Department of Information Systems (DIFS)   Academic year 2019/2020

Master's Thesis Specification

22862

Student: **Múčka Matúš, Bc.**

Programme: Information Technology   Field of study: Information Systems

Title: **Processing of the Blockchain Employing IPFS**

Category: Networking

Assignment:

1. Learn about cryptocurrencies and other blockchain technologies (namely, Ethereum, Bitcoin, DigiByte, Decred, Monero).
2. Study the Interplanetary File System, the principles of network communication, distribution and content addressing.
3. Design a prototype of the IPFS connector for generic blockchain access in compliance with the supervisor's recommendations.
4. Implement a prototype that delivers demanded functionality on a particular blockchain of considerable size. Write the API for integration with other applications.
5. Perform validation testing and measure prototype performance characteristics. Discuss possible extensions.

Recommended literature:

- Narayanan, A., Bonneau, J., Felten, E., Miller, A., & Goldfeder, S. (2016). *Bitcoin and Cryptocurrency Technologies: A Comprehensive Introduction*. Princeton University Press.
- Bitpay, *Guides - Bitcore*, [online] https://bitcore.io/guides, [2018-10-19].

Requirements for the semestral defence:

- Tasks 1, 2 and 3.

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

Supervisor: **Veselý Vladimír, Ing., Ph.D.**

Head of Department: Kolář Dušan, doc. Dr. Ing.

Beginning of work: November 1, 2019

Submission deadline: June 3, 2020

Approval date: October 22, 2019