Brno University of Technology
Faculty of Information Technology

Department of Information Systems (DIFS) Academic year 2018/2019

Master's Thesis Specification

Student: **Hornický Michal, Bc.**
Programme: Information Technology Field of study: Information Systems
Title: **Design and Implementation of Distributed System for Algorithmic Trading**
Category: Information Systems
Assignment:

1. Research programming models and paradigms used to create scalable distributed applications. Study existing approaches to high-frequency algorithmic trading.
2. Select suitable programming model and propose a set of technologies for implementation of distributed system for algorithmic trading using this model. Analyse requirements and design the system.
3. After consulting with the supervisor, implement the system using the proposed technologies. Measure performance and scalability of the resulting system and evaluate the impact of selected technologies on the system.
4. Describe, evaluate and publish the results as an open source.

Recommended literature:

- Arden Agopyan, Emrah Sener, Ali Beklen. Financial business cloud for high-frequency trading. Cloud Computing 2010, IARIA, 2010. ISBN978-1-61208-106-9.
- Camilo Rostoker, Alan Wagner, and Holger Hoos. A parallel workflow for real-time correlation and clustering of high-frequency stock market data. Parallel and Distributed Processing Symposium 2007, IEEE International, 2007.
- Maarten Van Steen, Stefan Van der Zijden, Henk J. Sips. Software engineering for the scalable distributed applications. Computer Software and Applications Conference, IEEE, 1998.

Requirements for the semestral defence:

- Items 1 and 2.

Detailed formal requirements can be found at http://www.fit.vutbr.cz/info/szz/

Supervisor: **Rychlý Marek, RNDr., Ph.D.**
Head of Department: Kolář Dušan, doc. Dr. Ing.
Beginning of work: November 1, 2018
Submission deadline: May 22, 2019
Approval date: October 23, 2018