

Bachelor's Thesis Assignment



145021

Institut: Department of Intelligent Systems (UITs)
Student: **Remeň Matúš**
Programme: Information Technology
Specialization: Information Technology
Title: **Monitoring and Reporting Tool for Cloned Vulnerabilities across Open-Source Projects**
Category: Security
Academic year: 2022/23

Assignment:

1. Get familiar with code clone types and frameworks that automatize their detection.
2. Study existing solutions for detection of vulnerabilities in open-source projects; analyze their properties and achieved results.
3. Get acquainted with vulnerability databases and their notations, such as CVE and CPE.
4. Propose a tool for semi-automated scanning of the set of monitored open-source projects using vulnerability intelligence and code-development analysis.
5. Implement and evaluate the proposed tool on the set of open-source projects selected by the supervisor.

Literature:

- Hum, Qingze, et al. "CoinWatch: A clone-based approach for detecting vulnerabilities in cryptocurrencies." *2020 IEEE International Conference on Blockchain (Blockchain)*. IEEE, 2020.
- Aliyev, Rashad and Pealver, Lourdes. "Analyzing Vulnerability Databases." *2016 10th IEEE International Conference on Application of Information and Communication Technologies*. IEEE, 2016.

Requirements for the semestral defence:

The first three items from the assignment.

Detailed formal requirements can be found at <https://www.fit.vut.cz/study/theses/>

Supervisor: **Holop Patrik, Ing.**
Consultant: Ing. Ivan Homoliak, Ph.D.
Head of Department: Hanáček Petr, doc. Dr. Ing.
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