NFTStaking.stake confirmed (Not token owner)    Block: 7    Gas used: 45124 (0.38%)

Transaction sent: 0xfad0383362ee78c872835e81c0635ed2b784bf19eef947b2fd4a89982c9dea4
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 4
    NFT.safeMint confirmed    Block: 8    Gas used: 194124 (1.62%)

Transaction sent: 0x2617197d1a202cadd0c4eea036155a59e8351e04037e59a7448738da8e7a3429
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 5
    NFTStaking.stake confirmed (Max stake limit reached)    Block: 9    Gas used: 46809 (0.39%)

Transaction sent: 0xb005ff814de518d92837c47793121c64bec546dae96e20f4a10790f6500386ff
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 0
    NFT.safeMint confirmed    Block: 10    Gas used: 194112 (1.62%)

Transaction sent: 0x93f8631c1ca14c8a66d4e667b3aa633b8e480bff1386fcab428b079c35c9d714
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 1
    NFT.approve confirmed    Block: 11    Gas used: 46035 (0.38%)

Transaction sent: 0x2c43a5e41a41c52c01b88e9fd2be48220ac6b06b7b44f4086f47b75a66fcf358
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 2
    NFTStaking.stake confirmed    Block: 12    Gas used: 173157 (1.44%)

tests/test_nft_staking.py::test_stake PASSED
```

```
tests/test_nft_staking.py::test_withdraw RUNNING
Transaction sent: 0x0485f2e3dd4e9427b625c49c4f65545bd6942b3956e872cf83a1f03a6384cd1f
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
    NFT.constructor confirmed  Block: 13  Gas used: 1984929 (16.54%)
      NFT deployed at: 0x6951b5Bd815043E3F842c1b026b0Fa888Cc2DD85

Transaction sent: 0x09593dff60016cf66727fa66010e6d9e8accf9e6e98ebceb817c8f3832fd982f
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 4
    ERC20Mock.constructor confirmed  Block: 14  Gas used: 523834 (4.37%)
      ERC20Mock deployed at: 0xe0aA552A10d7EC8760Fc6c246D391E698a82dDf9

Transaction sent: 0x1314ca7f4bac4615587eea60bf52f0312658e6c09ba378d462dca598819cb9fa
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 5
    NFTStaking.constructor confirmed  Block: 15  Gas used: 1031839 (8.60%)
      NFTStaking deployed at: 0x6b4BDe1086912A6Cb24ce3dB43b3466e6c72AFd3

Transaction sent: 0x800a70128133b90f610453ae054ad6bb8f061785fde93751d7f431881f0856fe
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 6
    NFT.safeMint confirmed  Block: 16  Gas used: 204924 (1.71%)

Transaction sent: 0x99ed1e16a924df7f71e2b079090af527bd07ab393a1c2b43b39a1742aa21892b
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 7
    NFT.approve confirmed  Block: 17  Gas used: 46047 (0.38%)

Transaction sent: 0x9426c4cc72a073fdcaedc1073424ebe0b7f3e4ddb07049a8854504a693224b5
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 8
    NFTStaking.stake confirmed  Block: 18  Gas used: 199217 (1.66%)

Transaction sent: 0x3a338542e3e7cff4e276f55b955eebc0be66e199a9edf45405385b6e887325fd
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
    NFT.safeMint confirmed  Block: 19  Gas used: 194112 (1.62%)

Transaction sent: 0xd8a587f9da275b973646b5ab23ce60b7a223700d8ba890163baed15301e232a2
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 4
    NFT.approve confirmed  Block: 20  Gas used: 46047 (0.38%)

Transaction sent: 0xa4b21abe790c1b419911f7b0ab2eb1b00b1f858de8f164cdac039db2e845667e
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 5
    NFTStaking.stake confirmed  Block: 21  Gas used: 173157 (1.44%)

Transaction sent: 0x198abffe51fc9578d572f80b153e99dcf4f085657995003f261437d23ecc6fac
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 9
    NFTStaking.withdraw confirmed (Not staker)  Block: 22  Gas used: 42797 (0.36%)

Transaction sent: 0x71c7972472dc295465a45b010adb1fb47d989948c0d9b8b849c09a513985410
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 6
    NFTStaking.withdraw confirmed  Block: 23  Gas used: 78340 (0.65%)

Transaction sent: 0x0cd989406c7665f96d4e5b7ef2ed6f3657fbbeae666cbe6d8c217040ebecd5d2
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 7
    NFTStaking.withdraw confirmed (Not staker)  Block: 24  Gas used: 42797 (0.36%)

tests/test_nft_staking.py::test_withdraw PASSED
```

```
tests/test_nft_staking.py::test_claim_reward RUNNING
Transaction sent: 0x7a763f231f3b916e070fde788a9114c96ea06cf7df5d05b0543f31284dc6a4c5
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 6
        NFT.constructor confirmed    Block: 25    Gas used: 1984929 (16.54%)
        NFT deployed at: 0x9E4c14403d7d9A8A782044E86a93CAE09D7B2ac9

Transaction sent: 0x9ae322c4dfele4bc889197b4072368f81293eb6434e289b1458fd205512264c6
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 7
        ERC20Mock.constructor confirmed    Block: 26    Gas used: 523834 (4.37%)
        ERC20Mock deployed at: 0xcCB53c9429d32594F404d01fbe9E65ED1DCda8D9

Transaction sent: 0xdce65a83900e761501ded7f9d3ca4310236751ca839fa8051934e44519a44d0c
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 8
        NFTStaking.constructor confirmed    Block: 27    Gas used: 1031839 (8.60%)
        NFTStaking deployed at: 0x420b1099B9eF5babab6D92029594eF45E19A04A4A

Transaction sent: 0x850d4f5f0248add7c15785324aa4ffac67e97139775d2b178d1c4309d7796a1d
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 10
        NFT.safeMint confirmed    Block: 28    Gas used: 204924 (1.71%)

Transaction sent: 0x84f033f0eae64569f2206e0c53f2d89ea584f6af123ea344f358640058f0fac6
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 11
        NFT.safeMint confirmed    Block: 29    Gas used: 198324 (1.65%)

Transaction sent: 0x525358b389637843705434c82c685df4a81a35165b6080175522c7d2aede8313
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 12
        NFT.safeMint confirmed    Block: 30    Gas used: 198324 (1.65%)

Transaction sent: 0x6345f5a525d0dfd5937eb5c450d7847bfc2e911a205b4e2a46f78239d4f4b1ec
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 13
        NFT.approve confirmed    Block: 31    Gas used: 46047 (0.38%)

Transaction sent: 0xabb651e347ee39d72527a932548203079ec320420bde3b894f75d89cb863adb9
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 14
        NFT.approve confirmed    Block: 32    Gas used: 46047 (0.38%)

Transaction sent: 0xe2d680543e740a43384183b683f9094528e8f1912f3bd4b1c7ecf9d5ac2cd6a1
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 15
        NFT.approve confirmed    Block: 33    Gas used: 46047 (0.38%)

Transaction sent: 0x311de9ca63958b12a4bee33ce481f6a0b50fa64f9c79e5d7b721039c41fa82cf
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 16
        NFTStaking.stake confirmed    Block: 34    Gas used: 210224 (1.75%)

Transaction sent: 0xcead7d99b819b2cae0030e1911f637bb6a65e580703ebe45ea5d242d97846260
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 8
        NFT.safeMint confirmed    Block: 35    Gas used: 194112 (1.62%)

Transaction sent: 0xec107ea78d74785e01cee3b4d412f8bda84250fad6954184b3b6cc514c52fc8
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 9
        NFT.approve confirmed    Block: 36    Gas used: 46047 (0.38%)

Transaction sent: 0xe185d5bf8d14e6e133b7c9a74c58fcdeb82618eec3b39f9bf966e7d622f6e337
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 10
        NFTStaking.stake confirmed    Block: 37    Gas used: 173157 (1.44%)

Transaction sent: 0x59a7b9cabbe145cfabdd5df88c98281c62084abaf04505b46d2db510783c4b8a
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 9
        ERC20Mock.mint confirmed    Block: 39    Gas used: 65821 (0.55%)

Transaction sent: 0x96c154f048070b62941424d93be4b50d6f3fb5c0e3f40b74a5a23cde8173f43b
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 17
        NFTStaking.claimReward confirmed    Block: 40    Gas used: 137090 (1.14%)

tests/test_nft_staking.py::test_claim_reward PASSED
tests/test_nft_staking.py::test_set_max_stake_per_addr RUNNING
Transaction sent: 0x6430387ca112bd44e35cf3fde11d67597f76bb48d9142e5e6def9a1f7349009d
    Gas price: 0.0 gwei    Gas limit: 12000000    Nonce: 10
```

## Test Stoken:

```
tests/test_stoken.py::test_constructor RUNNING
Transaction sent: 0x7a0a88149071e5c8f101be4d5101a234e6c4273bb95451f769a27201eb787bdf
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
    WETH9.constructor confirmed  Block: 1  Gas used: 476546 (3.97%)
    WETH9 deployed at: 0x3194cBDC3dbc3E1la07892e7bA5c3394048Cc87

Transaction sent: 0x71b24ca2e2230ccc1e22cf0a2f483eedf4f702e2a7e4654904dd88f0ef6632f7
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 1
    UniswapV2Factory.constructor confirmed  Block: 2  Gas used: 2412742 (20.11%)
    UniswapV2Factory deployed at: 0x602C71e4D4C47a042Ee7f46E0aee17F94A3bA0B6

Transaction sent: 0x9d9a4ee8e7ce168d9a0e7fbb2dad72ffelc30a25dac6f7b11f308c78fb8f5c85
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 2
    UniswapV2Router02.constructor confirmed  Block: 3  Gas used: 3895430 (32.46%)
    UniswapV2Router02 deployed at: 0xE7eD6747FaC5360f88a2EFC03E00d25789F69291

Transaction sent: 0x239d8547d824b567ad0ee8232def3e289def1d55dbff02f57a6b37cdcd829a
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
    SToken.constructor confirmed (Admin wallet cannot be zero address)  Block: 4  Gas used: 325849 (2.72%)

Transaction sent: 0xd5e4c37e869e1f277a37a51e3a5da84a543dc31f55a87d76bdaf2122b6578868
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 4
    SToken.constructor confirmed (Owner wallet cannot be zero address)  Block: 5  Gas used: 325884 (2.72%)

Transaction sent: 0x6631fd88c4a20d963720fce75e91a529b0a03a7abcd7ed0b9f02ea65ed7eab15
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 5
    SToken.constructor confirmed (Cannot set LpFee more than 10%)  Block: 6  Gas used: 326122 (2.72%)

Transaction sent: 0x919a8cc32b47c2b1b800b9bc23643f2f866f961fa05a0749d08d44b9e368ab3a
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 6
    SToken.constructor confirmed (Cannot set adminFee more than 30%)  Block: 7  Gas used: 326176 (2.72%)

Transaction sent: 0xe58d564167f97b91f0d73594d69b45d83b6a050cf031b84f72d9fec670c1a9ec
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 7
    SToken.constructor confirmed (Invalid router address)  Block: 8  Gas used: 325955 (2.72%)

Transaction sent: 0xf62b3e8c3ca2e780a80f3a90f26a61bacd976eaa4041b98f053c883598efe232
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 8
    SToken.constructor confirmed (Max wallet amount must be at least 0.5% of total supply)  Block: 9  Gas used: 469354 (3.91%)

Transaction sent: 0x662cf0029e738c02f57b01f8d922433fd2724625ed4cd18370cb7ca68aed5b8d
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 9
    SToken.constructor confirmed (Max transaction amount cannot be less than 0.1% of total supply)  Block: 10  Gas used: 674246 (5.62%)

Transaction sent: 0xa576189a915758a413e5dad80d4e67f2d71a568b7e63dbe9ba261d0d14876d6f
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 10
    SToken.constructor confirmed  Block: 11  Gas used: 5164459 (43.04%)
    SToken deployed at: 0xb6286fAFd0451320ad6A8143089b216C2152c025

tests/test_stoken.py::test_constructor PASSED
tests/test_stoken.py::test_set_token_uri RUNNING
Transaction sent: 0x9fc4a8815b291347dbe179de4330615a219af5acfdd1d45404b0dd1440f5f7c9
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 11
    WETH9.constructor confirmed  Block: 12  Gas used: 476546 (3.97%)
    WETH9 deployed at: 0x7a3d735ee6873f17Dbdcab1d51B604928dc10d92

Transaction sent: 0x8124c5619b6f9fa605fa305e140e29146a035d5396f412763e6357c6e8d88738
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 12
    UniswapV2Factory.constructor confirmed  Block: 13  Gas used: 2412742 (20.11%)
    UniswapV2Factory deployed at: 0x2c15A315610Bfa5248E4CbCbd693320e9D8E03Cc

Transaction sent: 0x0ea5c266829dbc655e223f08e51faf19dff3b1802c1f34f7694946dd9b298fed
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 13
    UniswapV2Router02.constructor confirmed  Block: 14  Gas used: 3895430 (32.46%)
    UniswapV2Router02 deployed at: 0xe692cf21B12e0B2717C4bF647F9768Fa58861c8b

Transaction sent: 0x41212ac60f7b863c6ad8f356b5304e9cae429d882c6230a90cfbf33a5298e805
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 14
    SToken.constructor confirmed  Block: 15  Gas used: 5164471 (43.04%)
    SToken deployed at: 0xe65A7a341978d59d40d30FC23F5014FACB4f575A

Transaction sent: 0x0d18adaf66717f79e755dce2ed516a7346236656da7d062051df4779c2b007b5
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
    SToken.setTokenURI confirmed (Ownable: caller is not the owner)  Block: 16  Gas used: 23154 (0.19%)

Transaction sent: 0x5edb07f62f4319ea362f7acbb2eb7081d2683405a89820696960ae0b118d481b
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
    SToken.setTokenURI confirmed  Block: 17  Gas used: 31960 (0.27%)

tests/test_stoken.py::test_set_token_uri PASSED
```

```

tests/test_stoken.py::test_set_max_wallet_amount RUNNING
Transaction sent: 0xc5755e977944976429d8727dbe817dd98774e3adc48c45c67575d87b6968ffdb
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 15
    WETH9.constructor confirmed  Block: 18  Gas used: 476546 (3.97%)
    WETH9 deployed at: 0x30375B532345B01cB8c2AD12541b09E9Aa53A93d

Transaction sent: 0xebaa4895cc690f7fdb890dd0b205eb5825b50ad5ac3bb95f5fb2c1bd4627a40
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 16
    UniswapV2Factory.constructor confirmed  Block: 19  Gas used: 2412742 (20.11%)
    UniswapV2Factory deployed at: 0x26f15335BB1C6a4C0B660eDd694a0555A9F1cce3

Transaction sent: 0x7404b86ec0bd8dac914b1739c5dc9266152cf9e3d020c092bb95cbbe5fc6842d
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 17
    UniswapV2Router02.constructor confirmed  Block: 20  Gas used: 3895430 (32.46%)
    UniswapV2Router02 deployed at: 0xFbD588c72B438faD4Cf7cD879c8F730Faa213Da0

Transaction sent: 0x9a3df49c60fd9d168d62a1c77aa1d1f77d4c7e173360c00a2ff9255967375799
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 18
    SToken.constructor confirmed  Block: 21  Gas used: 5164471 (43.04%)
    SToken deployed at: 0xed00238F9A0F7b4d93842033cdF56cCB32C781c2

Transaction sent: 0xb14f615be580b3fcfcf27191e5b60b3756200bd48493f453ecac461f4a39fe32
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 1
    SToken.setAdminFeeThreshold confirmed (Ownable: caller is not the owner)  Block: 22  Gas used: 22524 (0.19%)

Transaction sent: 0x4510577025ad04dbde505942e2edecaf99eae60cb408fc80d66a1e3c0cc77414
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 1
    SToken.setAdminFeeThreshold confirmed  Block: 23  Gas used: 28458 (0.24%)

tests/test_stoken.py::test_set_max_wallet_amount PASSED
tests/test_stoken.py::test_set_liq_fee_percent RUNNING
Transaction sent: 0xdf806ea27ff15e2708d421710bd99b8d5034fc56227e3351e0872645703ea84d
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 19
    WETH9.constructor confirmed  Block: 24  Gas used: 476546 (3.97%)
    WETH9 deployed at: 0xDae02e4fE488952cFB8c95177154D188647a0146

Transaction sent: 0x0bd3fe0c7659a65ad788529667259a23fd43c2a842dc00db63d6c43f96252d82
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 20
    UniswapV2Factory.constructor confirmed  Block: 25  Gas used: 2412742 (20.11%)
    UniswapV2Factory deployed at: 0xdCF93F11ef216cEC9C07fd31dD801c9b2b39Afb4

Transaction sent: 0x1b512ccf161f232ef4fcc485aa984b7b426d2c214a2142d87038222fcf02c339
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 21
    UniswapV2Router02.constructor confirmed  Block: 26  Gas used: 3895430 (32.46%)
    UniswapV2Router02 deployed at: 0xBcb61491F1859f53438918F1A5aFCA542Af9D397

Transaction sent: 0x74412773567058608b59ae3d0e498bde94c0a7f1959bd76c726c868c0a958b1b
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 22
    SToken.constructor confirmed  Block: 27  Gas used: 5164461 (43.04%)
    SToken deployed at: 0xD22363efee93190f82b52FC62B7Dccb920eF658

Transaction sent: 0xda49f30a0661c68caf24b42983a5034eccea0935aefe20f5a71b6f718bdb2673
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 2
    SToken.setLiquidityFeePercent confirmed (Ownable: caller is not the owner)  Block: 28  Gas used: 22518 (0.19%)

Transaction sent: 0xc9fb2414ddaece06b64ae129aa2cd9bdcaa5e41f2f2af7c7415bde74ffc74a
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 2
    SToken.setLiquidityFeePercent confirmed (Cannot exceed the max liquidity fee)  Block: 29  Gas used: 23336 (0.19%)

Transaction sent: 0xc31a92187198b696ed6f96e33e0f960e16ca66ad4a90aeee4517f8ef174ccf81e
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
    SToken.setLiquidityFeePercent confirmed  Block: 30  Gas used: 29278 (0.24%)

tests/test_stoken.py::test_set_liq_fee_percent PASSED

```

```
tests/test_stoken.py::test_set_admin_fee_perc RUNNING
Transaction sent: 0x1b88d91ba8f38da23b15507cc80c1606529cffc4a452cbce8478c4d16154e088
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 23
    WETH9.constructor confirmed  Block: 31  Gas used: 476546 (3.97%)
    WETH9 deployed at: 0x4D1B781ce59B8C184F63B99D39d6719A522f46B5

Transaction sent: 0x373103f49cd89fc6cd78a5053f9707c9748c89ec2cdf07445293264534122f25
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 24
    UniswapV2Factory.constructor confirmed  Block: 32  Gas used: 2412742 (20.11%)
    UniswapV2Factory deployed at: 0xf9C8Cf55f2E520B08d869df7bc76aa3d3ddDF913

Transaction sent: 0xfb859024ebb798283d3cf60177f87feeld23955d1caac4b1956c58a3e9fbadb4
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 25
    UniswapV2Router02.constructor confirmed  Block: 33  Gas used: 3895430 (32.46%)
    UniswapV2Router02 deployed at: 0x654f70d8442EA18904FA1AD79114f7250F7E9336

Transaction sent: 0x6c00f5e85b5c4ffff4ac5f15cbaf23448b5dbe8115ad5f07943d48f1655c60ca
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 26
    SToken.constructor confirmed  Block: 34  Gas used: 5164471 (43.04%)
    SToken deployed at: 0xADeD1D42dE86f9058386D1D0d739d20C7eAfC43

Transaction sent: 0xa2de71980ea90f9eba57d2d541145fbade2f09d529180504a5cdc402de99e245
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 3
    SToken.setAdminFeePercent confirmed (Ownable: caller is not the owner)  Block: 35  Gas used: 22517 (0.19%)

Transaction sent: 0x102fb29f85fa84042721173053ccb6c00b91016ce3368785ca2417234f89e02
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 4
    SToken.setAdminFeePercent confirmed (Cannot exceed the max admin fee)  Block: 36  Gas used: 23307 (0.19%)

Transaction sent: 0x41ce9179ef322da1f68666a5f7e71a4dcfd2cb64f9a4708c4bfa19be9332f78f
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 5
    SToken.setAdminFeePercent confirmed  Block: 37  Gas used: 29277 (0.24%)

tests/test_stoken.py::test_set_admin_fee_perc PASSED
tests/test_stoken.py::test_set_admin_wallet RUNNING
Transaction sent: 0x12d426d499c1cb064869b9e21d2201d8b4470190f974d78c0e63eb9988c103d0
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 27
    WETH9.constructor confirmed  Block: 38  Gas used: 476546 (3.97%)
    WETH9 deployed at: 0x832698Daec363C9A7aB036C224Af5B21280b3AC6

Transaction sent: 0xc7c3a0ca13a7f459362165b4edda7dbe6698fc432693bf401f71f756f6ce1b73
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 28
    UniswapV2Factory.constructor confirmed  Block: 39  Gas used: 2412742 (20.11%)
    UniswapV2Factory deployed at: 0xA95916C3D979400C7443961330b3092510a229Ba

Transaction sent: 0x07d9bca25a1b930a920008bc145f8af024dc2d884997838b1c7ac95963c24034
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 29
    UniswapV2Router02.constructor confirmed  Block: 40  Gas used: 3895430 (32.46%)
    UniswapV2Router02 deployed at: 0x42E8D004c84E6B5Bad559D3b5CE7947AADb9E0bc

Transaction sent: 0xa9aca3396360c6589be17abc2276978680c6a9a73671845000d0e5910cebe30e
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 30
    SToken.constructor confirmed  Block: 41  Gas used: 5164471 (43.04%)
    SToken deployed at: 0xF06D5f5BfFFCB6a52c84cfecb03AD35637728E73

Transaction sent: 0xab60b65c07e6704435e6dd9dc6c806c1f67284e8e6112da66dadc6a5bdbdad3c
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 4
    SToken.setAdminWallet confirmed (Ownable: caller is not the owner)  Block: 42  Gas used: 22730 (0.19%)

Transaction sent: 0x74c0d6c75e68eaa15ec203e2539a277b79e42e857c547afba079ef270631b5c6
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 6
    SToken.setAdminWallet confirmed (Admin wallet cannot be zero address)  Block: 43  Gas used: 22529 (0.19%)

Transaction sent: 0xc7126c8b1ac89602a17b11c051220253668bb7d6ca5518d469d9fd4e03260497
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 7
    SToken.setAdminWallet confirmed  Block: 44  Gas used: 45359 (0.38%)

tests/test_stoken.py::test_set_admin_wallet PASSED
```

```
tests/test_stoken.py::test_set_max_tx_amount RUNNING
Transaction sent: 0xe550034e7e53d0f7152b1e2175d8d9f1269e6faec81bf18c9bbd5817cb4f31c5
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 31
    WETH9.constructor confirmed  Block: 45  Gas used: 476546 (3.97%)
    WETH9 deployed at: 0x82c83b7f88aef2eD99d4869D547b6ED28e69C8df

Transaction sent: 0x60591ee9fc1eb789686a22ba7b508909c62089c52f9544bacalbe69624846043
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 32
    UniswapV2Factory.constructor confirmed  Block: 46  Gas used: 2412742 (20.11%)
    UniswapV2Factory deployed at: 0x724Ca58E1e6e648FB1E15d7Eec0fe1E5f581c7bD

Transaction sent: 0x0af54c615d1df698056543ad3686ce070ab0697283f260f4081ae5cea90a21fd
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 33
    UniswapV2Router02.constructor confirmed  Block: 47  Gas used: 3895430 (32.46%)
    UniswapV2Router02 deployed at: 0x34b97ffa01dc0DC959c5f1176273D0de3be914C1

Transaction sent: 0x797407ecf5ed28f75adf084ae9c9b005e7b779c3560362079b04b1dbb3bed630
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 34
    SToken.constructor confirmed  Block: 48  Gas used: 5164471 (43.04%)
    SToken deployed at: 0xc830Ad2FDfCC2f368fE5DeC93b1Dc72ecABb3691

Transaction sent: 0xc7ebc60c1f2d192b8c7ce2a46afbcff020062b47665e0f90e5beaa9aa289dd03
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 5
    SToken.setMaxTxAmount confirmed (Ownable: caller is not the owner)  Block: 49  Gas used: 22588 (0.19%)

Transaction sent: 0x192d3f8732a15f9abb2cea43748fad9030f9360a220ff8463f07b8485ba0900
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 8
    SToken.setMaxTxAmount confirmed (Max transaction amount cannot be less than 0.1% of total supply)  Block: 50  Gas used: 23443 (0.20%)

Transaction sent: 0xb9894a289ac8bc6d8926df294c18e47533a10339d9c8583b4183814fcb61d06a
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 9
    SToken.setMaxTxAmount confirmed  Block: 51  Gas used: 29401 (0.25%)

tests/test_stoken.py::test_set_max_tx_amount PASSED
```

```
tests/test_stoken.py::test_transfer RUNNING
Transaction sent: 0x20d7f320691c1e2a0f8f357222e0bb5940800e5324d23879aeb21114ddc361f2
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 35
    WETH9.constructor confirmed  Block: 52  Gas used: 476546 (3.97%)
    WETH9 deployed at: 0xbc8eCccb89650c3E796e803CB009BF9b898CB359

Transaction sent: 0xc63d7ae6c9c45f2ddb32e2baa496ab4710692122bcc621234f180ab4378e1703
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 36
    UniswapV2Factory.constructor confirmed  Block: 53  Gas used: 2412742 (20.11%)
    UniswapV2Factory deployed at: 0x741e3E1f81041c62C2A97d0b6E567AcaB09A6232

Transaction sent: 0x532fd5df760155058a9ab2b6335d31685bbfd7284b3d803af726f99d80185a6
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 37
    UniswapV2Router02.constructor confirmed  Block: 54  Gas used: 3895430 (32.46%)
    UniswapV2Router02 deployed at: 0x4B0FccF53589c1F185B35db88bB315a0bBF9a3e0

Transaction sent: 0x3d02847140e72f04a625fc99d2c7ea4fe3aaeae9d414b2e1e566f20974bdःfa899
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 38
    SToken.constructor confirmed  Block: 55  Gas used: 5164471 (43.04%)
    SToken deployed at: 0xFE0F4Cf81B5c0a6Fd65a610FD9488F33aE9095cB

Transaction sent: 0x574830d9a666a8b715df1705b14c41011faa214f3e7c4bc42b7c4f8455aaed5c
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 0
    SToken.transfer confirmed (ERC20: transfer from the zero address)  Block: 56  Gas used: 22179 (0.18%)

Transaction sent: 0xa66bead1f444e4ae6685cf8650b30010b50965d30a24488b38a80e007941e2d
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 6
    SToken.transfer confirmed (ERC20: transfer to the zero address)  Block: 57  Gas used: 21974 (0.18%)

Transaction sent: 0x4f8ff02a1000f34082f93508d1e8830325fc8f0701d77c038173b78ca99a83aa
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 7
    SToken.transfer confirmed (Transfer amount must be greater than zero)  Block: 58  Gas used: 22153 (0.18%)

Transaction sent: 0xe0d5b14bacbba6a527c0a75e537d086d2aea48a374f0f85c8a2e4b6caebe7312
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 8
    SToken.transfer confirmed (Insufficient balance)  Block: 59  Gas used: 25750 (0.21%)

Transaction sent: 0x8ble56e99488bef4d1b972693708ce526371f84c7b7d420b716e5716666754dd
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 9
    SToken.transfer confirmed (Max wallet amount exceeded)  Block: 60  Gas used: 24840 (0.21%)

Transaction sent: 0x1541293cdfedfla6e64f441bdd44367aa6bf066149ecald8b3d062ee56f6e29e
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 10
    SToken.transfer confirmed  Block: 61  Gas used: 77780 (0.65%)

Transaction sent: 0x57542fe2a4d38cb43269ce6e87f615e77c4ddfdad7bd947b6ef09ec4b08e5e73
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 10
    SToken.transfer confirmed  Block: 62  Gas used: 79575 (0.66%)

Transaction sent: 0x341a3e2dcf3f6b48285c103cf5f1466bc32fc822ec08adf48alb149973a080d9
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 11
    SToken.transfer confirmed  Block: 63  Gas used: 112665 (0.94%)

Transaction sent: 0xb40758008ac28c2037ca0fe1a8dd8d5a5ed8c4d128b355836382770ece96ba2c
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 1
    SToken.transfer confirmed  Block: 64  Gas used: 51808 (0.43%)

