



**INSPECTOR
LOVELY**

SMART CONTRACT

SECURITY AUDIT

**LOVELY SWAP
(DEX)**

inspector.lovely.finance



TABLE OF CONTENTS

Table of Contents	2
Disclaimer	3
Procedure	4
Terminology	5
Limitations	5
Basic Security Recommendation	5
Audit Details	6
Social Profiles	6
Project Website Overview	7
Project website SSL Certificate	7
Vulnerabilities Checking	8
Security Issues	9
Conclusion for Project Owner	10
INSPECTOR Lovely info	11



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DISCLAIMER

This is a comprehensive report based on our automated and manual examination of cybersecurity vulnerabilities and framework flaws of the project's smart contract. Reading the full analysis report is essential to build your understanding of project's security level. It is crucial to take note, though we have done our best to perform this analysis and report, that you should not rely on the our research and cannot claim what it states or how we created it. Before making any judgments, you have to conduct your own independent research. We will discuss this in more depth in the following disclaimer - please read it fully. **DISCLAIMER:** You agree to the terms of this disclaimer by reading this report or any portion thereof. Please stop reading this report and remove and delete any copies of this report that you download and/or print if you do not agree to these conditions. Scan and verify report's presence in the GitHub repository by a qr-code at the title page. This report is for non-reliability information only and does not represent investment advice. No one shall be entitled to depend on the report or its contents, and Inspector Lovely and its affiliates shall not be held responsible to you or anyone else, nor shall Inspector Lovely provide any guarantee or representation to any person with regard to the accuracy or integrity of the report. Without any terms, warranties or other conditions other than as set forth in that exclusion and Inspector Lovely excludes hereby all representations, warrants, conditions and other terms (including, without limitation, guarantees implied by the law of satisfactory quality, fitness for purposes and the use of reasonable care and skills). The report is provided as "as is" and does not contain any terms and conditions. Except as legally banned, Inspector Lovely disclaims all responsibility and responsibilities and no claim against Inspector Lovely is made to any amount or type of loss or damages (without limitation, direct, indirect, special, punitive, consequential or pure economic loses or losses) that may be caused by you or any other person, or any damages or damages, including without limitations (whether innocent or negligent). Security analysis is based only on the smart contracts. No applications or operations were reviewed for security. No product code has been reviewed.



PROCEDURE

Our analysis contains following steps:

1. Project Analysis;

2. Manual analysis of smart contracts:

- Deploying smart contracts on any of the network(Ropsten/Rinkeby) using Remix IDE
- Hashes of all transaction will be recorded
- Behaviour of functions and gas consumption is noted, as well.

3. Unit Testing:

- Smart contract functions will be unit tested on multiple parameters and under multiple conditions to ensure that all paths of functions are functioning as intended.
- In this phase intended behaviour of smart contract is verified.
- In this phase, we would also ensure that smart contract functions are not consuming unnecessary gas.
- Gas limits of functions will be verified in this stage.

4. Automated Testing:

- Mythril
- Oyente
- Manticore
- Solgraph



TERMINOLOGY

We categorize the finding into 4 categories based on their vulnerability:

- Low-severity issue - less important, must be analyzed
- Medium-severity issue - important, needs to be analyzed and fixed
- High-severity issue - important, might cause vulnerabilities, must be analyzed and fixed
- Critical-severity issue - serious bug causes, must be analyzed and fixed.

LIMITATIONS

The security audit of Smart Contract cannot cover all vulnerabilities. Even if no vulnerabilities are detected in the audit, there is no guarantee that future smart contracts are safe, Smart contracts are in most cases safeguarded against specific sorts of attacks. In order to find as many flaws as possible we carried out a comprehensive smart contract audit. Audit is a document that is not legally binding and guarantees nothing.



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BASIC SECURITY RECOMMENDATION

Unlike hardware and paper wallets, hot wallets are connected to the internet and store private keys online, which exposes them to greater risk. If a company or an individual holds significant amounts of cryptocurrency in a hot wallet, they should consider using MultiSig addresses. Wallet security is enhanced when private keys are stored in different locations and are not controlled by a single entity.



