

The importance of research

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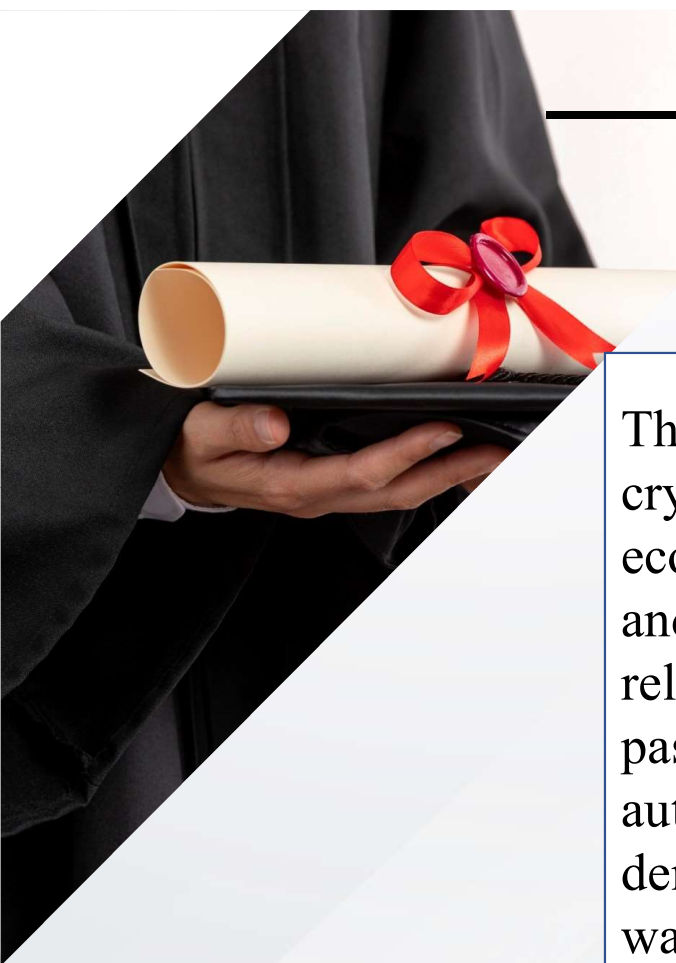
Literary Criticism (1)

Task 4

A Security Analysis of Cryptocurrency Wallets against Password Brute-Force Attacks.

INTRODUCTION

In this video, I present my analysis of Assignment 5, which focuses on the importance of research. I chose a recent article published in 2024 by Byun, Kim, Jeong, and their colleagues, titled: **A Security Analysis of Cryptocurrency Wallets against Password Brute-Force Attacks**. This article explores the vulnerabilities of cryptocurrency wallets against brute-force attacks, a critical issue in the field of modern cybersecurity.



Context and justification

This research is important for several reasons. Firstly, cryptocurrencies are taking an increasing place in our digital economy. Millions of users use digital wallets to store, transfer, and protect their assets. However, the security of these wallets often relies solely on a password chosen by the user. The problem is that passwords can be weak, poorly chosen, or easily guessed by automated attack programs, such as brute-force attacks. The article demonstrates that, even with modern implementations, some wallets remain vulnerable to these attacks if the user has not applied good practices. This situation makes the research very relevant, as it aims to prevent potentially irreversible financial losses.

Scope of the research and its contributions

This study provides several essential contributions:

- 1) It conducts simulations of brute force attacks on several types of popular wallets.
- 2) It evaluates the actual robustness of locking systems by measuring the time required to break different passwords.
- 3) It identifies users' risky behaviors:
for example, those who use simple passwords, birth dates, or common names.
- 4) Finally, it proposes concrete solutions, such as adding a progressive delay after multiple failed attempts, or using complex and unique passwords.

This contribution is therefore not only practical but also preventive, as it raises awareness among developers, businesses, and individuals about real risks.

Scientific relevance and social impact

From a scientific point of view, this research fuels current debates on the limits of password protection. It shows that, even in an advanced technological environment, security still relies on simple human decisions, such as the choice of a password. The impact is also social and economic: Many losses of cryptocurrencies are not due to sophisticated hacks, but to simple attacks that could have been avoided. By studying these vulnerabilities, the article helps to strengthen the resilience of crypto ecosystems and to protect users from themselves.

Limits and suggestions

Despite the interest in the research, certain limitations can be noted: The article focuses on specific wallets and does not cover all platforms on the market. It would have been interesting to include an ethical or legal aspect, especially regarding the security tests conducted.

- ❑ A suggestion would be to broaden the study to include a comparison with other authentication methods, such as biometric keys, passphrases, or multi-factor wallets.

CONCLUSION

In conclusion, this research is essential for better understanding the potential weaknesses of cryptocurrency portfolios. It plays an important role in preventing cyberattacks, educating users, and designing more robust systems. The importance of this research is undeniable in a world where digital security becomes a pillar of trust.

Thank you for your attention.

Bibliographic reference of the studied article

Byun, H., Kim, J., Jeong, Y., Seok, B., Gong, S., & Lee, C.
(2024).

**A Security Analysis of Cryptocurrency Wallets against
Password Brute-Force Attacks.**

Electronics, 13(13), 2433

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