Transaction sent: 0x20fe8c2c9f8383e547ce5981f7b728ab844d4953fd3bc12062fbb90acdb5e5ec
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 39
    SToken.constructor confirmed  Block: 65  Gas used: 5149473 (42.91%)
    SToken deployed at: 0x4e3E7dC9D84dA7BE8f017f4C36153A61341736d4

Transaction sent: 0x6fe352dfaacf0a73b3600823f1fc9c8c27ea018e47c695518d7c71f86920e178
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 11
    SToken.transfer confirmed  Block: 66  Gas used: 77780 (0.65%)

Transaction sent: 0xc64c32f3789e08af67f26403e7d0fe59c93628583a15f7dc0688722b6983b239
  Gas price: 0.0 gwei  Gas limit: 12000000 Nonce: 12
    SToken.transfer confirmed  Block: 67  Gas used: 112637 (0.94%)

tests/test_stoken.py::test_transfer PASSED
```

## Test Token Vesting:

```
tests/test_token_vesting.py::test_create_vesting RUNNING
Transaction sent: 0x8f8090a2dd268aed3d929b8ea4e8156d714d752230792bbe5b2ebc41e08766
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
  ERC20Mock.constructor confirmed  Block: 1  Gas used: 523834 (4.37%)
  ERC20Mock deployed at: 0x3194cBDC3dbcd3E11a07892e7bA5c3394048Cc87

Transaction sent: 0xb9249e83e89bdfc102c2c9d486e81c83724924108a4f7053f33873ddb92f2c28
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 1
  TokenVesting.constructor confirmed  Block: 2  Gas used: 1371828 (11.43%)
  TokenVesting deployed at: 0x602C71e4DCA47a042Ee7f46E0ae17F94A3bA0B6

Transaction sent: 0xe42efd4251123bfa4314a56ad4ee25ab44505d1d1241f0ee8ef78ab058b8716b
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
  TokenVesting.createVestingSchedule confirmed (UNAUTHORIZED)  Block: 3  Gas used: 24112 (0.20%)

Transaction sent: 0xba9cecd159004039c976bd5aae1fff79aace70884fc7fb5aa546ef5f2e01426
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 2
  TokenVesting.createVestingSchedule confirmed (TokenVesting: cannot create vesting schedule because not sufficient tokens)  Block: 4  Gas used: 27301 (0.23%)

Transaction sent: 0x683f8b4187b51b3d9efde09974206f2731b1fe4d31062c7b850243d989ba18aa
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
  ERC20Mock.mint confirmed  Block: 5  Gas used: 65821 (0.55%)

Transaction sent: 0x11913da07c39e30ee3f3d84a7186c63239a5186370004bd0311b78dd9241273
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 4
  TokenVesting.createVestingSchedule confirmed (TokenVesting: duration must be > 0)  Block: 6  Gas used: 27270 (0.23%)

Transaction sent: 0x065719139be8e9308f75466f51bfde866c17a15ed86b4e637ad98963a553a5
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 5
  TokenVesting.createVestingSchedule confirmed (TokenVesting: amount must be > 0)  Block: 7  Gas used: 27236 (0.23%)

Transaction sent: 0x2dbd21a83c2382fc4e1b38c77c5943b472d69136d33031a506347169b3336b1
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 6
  TokenVesting.createVestingSchedule confirmed (TokenVesting: beneficiary cannot be the zero address)  Block: 8  Gas used: 27136 (0.23%)

Transaction sent: 0x34d601f90071a0fe3bdfe8826f472227b09e1e6e4544d8f299f5d0569ec0252f
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 7
  TokenVesting.createVestingSchedule confirmed (TokenVesting: slicePeriodSeconds must be >= 1)  Block: 9  Gas used: 27354 (0.23%)

Transaction sent: 0x04555ede61f698c0b43f20d7b935bacbd1a4c2577f9de289fad6555164a5f23a
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 8
  TokenVesting.createVestingSchedule confirmed (TokenVesting: duration must be >= cliff)  Block: 10  Gas used: 27416 (0.23%)

Transaction sent: 0xe51f7d696f37d45be1bac928001a6332765761115ed60e4b1b5a7ed13718e5d
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 9
  TokenVesting.createVestingSchedule confirmed  Block: 11  Gas used: 318839 (2.66%)

tests/test_token_vesting.py::test_create_vesting PASSED
tests/test_token_vesting.py::test_revoke RUNNING
Transaction sent: 0x3058b93f3c0e9b5358a633bcd911dbe3b309f0b26aab4d8f31d1f9e2b3041ff5
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 10
  ERC20Mock.constructor confirmed  Block: 12  Gas used: 523834 (4.37%)
  ERC20Mock deployed at: 0xb6286fAFd0451320ad6A8143089b216C2152c025

Transaction sent: 0xd9fc8d2291420f690efadf2a030adca594efa424143a8304954cffb1358120d0
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 11
  TokenVesting.constructor confirmed  Block: 13  Gas used: 1371828 (11.43%)
  TokenVesting deployed at: 0x7a3d735ee6873f170bbdcab1d51B604928dc10d92

Transaction sent: 0x48bf577ba89f4alffc736426be20dae3e82aebd72b393b03cb7a10fa4c6d4ba8
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 12
  ERC20Mock.mint confirmed  Block: 14  Gas used: 65821 (0.55%)

Transaction sent: 0xa07097clee4d67a5134aeb512f95b462e138a86e3301b55bd016c0b09fbf3496
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 13
  TokenVesting.createVestingSchedule confirmed  Block: 15  Gas used: 318839 (2.66%)

Transaction sent: 0xd4e3302ee065f5bf73363df3a41147f6b630e349f0644e8bb2c4bca6ee7a2ade
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 1
  TokenVesting.revoke confirmed (UNAUTHORIZED)  Block: 16  Gas used: 22860 (0.19%)

Transaction sent: 0xfb4ce4ee2cd21b349d421c5ec27b65b988c41cc1e589db3fde91768ae27c318901
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 14
  TokenVesting.createVestingSchedule confirmed  Block: 17  Gas used: 239627 (2.00%)

Transaction sent: 0x3f962ed19d00a5172a13c898494f141c194e6dba0b162553ef93f6899b9b9a06
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 15
  TokenVesting.revoke confirmed (TokenVesting: vesting is not revocable)  Block: 18  Gas used: 24635 (0.21%)

Transaction sent: 0xa4029f5e2fb7b3566a39b8c5e16859cfcaedc938426686842865fb8c0672c1dd
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 16
  TokenVesting.revoke confirmed  Block: 19  Gas used: 61392 (0.51%)

Transaction sent: 0x4cf9e10f3ffffe70cd4104090566d8f4b7dd7ff6209766c16f529db1b44da62ae
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 17
  TokenVesting.revoke confirmed (reverted)  Block: 20  Gas used: 23626 (0.20%)

tests/test_token_vesting.py::test_revoke PASSED
```

```

tests/test_token_vesting.py::test_withdraw RUNNING
Transaction sent: 0x7f12c12947e2de949ad98f278a703f7fcefc4787ff12eb3364f6add26ec36c5
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 18
  ERC20Mock.constructor confirmed  Block: 21  Gas used: 523834 (4.37%)
  ERC20Mock deployed at: 0xed00238F9A0F7b4d93842033cdF56cCB32C781c2

Transaction sent: 0x9bc8a87e8ec108b7f1d618ad6eeef2f9dc76bc068f6f7d639c3b62d0b07897f0f
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 19
  TokenVesting.constructor confirmed  Block: 22  Gas used: 1371816 (11.43%)
  TokenVesting deployed at: 0xDae02e4fE488952cFB8c95177154D188647a0146

Transaction sent: 0x4fb752c1ebafa02d1ea95632aef67f9dcf59eaac852855c66f01901cc140d5ae
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 2
  TokenVesting.withdraw confirmed (UNAUTHORIZED)  Block: 23  Gas used: 28356 (0.24%)

Transaction sent: 0xb48249a7d9077b5be0b98b543b21a984219c5467edfa5e115c6bd6de11f58192
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 20
  TokenVesting.withdraw confirmed (TokenVesting: not enough withdrawable funds)  Block: 24  Gas used: 31527 (0.26%)

Transaction sent: 0x32201ac7a53edf86a2ba7a3b546e016bdb3340ad498123d0bcd2a23366a04a68d
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 21
  ERC20Mock.mint confirmed  Block: 25  Gas used: 65821 (0.55%)

Transaction sent: 0xb015a2548a6d583e2f276747a823d5a3f57f168059d174e6f28ed4ecec8cff3
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 22
  TokenVesting.withdraw confirmed  Block: 26  Gas used: 58376 (0.49%)

Transaction sent: 0xb0fd4d184d3ea49186742b506cce9460499a0975e0ecb20b315986cac7a89aab
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 23
  TokenVesting.withdraw confirmed  Block: 27  Gas used: 43376 (0.36%)

tests/test_token_vesting.py::test_withdraw PASSED
tests/test_token_vesting.py::test_release RUNNING
Transaction sent: 0x6963d74e753cccd05104d0ef58a4971164c19b37f3babdb42fe15f369896f351
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 24
  ERC20Mock.constructor confirmed  Block: 28  Gas used: 523834 (4.37%)
  ERC20Mock deployed at: 0xf9c8cf55f2E520B08d869df7bc76aa3d3ddDF913

Transaction sent: 0xd461bc0c2a685907380f5aeb5b1e91409f9fd7fd7d98bc2e2ff34846c25f01af
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 25
  TokenVesting.constructor confirmed  Block: 29  Gas used: 1371828 (11.43%)
  TokenVesting deployed at: 0x654f70d8442EA18904FA1AD79114f7250F7E9336

Transaction sent: 0x7e7bae3b87911435b5e4408edac4d30f76ba7e35eb7c9be495cdcce4f0fe7934
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 0
  TokenVesting.release confirmed (TokenVesting: only beneficiary and owner can release vested tokens)  Block: 30  Gas used: 30259 (0.25%)

