

I. Personal and study details

Student's name: **Hořovský Tomáš**

Personal ID number: **456997**

Faculty / Institute: **Faculty of Electrical Engineering**

Department / Institute: **Department of Cybernetics**

Study program: **Open Informatics**

Branch of study: **Computer and Information Science**

II. Bachelor's thesis details

Bachelor's thesis title in English:

Finite Automata Drawing Platform

Bachelor's thesis title in Czech:

Platforma pro kreslení diagramů konečných automatů

Guidelines:

Design and implement a programming platform based on TikZ language for producing vector graphics. The aim of the platform is automatic or semi-automatic creation of finite automata diagrams and integration of the diagrams into documents written in TeX system. Exploit a suitable existing graph diagrams drawing program in the platform and use the drawing program output to determine the layout of the diagram and its elements, or other diagram properties if necessary. Implement software tools which will allow the user to manage and to modify programmatically the appearance of the diagrams generated by the platform.

Choose a suitable formalized text description of the automata and use it as a platform input format. Consider also a possibility of extending the platform by additional procedures processing regular grammars and regular expressions. The platform should run on common personal computer operating systems. Write an appropriate programmer and user documentation of the platform.

Bibliography / sources:

- [1] J. E. Hopcroft, R. Motwani, J. D. Ullman: Introduction to Automata Theory, Languages, and Computation (3rd Edition), Addison Wesley; 3 edition (July 15, 2006)
- [2] B. Melichar: Jazyky a překlady, Praha, ČVUT 2003
- [3] [Online] M. Demlová: Jazyky, automaty a gramatiky, elektronická skripta, FEL ČVUT, 2018, (http://math.feld.cvut.cz/demlova/teaching/jag/predn_jag.html)
- [4] [Online] <http://www.graphviz.org/>
- [5] [Online] <http://www.graphdrawing.org/>

Name and workplace of bachelor's thesis supervisor:

RNDr. Marko Genyk-Berezovskyj, Department of Cybernetics, FEE

Name and workplace of second bachelor's thesis supervisor or consultant:

Date of bachelor's thesis assignment: **06.06.2018** Deadline for bachelor thesis submission: **08.01.2019**

Assignment valid until: **16.02.2020**

RNDr. Marko Genyk-Berezovskyj
Supervisor's signature

doc. Ing. Tomáš Svoboda, Ph.D.
Head of department's signature

prof. Ing. Pavel Ripka, CSc.
Dean's signature

III. Assignment receipt

The student acknowledges that the bachelor's thesis is an individual work. The student must produce his thesis without the assistance of others, with the exception of provided consultations. Within the bachelor's thesis, the author must state the names of consultants and include a list of references.

Date of assignment receipt

Student's signature