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LOVELY SWAP (DEX)

Project name: **Lovely Swap**

Language: **Solidity**

Blockchain: **BSC**

SOCIAL PROFILES

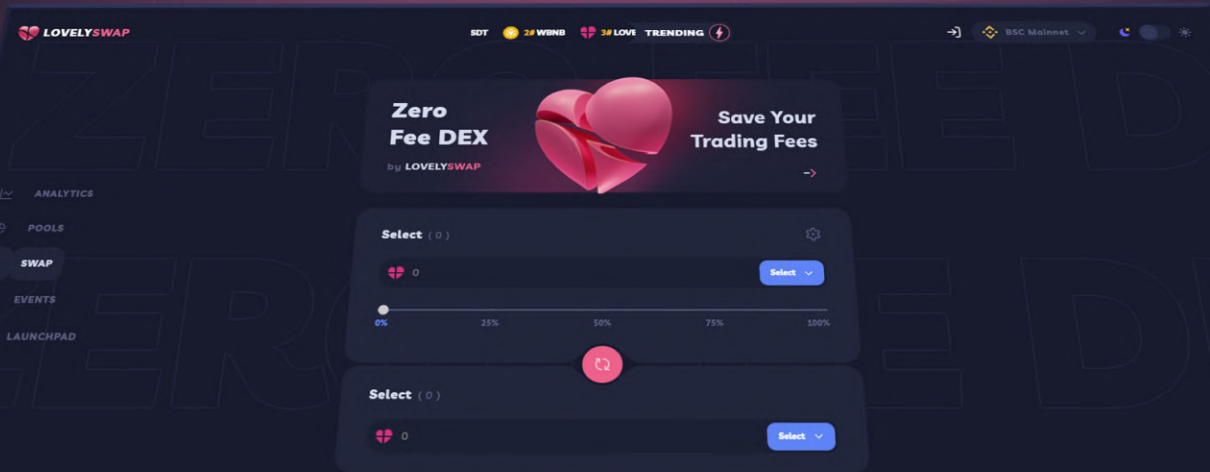
Project website: www.lovelyswap.com

Project Twitter: https://twitter.com/lovely_swap/

Project Telegram: <https://t.me/lovelyswap>



PROJECT WEBSITE OVERVIEW



- ✔ JavaScript errors hasn't been found.
- ✔ Malware pop-up windows hasn't been detected.
- ✔ No issues with loading elements, code, or stylesheets.

PROJECT WEBSITE SSL CERTIFICATION

Issued To

Common Name (CN)	*.lovelyswap.com
Organization (O)	<Not Part Of Certificate>
Organization Unit (OU)	<Not Part Of Certificate>

Issued By

Common Name (CN)	GTS CA 1P5
Organization (O)	Google Trust Services LLC
Organization Unit (OU)	<Not Part Of Certificate>



VULNERABILITIES CHECKING

ISSUE DESCRIPTION

CHECKING STATUS

Compiler Errors	Completed
Delays in Data Delivery	Completed
Re-entrancy	Completed
Transaction-Ordering Dependence	Completed
Timestamp Dependence	Completed
Shadowing State Variables	Completed
DoS with Failed Call	Completed
DoS with Block Gas Limit	Completed
Outdated Compiler Version	Completed
Assert Violation	Completed
Use of Deprecated Solity Functions	Completed
Integer Overflow and Underflow	Completed
Function default Visibility	Completed
Malicious Event log	Completed
Math Accuracy	Completed
Design Logic	Completed
Fallback Function Security	Completed
Cross-Function race conditions	Completed
Safe Zeppelin Module	Completed



SECURITY ISSUES

1) Improper Array Deletion: **Medium-severity:** `/contracts/LOVELYLaunchpad/LOVELYILO.sol`

Elements inside Arrays in solidity can be deleted using `delete` or `.length = 0` directives. However, this will NOT shift the elements in your array and will leave an element of string `0` in your array. When a new element is added to the same array, the size of the array keeps on increasing if the length is not adjusted for the deleted element. This creates gigantic arrays and may lead to an Out-of-Gas exception.

Status: Resolved



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CONCLUSION FOR PROJECT OWNER

Smart-contracts are free from any high or medium-severity issues.

NOTE: Please check the disclaimer above and note, that audit makes no statements or warranties on business model, investment attractiveness or code sustainability. Contract security report for community



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INFO

Website: inspector.lovely.finance

Telegram community: t.me/inspectorlovely

Twitter community: <https://twitter.com/inspectorlovely/>

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