Transaction sent: 0x93f097979f310daf7546ae0ff85912760a38fa717b21b36421cc61db90b9900c
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 26
  TokenVesting.release confirmed (Vested amount is 0)  Block: 31  Gas used: 38896 (0.32%)

Transaction sent: 0x23a419f72729b3578ab98f621568d091851eaad8985cbe53666229558d1918d1
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 27
  ERC20Mock.mint confirmed  Block: 32  Gas used: 65821 (0.55%)

Transaction sent: 0x8538c6560422e913d3bf7a44db2abee5104fe8964b56ee1c706dc1c7fb3b296e
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 28
  TokenVesting.createVestingSchedule confirmed  Block: 33  Gas used: 318851 (2.66%)

Transaction sent: 0x99bb6a966fe737ebede0ee9a1999a7df6eca75c6e0850ec75be7fb4030feb914
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 29
  TokenVesting.createVestingSchedule confirmed  Block: 34  Gas used: 269627 (2.25%)

Transaction sent: 0xc45da4f80b53ef34862027623db5dfc7bcelaa6ca7376bc27dcaa40cdcd9ff9a
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 1
  TokenVesting.release confirmed (TokenVesting: only beneficiary and owner can release vested tokens)  Block: 35  Gas used: 30475 (0.25%)

Transaction sent: 0xd914245caaa175ca9da38bec296375905840066ed86b8e42c5b591fc00277af4
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 30
  TokenVesting.revoke confirmed  Block: 36  Gas used: 61392 (0.51%)

Transaction sent: 0xfe9fd0c3878dd92d812df1d926d9716d2d27cdf6c99c48804fe8e25b359306ed
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
  TokenVesting.release confirmed (reverted)  Block: 37  Gas used: 28549 (0.24%)

Transaction sent: 0xc66335bc3f2b37fa1e585a124b3ca540db6d8807950176e9119055e562db32f2
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 2
  TokenVesting.release confirmed (Vested amount is 0)  Block: 38  Gas used: 38878 (0.32%)

Transaction sent: 0xa7409c10e59b9e10b79e86985235304b025b33516ffcebd640b8317cf5dc684
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 3
  TokenVesting.release confirmed  Block: 40  Gas used: 95486 (0.80%)

Transaction sent: 0x2417b01f2039afec83f5b7ba03dd9e91f9182041a650dd5bce2b16826c2e9e90
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 31
  TokenVesting.createVestingSchedule confirmed  Block: 41  Gas used: 258851 (2.16%)

Transaction sent: 0xbabd13ccfe63735f69775b6353dc9c18740d3d5984ed53182800211ea64fb33
  Gas price: 0.0 gwei  Gas limit: 12000000  Nonce: 32
  TokenVesting.revoke confirmed  Block: 43  Gas used: 131543 (1.10%)

tests/test_token_vesting.py::test_release PASSED

```

# Annexes

Testing code:

Test btoken:

```
from brownie import (
    reverts,
)

from scripts.helpful_scripts import (
    ZERO_ADDRESS,
    DAY_TIMESTAMP,
    get_account,
    get_timestamp,
    get_chain_number,
    increase_timestamp
)

from scripts.deploy import (
    deploy_btoken
)

def test_burn(only_local):
    # Arrange
    owner = get_account(0)
    other = get_account(1)
    extra = get_account(2)

    btoken = deploy_btoken(owner, extra, 100000e18, owner)
```

```
with reverts("Burn amount must be greater than zero"):

    btoken.burn(0, {"from": other})

with reverts("Insufficient balance"):

    btoken.burn(1e18, {"from": other})

    btoken.transfer(other, 5e18, {"from": owner})

tx = btoken.burn(1e18, {"from": other})

assert tx.events['TokensBurned'][0]['burner'] == other

assert tx.events['TokensBurned'][0]['amount'] == 1e18


def test_set_trusted_forwarder(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    new_forwarder = get_account(3)

    diff_owner = get_account(4)

    btoken = deploy_btoken(owner, extra, 100000e18, diff_owner)

    with reverts():

        btoken.setTrustedForwarder(new_forwarder, {"from": other})

    with reverts("Trusted Forwarder address cannot be the zero address"):

        btoken.setTrustedForwarder(ZERO_ADDRESS, {"from": owner})

    tx = btoken.setTrustedForwarder(new_forwarder, {"from": owner})

    assert tx.events['TrustedForwarderUpdated'][0]['newTrustedForwarder'] == new_forwarder


def test_set_token_uri(only_local):

    # Arrange

    owner = get_account(0)
```

```
other = get_account(1)

extra = get_account(2)

old_token_uri = "token_uri"

new_token_uri = "new_uri"

btoken = deploy_btoken(owner, extra, 100000e18, owner)

with reverts():

    btoken.setTokenURI(new_token_uri, {"from": other})

    assert btoken.tokenURI() == old_token_uri

    tx = btoken.setTokenURI(new_token_uri, {"from": owner})

    assert tx.events['TokenURISet'][0]['tokenURI'] == new_token_uri

    assert btoken.tokenURI() == new_token_uri
```

Test ERC404:

```
from brownie import (
    reverts,
)

from scripts.helpful_scripts import (
    ZERO_ADDRESS,
    get_account,
)

from scripts.deploy import (
    deploy_erc404
)
```

```
def test_mint(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    fee_addr = get_account(3)

    mint_price = 0.01e18

    erc404 = deploy_erc404(owner, 1000000, 1000000, mint_price, owner, fee_addr)

    with reverts("Max supply reached"):

        erc404.mint(other, {"from": other})

    erc404 = deploy_erc404(owner, 1000000e18, 100000000e18, mint_price, owner, fee_addr)

    with reverts("Mint price value sent is not correct"):

        erc404.mint(other, {"from": other})

    fee_applied = mint_price * 0.05

    balance_before = fee_addr.balance()

    tx = erc404.mint(other, {"from": other, "value": mint_price * 10})

    assert tx.events['Mint'][0]['to'] == other

    assert tx.events['Mint'][0]['mintPrice'] == mint_price

    assert tx.events['Transfer'][0]['from'] == ZERO_ADDRESS

    assert tx.events['Transfer'][0]['to'] == other

    assert fee_addr.balance() == balance_before + fee_applied

    tx = erc404.mint(extra, {"from": extra, "value": mint_price * 5})

    assert tx.events['Mint'][0]['to'] == extra

    assert tx.events['Mint'][0]['mintPrice'] == mint_price
```

```
tx = erc404.transfer(extra, 0.5e18, {"from": other})

assert erc404.balanceOf(other) == 0.5e18

assert erc404.balanceOf(extra) == 1.5e18


tx = erc404.transfer(extra, 0.5e18, {"from": other})

assert erc404.balanceOf(other) == 0

assert erc404.balanceOf(extra) == 2e18


def test_set_mint_price(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    fee_addr = get_account(3)


    mint_price = 0.01e18

    erc404 = deploy_erc404(owner, 1000000e18, 100000000e18, mint_price, owner, fee_addr)

    with reverts(""):

        erc404.setMintPrice(0.5e18, {"from": other})

        tx = erc404.setMintPrice(0.5e18, {"from": owner})

        assert tx.events['MintPriceUpdated'][0]['mintPrice'] == 0.5e18


def test_set_erc721_transfer_exempt(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    fee_addr = get_account(3)
```

```

mint_price = 0.01e18

erc404 = deploy_erc404(owner, 1000000e18, 100000000e18, mint_price, owner, fee_addr)

with reverts("):

    erc404.setErc721TransferExempt(extra, True, {"from": other})

    assert erc404.isErc721TransferExempt(extra) == False

    erc404.setErc721TransferExempt(extra, True, {"from": owner})

    assert erc404.isErc721TransferExempt(extra) == True

    erc404.setErc721TransferExempt(extra, False, {"from": owner})

    assert erc404.isErc721TransferExempt(extra) == False

```

Test NFT Flat:

```

from brownie import (
    reverts,
)

from scripts.helpful_scripts import (
    ZERO_ADDRESS,
    get_account,
)

from scripts.deploy import (
    deploy_nft
)

def test_safe_mint(only_local):
    # Arrange
    owner = get_account(0)
    other = get_account(1)

```

```

extra = get_account(2)

fee_addr = get_account(3)

mint_price = 0.01e18

with reverts("Royalty value should be less than 20%"):

    deploy_nft(owner, 3000, 1000000, mint_price, fee_addr)

nft_flat = deploy_nft(owner, 1000, 0, mint_price, fee_addr)

with reverts("Max supply reached"):

    nft_flat.safeMint(other, {"from": other})

nft_flat = deploy_nft(owner, 1000, 1000000, mint_price, fee_addr)

with reverts("Mint price value sent is not correct"):

    nft_flat.safeMint(other, {"from": other})

fee_applied = mint_price * 0.05

balance_before = fee_addr.balance()

tx = nft_flat.safeMint(other, {"from": other, "value": mint_price * 10})

assert tx.events['Mint'][0]['to'] == other

assert tx.events['Mint'][0]['mintPrice'] == mint_price

assert tx.events['Mint'][0]['tokenId'] == 1

assert tx.events['Transfer'][0]['from'] == ZERO_ADDRESS

assert tx.events['Transfer'][0]['to'] == other

assert tx.events['Transfer'][0]['tokenId'] == 1

assert fee_addr.balance() == balance_before + fee_applied

tx = nft_flat.safeMint(extra, {"from": extra, "value": mint_price * 5})

assert tx.events['Mint'][0]['to'] == extra

assert tx.events['Mint'][0]['mintPrice'] == mint_price

assert tx.events['Mint'][0]['tokenId'] == 2

```

```
assert nft_flat.balanceOf(other) == 1

assert nft_flat.balanceOf(extra) == 1


tx = nft_flat.safeTransferFrom(other, extra, 1, {"from": other})

assert tx.events['Transfer'][0]['from'] == other

assert tx.events['Transfer'][0]['to'] == extra

assert tx.events['Transfer'][0]['tokenId'] == 1


assert nft_flat.balanceOf(other) == 0

assert nft_flat.balanceOf(extra) == 2


def test_set_mint_price(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    fee_addr = get_account(3)

    mint_price = 0.01e18

    nft_flat = deploy_nft(owner, 1000, 1000000, mint_price, fee_addr)

    with reverts(""):

        nft_flat.setMintPrice(0.5e18, {"from": other})

        assert nft_flat.mintPrice() == mint_price

        nft_flat.setMintPrice(0.5e18, {"from": owner})

        assert nft_flat.mintPrice() == 0.5e18


def test_set_base_uri(only_local):

