Antontsev Dmitry

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dmitry131131

Education

MIPT
Radio engineering and computer technology, Applied Mathematics and Physics
Coursework: course in system programming and compiler technologies by Ilya Dedinsky

GPA(informatics):	**9.0/10**
GPA(general):	**7.15/10**

Hard skills

- **Languages:** C/C++, x86-64 ASM, Python, LaTeX
- **Libraries:** SFML, graphviz, Matplotlib
- **Tools:** Linux, Git, Make, Valgrind, EDB, Ghidra

Soft skills

Quick involvement in work, the ability to study theory for a long time, sociability

Languages

- Russian
- English

MAIN PROJECTS

C projects

Compiler — January – May 2024

Link: https://github.com/dmitry131131/DIY_Language

This project is a programming language compiler that can be used to compile programs into an elf file for x86-64 architecture or into bytecode for virtual CPU

Virtual CPU — November 2023

Link: https://github.com/dmitry131131/Simple_processor

The processor (virtual machine) can execute programs written in a special language (special assembler). The processor also has a separate video core, which allows you to display black and white images on the screen.

Protected stack — October 2023

Link: https://github.com/dmitry131131/Stack_task

This is a library that implements a stack data type. A special feature of this solution is the high reliability of the stack from the influence of other programs. The stack is protected by canary protection and is also hashed.

Differentiator — December 2023

Link: https://github.com/dmitry131131/Differentiator

Program for calculating derivatives of functions. The main task is to work with the tree, simplify it and make informative graphic dumps of tree.
The program also makes PDF report about the differentiation process.

C + Asm projects

Mandelbrot-Set & Alpha Blending — March 2024

Link: https://github.com/dmitry131131/SIMD_project

This program generates and visualizes the Mandelbrot set and blends two images in several different ways. Also implemented optimizations using AVX instructions and analyzed their effectiveness.

Hash-table — April 2024

Link: https://github.com/dmitry131131/Hash_table

In this project I analyzed the load-factor of 7 different hash functions. Also I made profile-guided optimization using Callgrind with graphs and detailed descriptions. For example I used inline functions, asm functions and intel intrinsics.

Other achievements

Prize-winner of the All-Russian Olympiad for schoolchildren in physics — April 2023

Prize-winner of the International Experimental Physics Olympiad — December 2022