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.

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