Programming the c64 from scratch Part II

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About Part I

- Presentation september 2023
  - https://www.youtube.com/watch?v=SJzYAGcQusQ
  - https://github.com/eldendo/Programming-the-Commodore-64-from-scratch

- Building an environment on the c64 without existing tools
  - Back to 1983
  - Just BASIC, handwritten MC and tools made in them

About Part I

- First step: Building a PL/0 compiler
    - Based on the book Compiler Construction (Niklaus Wirth)

- The Future (then)
    - Cleaning up the code and write an educational text or course.
    - Extend PL/0 to write PL/0 in itself. (BASIC)
    - Write PL/0 in itself → bootstrapping
    - Make it faster
        - VM in MC
        - Or codegenerator to MC
        - Or (JIT ?) compiler from p-code to MC
    - Further extend PL/0 and write other tools

What did I do ?

- