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Personal information

I'm 1-year Bachelor of the Department of Applied Mathematics and Computer Science at the Moscow Institute of Physics and Technology. The main direction of development is system programming. I have skills in creating projects, debugging, and code optimization. GPA = 7.71/10.

Main project

Processor

Simulation of processor operation. The program accepts assembler code as input, converts it to binary format, and then executes this program. To reduce copy paste, the project uses code generation. And also my stack is connected using submodule.

`C` `Codegen` `Submodule «Stack»`

Language

Translating the code in my language into the assembly code that my *Processor* accepts. The program includes a parser (recursive descent), binary tree construction of operations, lexical analyzer, translation into assembler.

`C` `Graphviz` `Submodule «Processor»`

Differentiator

Calculating the derivative of an expression. The result of the program is a PDF that contains a step-by-step solution and an answer. The program includes building a binary expression tree, as well as simplifying the expression.

`C` `Graphviz` `LaTex`

MandelbrotSet

Visualization of the Mandelbrot set using CSFML (graphics library). The program includes optimizations: parallel execution and AVX instructions. The operating time of these solutions is analyzed.

`C` `CSFML` `AVX`

MyPrintf

Imitation of the original function printf (C). The project is written in assembler. The function supports a variable number of arguments, and jump table is implemented in the code. The result of the work is checked using the original function.

`Nasm x86-64`

Skills

Prog. languages	C, x86 Assembler, Shell
Other	Markdown, LaTex
Tools	Git, Make, CMake, Radare2
Libraries	Graphviz, CSFML, GTK
Languages	Russian (native), English (B1)
Soft skills	Concentration, teamwork, communication

Philosophy of life

A journey of a thousand miles begins with a single step.