    # Arrange
```

```

owner = get_account(0)

other = get_account(1)

fee_addr = get_account(3)

mint_price = 0.01e18

nft_flat = deploy_nft(owner, 1000, 1000000, mint_price, fee_addr)

with reverts(""):

    nft_flat.setBaseURI(0.5e18, {"from": other})

    assert nft_flat.baseURI() == "token_uri"

    nft_flat.setBaseURI("new_base_uri", {"from": owner})

    assert nft_flat.baseURI() == "new_base_uri"

```

Test NFT Staking:

```

from brownie import (
    reverts,
)

from scripts.helpful_scripts import (
    ZERO_ADDRESS,
    DAY_TIMESTAMP,
    increase_timestamp,
    get_account,
)

from scripts.deploy import (
    deploy_erc,
    deploy_nft,
    deploy_stake_nft
)

```

```
)
```

  

```
def test_stake(only_local):
```

  

```
    # Arrange
```

  

```
    owner = get_account(0)
```

  

```
    other = get_account(1)
```

  

```
    extra = get_account(2)
```

  

```
    fee_addr = get_account(3)
```

  
  

```
    mint_price = 0.01e18
```

  

```
    nft = deploy_nft(owner, 1000, 1000000, mint_price, fee_addr)
```

  

```
    reward_token = deploy_erc(owner, "test", "test")
```

  

```
    stake_nft = deploy_stake_nft(owner, nft.address, reward_token.address, 10, 1)
```

  
  

```
    # mint nft
```

  

```
    nft.safeMint(other, {"from": other, "value": mint_price})
```

  

```
    # allowance
```

  

```
    nft.approve(stake_nft.address, 1, {"from": other})
```

  
  

```
    tx = stake_nft.stake(1, {"from": other})
```

  

```
    assert tx.events['Transfer'][0]['from'] == other
```

  

```
    assert tx.events['Transfer'][0]['to'] == stake_nft.address
```

  

```
    assert tx.events['Transfer'][0]['tokenId'] == 1
```

  

```
    assert tx.events['Staked'][0]['user'] == other
```

  

```
    assert tx.events['Staked'][0]['tokenId'] == 1
```

  
  

```
    with reverts("Not token owner"):
```

  

```
        stake_nft.stake(1, {"from": other})
```

```
nft.safeMint(other, {"from": other, "value": mint_price})  
with reverts("Max stake limit reached"):  
    stake_nft.stake(2, {"from": other})  
  
# mint nft  
nft.safeMint(extra, {"from": extra, "value": mint_price})  
# allowance  
nft.approve(stake_nft.address, 3, {"from": extra})  
  
tx = stake_nft.stake(3, {"from": extra})  
assert tx.events['Transfer'][0]['from'] == extra  
assert tx.events['Transfer'][0]['to'] == stake_nft.address  
assert tx.events['Transfer'][0]['tokenId'] == 3  
assert tx.events['Staked'][0]['user'] == extra  
assert tx.events['Staked'][0]['tokenId'] == 3  
  
def test_withdraw(only_local):  
    # Arrange  
    owner = get_account(0)  
    other = get_account(1)  
    extra = get_account(2)  
    fee_addr = get_account(3)  
  
    mint_price = 0.01e18  
    nft = deploy_nft(owner, 1000, 1000000, mint_price, fee_addr)  
    reward_token = deploy_erc(owner, "test", "test")  
    stake_nft = deploy_stake_nft(owner, nft.address, reward_token.address, 10, 1)
```

```
# mint nft

nft.safeMint(other, {"from": other, "value": mint_price})

# allowance

nft.approve(stake_nft.address, 1, {"from": other})

# stake

stake_nft.stake(1, {"from": other})


# mint nft

nft.safeMint(extra, {"from": extra, "value": mint_price})

# allowance

nft.approve(stake_nft.address, 2, {"from": extra})

# stake

stake_nft.stake(2, {"from": extra})


with reverts("Not staker"):

    stake_nft.withdraw(2, {"from": other})


tx = stake_nft.withdraw(2, {"from": extra})

assert tx.events['Transfer'][0]['from'] == stake_nft.address

assert tx.events['Transfer'][0]['to'] == extra

assert tx.events['Transfer'][0]['tokenId'] == 2

assert tx.events['Withdrawn'][0]['user'] == extra

assert tx.events['Withdrawn'][0]['tokenId'] == 2


with reverts("Not staker"):

    stake_nft.withdraw(2, {"from": extra})
```

```
def test_claim_reward(only_local):  
  
    # Arrange  
  
    owner = get_account(0)  
  
    other = get_account(1)  
  
    extra = get_account(2)  
  
    fee_addr = get_account(3)  
  
  
    mint_price = 0.01e18  
  
    nft = deploy_nft(owner, 1000, 1000000, mint_price, fee_addr)  
  
    reward_token = deploy_erc(owner, "test", "test")  
  
    stake_nft = deploy_stake_nft(owner, nft.address, reward_token.address, 10, 1)  
  
  
    # mint nft  
  
    nft.safeMint(other, {"from": other, "value": mint_price})  
  
    nft.safeMint(other, {"from": other, "value": mint_price})  
  
    nft.safeMint(other, {"from": other, "value": mint_price})  
  
    # allowance  
  
    nft.approve(stake_nft.address, 1, {"from": other})  
  
    nft.approve(stake_nft.address, 2, {"from": other})  
  
    nft.approve(stake_nft.address, 3, {"from": other})  
  
    # stake  
  
    stake_nft.stake(1, {"from": other})  
  
  
    # mint nft  
  
    nft.safeMint(extra, {"from": extra, "value": mint_price})  
  
    # allowance  
  
    nft.approve(stake_nft.address, 4, {"from": extra})  
  
    # stake
```

```

stake_nft.stake(4, {"from": extra})

increase_timestamp(DAY_TIMESTAMP)

# mint some reward to the contract

reward_token.mint(stake_nft.address, 10e18)

tx = stake_nft.claimReward({"from": other})

assert tx.events['Transfer'][0]['from'] == stake_nft.address
assert tx.events['Transfer'][0]['to'] == other
assert tx.events['RewardClaimed'][0]['user'] == other
assert tx.events['RewardClaimed'][0]['amount'] > 0

def test_set_max_stake_per_addr(only_local):

    # Arrange

    owner = get_account(0)
    other = get_account(1)
    extra = get_account(2)
    fee_addr = get_account(3)

    mint_price = 0.01e18

    nft = deploy_nft(owner, 1000, 1000000, mint_price, fee_addr)
    reward_token = deploy_erc(owner, "test", "test")
    stake_nft = deploy_stake_nft(owner, nft.address, reward_token.address, 10, 1)

    with reverts("UNAUTHORIZED"):

        stake_nft.setMaxStakePerAddress(10, {"from": other})

        assert stake_nft.maxStakePerAddress() == 1

```

```
tx = stake_nft.setMaxStakePerAddress(10, {"from": owner})  
  
assert tx.events['MaxStakePerAddressUpdated'][0]['newLimit'] == 10  
  
assert stake_nft.maxStakePerAddress() == 10
```

Test Stoken:

```
from brownie import (  
  
    reverts,  
  
)  
  
  
from scripts.helpful_scripts import (  
  
    ZERO_ADDRESS,  
  
    DAY_TIMESTAMP,  
  
    increase_timestamp,  
  
    get_account,  
  
)  
  
  
from scripts.deploy import (  
  
    deploy_weth,  
  
    deploy_factory,  
  
    deploy_router,  
  
    deploy_liquidity,  
  
    deploy_erc,  
  
    deploy_nft,  
  
    deploy_stake_nft,  
  
    deploy_stoken  
  
)  
  
  
def test_constructor(only_local):
```

```

# Arrange

owner = get_account(0)

admin_wallet = get_account(8)

weth = deploy_weth(owner)

factory = deploy_factory(owner, owner)

router = deploy_router(owner, factory.address, weth.address)

with reverts("Admin wallet cannot be zero address"):

    deploy_stoken(owner, 1000e18, 10, 10, 10e18, 5e18, 10e18, router.address,
                  ZERO_ADDRESS, admin_wallet, False, 10e18)

with reverts("Owner wallet cannot be zero address"):

    deploy_stoken(owner, 1000e18, 10, 10, 10e18, 5e18, 10e18, router.address,
                  admin_wallet, ZERO_ADDRESS, False, 10e18)

with reverts("Cannot set LpFee more than 10%"):

    deploy_stoken(owner, 1000e18, 20, 10, 10e18, 5e18, 10e18, router.address,
                  admin_wallet, admin_wallet, False, 10e18)

with reverts("Cannot set adminFee more than 30%"):

    deploy_stoken(owner, 1000e18, 10, 40, 10e18, 5e18, 10e18, router.address,
                  admin_wallet, admin_wallet, False, 10e18)

with reverts("Invalid router address"):

    deploy_stoken(owner, 1000e18, 10, 10, 10e18, 5e18, 10e18, ZERO_ADDRESS,
                  admin_wallet, admin_wallet, False, 10e18)

with reverts("Max wallet amount must be at least 0.5% of total supply"):

    deploy_stoken(owner, 1000e18, 10, 10, 10e18, 0, 10e18, router.address,
                  admin_wallet, admin_wallet, False, 10e18)

with reverts("Max transaction amount cannot be less than 0.1% of total supply"):

    deploy_stoken(owner, 1000e18, 10, 10, 0, 500e18, 10e18, router.address,
                  admin_wallet, admin_wallet, False, 10e18)

```

