**Interactive learning for automata theory and formal languages**

SE-B-11

Maram Alasad ; maramalasad9@gmail.com   
Tasneem Abulail ; abulieltasneem23@gmail.com

Advisor: Dr. Yochai Twitto

SCE - Shamoon College of Engineering, Be'er-Sheva

The complexity of automata theory and formal languages often renders these subjects abstract and challenging for learners. Our project develops a platform that enhances understanding through interactive and visual tools, simplifying intricate concepts like deterministic finite automata (DFA) and nondeterministic finite automata (NFA). This tool is divided into three educational sections: grammars, automations, and languages. Each section is designed to facilitate both theoretical engagement and practical application, providing an invaluable resource for students, educators, and self-learners alike. By integrating dynamic visualizations with hands-on exercises, our platform aims to make these fundamental computer science topics more accessible and engaging, ultimately improving educational outcomes.

Keywords: automata theory, educational tool, formal languages, interactive learning, visualization