```
    admin_wallet, admin_wallet, False, 10e18)

deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
              admin_wallet, admin_wallet, False, 10e18)

def test_set_token_uri(only_local):
    # Arrange
    owner = get_account(0)
    other = get_account(1)
    admin_wallet = get_account(8)

    weth = deploy_weth(owner)
    factory = deploy_factory(owner, owner)
    router = deploy_router(owner, factory.address, weth.address)
    stoken = deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
                           admin_wallet, admin_wallet, False, 10e18)

    with reverts("Ownable: caller is not the owner"):
        stoken.setTokenURI("some_uri", {"from": other})
        assert stoken.tokenURI() == "some_uri"
        stoken.setTokenURI("new_token_uri", {"from": admin_wallet})
        assert stoken.tokenURI() == "new_token_uri"

def test_set_max_wallet_amount(only_local):
    # Arrange
    owner = get_account(0)
    other = get_account(1)
```

```
admin_wallet = get_account(8)

weth = deploy_weth(owner)

factory = deploy_factory(owner, owner)

router = deploy_router(owner, factory.address, weth.address)

stoken = deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
                       admin_wallet, admin_wallet, False, 10e18)

with reverts("Ownable: caller is not the owner"):

    stoken.setMaxWalletAmount(501e18, {"from": other})

with reverts("Max wallet amount must be at least 0.5% of total supply"):

    stoken.setMaxWalletAmount(1e18, {"from": admin_wallet})

assert stoken._maxWalletAmount() == 500e18

stoken.setMaxWalletAmount(501e18, {"from": admin_wallet})

assert stoken._maxWalletAmount() == 501e18

def test_set_max_wallet_amount(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    admin_wallet = get_account(8)

    weth = deploy_weth(owner)

    factory = deploy_factory(owner, owner)

    router = deploy_router(owner, factory.address, weth.address)

    stoken = deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
                           admin_wallet, admin_wallet, False, 10e18)
```

```

with reverts("Ownable: caller is not the owner"):

    stoken.setAdminFeeThreshold(20e18, {"from": other})

assert stoken.adminFeeThreshold() == 10e18

stoken.setAdminFeeThreshold(20e18, {"from": admin_wallet})

assert stoken.adminFeeThreshold() == 20e18


def test_set_liq_fee_percent(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    admin_wallet = get_account(8)

    weth = deploy_weth(owner)

    factory = deploy_factory(owner, owner)

    router = deploy_router(owner, factory.address, weth.address)

    stoken = deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
                           admin_wallet, admin_wallet, False, 10e18)

    with reverts("Ownable: caller is not the owner"):

        stoken.setLiquidityFeePercent(5, {"from": other})

    with reverts("Cannot exceed the max liquidity fee"):

        stoken.setLiquidityFeePercent(15, {"from": admin_wallet})

    assert stoken._liquidityFee() == 10

    stoken.setLiquidityFeePercent(5, {"from": admin_wallet})

    assert stoken._liquidityFee() == 5


def test_set_admin_fee_perc(only_local):

```

```
# Arrange

owner = get_account(0)
other = get_account(1)
extra = get_account(2)
admin_wallet = get_account(8)

weth = deploy_weth(owner)
factory = deploy_factory(owner, owner)
router = deploy_router(owner, factory.address, weth.address)
stoken = deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
                       admin_wallet, admin_wallet, False, 10e18)

with reverts("Ownable: caller is not the owner"):
    stoken.setAdminFeePercent(5, {"from": other})

with reverts("Cannot exceed the max admin fee"):
    stoken.setAdminFeePercent(15, {"from": admin_wallet})

assert stoken._adminFee() == 10
stoken.setAdminFeePercent(5, {"from": admin_wallet})
assert stoken._adminFee() == 5

def test_set_admin_wallet(only_local):
    # Arrange

    owner = get_account(0)
    other = get_account(1)
    extra = get_account(2)
    admin_wallet = get_account(8)

    weth = deploy_weth(owner)
```

```
factory = deploy_factory(owner, owner)

router = deploy_router(owner, factory.address, weth.address)

stoken = deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
                      admin_wallet, admin_wallet, False, 10e18)

with reverts("Ownable: caller is not the owner"):

    stoken.setAdminWallet(extra, {"from": other})

with reverts("Admin wallet cannot be zero address"):

    stoken.setAdminWallet(ZERO_ADDRESS, {"from": admin_wallet})

assert stoken._adminWallet() == admin_wallet

stoken.setAdminWallet(extra, {"from": admin_wallet})

assert stoken._adminWallet() == extra

def test_set_max_tx_amount(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    admin_wallet = get_account(8)

    weth = deploy_weth(owner)

    factory = deploy_factory(owner, owner)

    router = deploy_router(owner, factory.address, weth.address)

    stoken = deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
                          admin_wallet, admin_wallet, False, 10e18)

    with reverts("Ownable: caller is not the owner"):

        stoken.setMaxTxAmount(50e18, {"from": other})
```

```

with reverts("Max transaction amount cannot be less than 0.1% of total supply"):

    stoken.setMaxTxAmount(0.5e18, {"from": admin_wallet})

assert stoken._maxTxAmount() == 100e18

stoken.setMaxTxAmount(50e18, {"from": admin_wallet})

assert stoken._maxTxAmount() == 50e18


def test_set_max_tx_amount(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)

    extra = get_account(2)

    admin_wallet = get_account(8)

    weth = deploy_weth(owner)

    factory = deploy_factory(owner, owner)

    router = deploy_router(owner, factory.address, weth.address)

    stoken = deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
                           admin_wallet, admin_wallet, False, 10e18)

    with reverts("Ownable: caller is not the owner"):

        stoken.setMaxTxAmount(50e18, {"from": other})

    with reverts("Max transaction amount cannot be less than 0.1% of total supply"):

        stoken.setMaxTxAmount(0.5e18, {"from": admin_wallet})

    assert stoken._maxTxAmount() == 100e18

    stoken.setMaxTxAmount(50e18, {"from": admin_wallet})

    assert stoken._maxTxAmount() == 50e18


def test_transfer(only_local):

```

```

# Arrange

owner = get_account(0)
other = get_account(1)
extra = get_account(2)
admin_wallet = get_account(8)

weth = deploy_weth(owner)
factory = deploy_factory(owner, owner)
router = deploy_router(owner, factory.address, weth.address)
stoken = deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
                       admin_wallet, admin_wallet, False, 10e18)

pair = stoken.uniswapV2Pair()

with reverts("ERC20: transfer from the zero address"):
    stoken.transfer(other, 1e18, {"from": ZERO_ADDRESS})

with reverts("ERC20: transfer to the zero address"):
    stoken.transfer(ZERO_ADDRESS, 1e18, {"from": other})

with reverts("Transfer amount must be greater than zero"):
    stoken.transfer(extra, 0, {"from": other})

with reverts("Insufficient balance"):
    stoken.transfer(extra, 1e18, {"from": other})

with reverts("Max wallet amount exceeded"):
    stoken.transfer(extra, 600e18, {"from": other})

tx = stoken.transfer(other, 5e18, {"from": admin_wallet})
assert tx.events['Transfer'][0]['from'] == admin_wallet
assert tx.events['Transfer'][0]['to'] == other

```

```
assert tx.events['Transfer'][0]['value'] == 5e18

tx = stoken.transfer(extra, 2e18, {"from": other})

assert tx.events['Transfer'][0]['from'] == other
assert tx.events['Transfer'][0]['to'] == extra
assert tx.events['Transfer'][0]['value'] == 2e18

# 10% lp fee + 10% adm fee

tx = stoken.transfer(pair, 1e18, {"from": other})

assert tx.events['Transfer'][0]['from'] == other
assert tx.events['Transfer'][0]['to'] == pair
assert tx.events['Transfer'][0]['value'] == 0.8e18

tx = stoken.transfer(other, 0.8e18, {"from": pair})

assert tx.events['Transfer'][0]['from'] == pair
assert tx.events['Transfer'][0]['to'] == other
assert tx.events['Transfer'][0]['value'] == 0.64e18

stoken = deploy_stoken(owner, 1000e18, 10, 10, 100e18, 500e18, 10e18, router.address,
admin_wallet, admin_wallet, True, 10e18)

pair = stoken.uniswapV2Pair()

tx = stoken.transfer(other, 5e18, {"from": admin_wallet})

assert tx.events['Transfer'][0]['from'] == admin_wallet
assert tx.events['Transfer'][0]['to'] == other
assert tx.events['Transfer'][0]['value'] == 5e18

# 10% lp fee + 10% adm fee
```

```
tx = stoken.transfer(extra, 2e18, {"from": other})

assert tx.events['Transfer'][0]['from'] == other
assert tx.events['Transfer'][0]['to'] == extra
assert tx.events['Transfer'][0]['value'] == 1.6e18
```

Test Token Vesting:

```
from brownie import (
    reverts,
)

from scripts.helpful_scripts import (
    ZERO_ADDRESS,
    DAY_TIMESTAMP,
    increase_timestamp,
    get_timestamp,
    get_account,
)

from scripts.deploy import (
    deploy_erc,
    deploy_token_vesting
)

def test_create_vesting(only_local):
    # Arrange
    owner = get_account(0)
    other = get_account(1)
    extra = get_account(2)
```

```
token = deploy_erc(owner, "test", "test")

token_vesting = deploy_token_vesting(owner, token.address)

with reverts("UNAUTHORIZED"):

    token_vesting.createVestingSchedule(b"name", extra, get_timestamp(),
                                         DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, DAY_TIMESTAMP, True, 1e18,
                                         {"from": other})

with reverts("TokenVesting: cannot create vesting schedule because not sufficient
tokens"):

    token_vesting.createVestingSchedule(b"name", extra, get_timestamp(),
                                         DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, DAY_TIMESTAMP, True, 1e18,
                                         {"from": owner})

token.mint(token_vesting.address, 10e18)

with reverts("TokenVesting: duration must be > 0"):

    token_vesting.createVestingSchedule(b"name", extra, get_timestamp(),
                                         DAY_TIMESTAMP * 10, 0, DAY_TIMESTAMP, True, 1e18,
                                         {"from": owner})

with reverts("TokenVesting: amount must be > 0"):

    token_vesting.createVestingSchedule(b"name", extra, get_timestamp(),
                                         DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, DAY_TIMESTAMP, True, 0,
                                         {"from": owner})

with reverts("TokenVesting: beneficiary cannot be the zero address"):

    token_vesting.createVestingSchedule(b"name", ZERO_ADDRESS, get_timestamp(),
                                         DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, DAY_TIMESTAMP, True, 1e18,
                                         {"from": owner})

with reverts("TokenVesting: slicePeriodSeconds must be >= 1"):
```

```

    token_vesting.createVestingSchedule(b"name", extra, get_timestamp(),
                                         DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, 0, True, 1e18,
                                         {"from": owner})

with reverts("TokenVesting: duration must be >= cliff"):

    token_vesting.createVestingSchedule(b"name", extra, get_timestamp(),
                                         DAY_TIMESTAMP * 15, DAY_TIMESTAMP * 10, DAY_TIMESTAMP, True, 1e18,
                                         {"from": owner})

tx = token_vesting.createVestingSchedule(b"name", extra, get_timestamp(),
                                         DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, DAY_TIMESTAMP, True, 1e18,
                                         {"from": owner})

vesting_schedule_id = tx.events['VestingScheduleCreated'][0]['vestingScheduleId']

assert tx.events['VestingScheduleCreated'][0]['beneficiary'] == extra
assert tx.events['VestingScheduleCreated'][0]['amount'] == 1e18


def test_revoke(only_local):

    # Arrange
    owner = get_account(0)
    other = get_account(1)
    extra = get_account(2)

    token = deploy_erc(owner, "test", "test")
    token_vesting = deploy_token_vesting(owner, token.address)
    token.mint(token_vesting.address, 10e18)

    tx = token_vesting.createVestingSchedule(b"name", extra, get_timestamp(),
                                             DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, DAY_TIMESTAMP, True, 1e18,
                                             {"from": owner})

    vesting_schedule_id = tx.events['VestingScheduleCreated'][0]['vestingScheduleId']

```

```
with reverts("UNAUTHORIZED"):

    token_vesting.revoke(vesting_schedule_id, {"from": other})




tx = token_vesting.createVestingSchedule(b"name", extra, get_timestamp(),
                                         DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, DAY_TIMESTAMP, False, 1e18,
                                         {"from": owner})

vesting_schedule_id_not_revoke =
tx.events['VestingScheduleCreated'][0]['vestingScheduleId']


with reverts("TokenVesting: vesting is not revocable"):

    token_vesting.revoke(vesting_schedule_id_not_revoke, {"from": owner})


token_vesting.revoke(vesting_schedule_id, {"from": owner})

with reverts(""):

    token_vesting.revoke(vesting_schedule_id, {"from": owner})


def test_withdraw(only_local):

    # Arrange

    owner = get_account(0)

    other = get_account(1)


    token = deploy_erc(owner, "test", "test")

    token_vesting = deploy_token_vesting(owner, token.address)

    with reverts("UNAUTHORIZED"):

        token_vesting.withdraw(1e18, {"from": other})

    with reverts("TokenVesting: not enough withdrawable funds"):

        token_vesting.withdraw(1e18, {"from": owner})

    token.mint(token_vesting.address, 10e18)
```

```

tx = token_vesting.withdraw(1e18, {"from": owner})

assert tx.events['Transfer'][0]['from'] == token_vesting.address
assert tx.events['Transfer'][0]['to'] == owner
assert tx.events['Transfer'][0]['value'] == 1e18


tx = token_vesting.withdraw(2e18, {"from": owner})

assert tx.events['Transfer'][0]['from'] == token_vesting.address
assert tx.events['Transfer'][0]['to'] == owner
assert tx.events['Transfer'][0]['value'] == 2e18


def test_release(only_local):

    # Arrange

    owner = get_account(0)
    other = get_account(1)
    extra = get_account(2)

    token = deploy_erc(owner, "test", "test")
    token_vesting = deploy_token_vesting(owner, token.address)

    with reverts("TokenVesting: only beneficiary and owner can release vested tokens"):

        token_vesting.release(b'random_vesting', {"from": extra})

        with reverts("Vested amount is 0"):

            token_vesting.release(b'random_vesting', {"from": owner})


    token.mint(token_vesting.address, 10e18)

    tx = token_vesting.createVestingSchedule(b"name", other, get_timestamp(),
                                             DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, DAY_TIMESTAMP, True, 1e18,
                                             {"from": owner})

    vesting_schedule_id = tx.events['VestingScheduleCreated'][0]['vestingScheduleId']

```

```

tx = token_vesting.createVestingSchedule(b"name", extra, get_timestamp(),
                                         DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, DAY_TIMESTAMP, False, 1e18,
                                         {"from": owner})

vesting_schedule_id_not_revoke =
tx.events['VestingScheduleCreated'][0]['vestingScheduleId']


with reverts("TokenVesting: only beneficiary and owner can release vested tokens"):
    token_vesting.release(vesting_schedule_id, {"from": extra})
    token_vesting.revoke(vesting_schedule_id, {"from": owner})
    with reverts(""):
        token_vesting.release(vesting_schedule_id, {"from": other})

with reverts("Vested amount is 0"):
    token_vesting.release(vesting_schedule_id_not_revoke, {"from": extra})


increase_timestamp(DAY_TIMESTAMP * 15)

tx = token_vesting.release(vesting_schedule_id_not_revoke, {"from": extra})
assert tx.events['Transfer'][0]['from'] == token_vesting.address
assert tx.events['Transfer'][0]['to'] == extra
assert tx.events['Transfer'][0]['value'] > 0
assert tx.events['Transfer'][0]['value'] < 1e18


tx = token_vesting.createVestingSchedule(b"name", other, get_timestamp(),
                                         DAY_TIMESTAMP * 10, DAY_TIMESTAMP * 15, DAY_TIMESTAMP, True, 1e18,
                                         {"from": owner})

vesting_schedule_id = tx.events['VestingScheduleCreated'][0]['vestingScheduleId']
increase_timestamp(DAY_TIMESTAMP * 15)

```

```
tx = token_vesting.revoke(vesting_schedule_id, {"from": owner})  
  
assert tx.events['Transfer'][0]['from'] == token_vesting.address  
  
assert tx.events['Transfer'][0]['to'] == other  
  
assert tx.events['Transfer'][0]['value'] > 0  
  
assert tx.events['Transfer'][0]['value'] < 1e18
```

# Technical Findings Summary

## Findings

Vulnerability Level	Total	Pending	Not Apply	Acknowledged	Partially Fixed	Fixed
● High						
● Medium	4					
● Low	3					
● Informational	3					

# Assessment Results

## Score Results

Review	Score
<b>Global Score</b>	<b>80/100</b>
Assure KYC	<a href="https://assureddefi.com/projects/coincreate/">https://assureddefi.com/projects/coincreate/</a>
Audit Score	75/100

The Following Score System Has been Added to this page to help understand the value of the audit, the maximum score is 100, however to attain that value the project must pass and provide all the data needed for the assessment. Our Passing Score has been changed to 84 Points for a higher standard, if a project does not attain 85% is an automatic failure. Read our notes and final assessment below. The Global Score is a combination of the evaluations obtained between having or not having KYC and the type of contract audited together with its manual audit.

## **Audit FAIL**

Following our comprehensive security audit of the token contract for the Coincreate project, we inform you that the cybersecurity audit has failed due to multiple medium issues identified during the review, which pose significant risks to the contract's functionality and security. Immediate remediation is required to address these vulnerabilities.

# Disclaimer

Assure Defi has conducted an independent security assessment to verify the integrity of and highlight any vulnerabilities or errors, intentional or unintentional, that may be present in the reviewed code for the scope of this assessment. This report does not constitute agreement, acceptance, or advocating for the Project, and users relying on this report should not consider this as having any merit for financial adCoincreate in any shape, form, or nature. The contracts audited do not account for any economic developments that the Project in question may pursue, and the veracity of the findings thus presented in this report relate solely to the proficiency, competence, aptitude, and discretion of our independent auditors, who make no guarantees nor assurance that the contracts are entirely free of exploits, bugs, vulnerabilities or depreciation of technologies.

All information provided in this report does not constitute financial or investment adCoincreate, nor should it be used to signal that any person reading this report should invest their funds without sufficient individual due diligence, regardless of the findings presented. Information is provided ‘as is, and Assure Defi is under no covenant to audit completeness, accuracy, or solidity of the contracts. In no event will Assure Defi or its partners, employees, agents, or parties related to the provision of this audit report be liable to any parties for, or lack thereof, decisions or actions with regards to the information provided in this audit report.

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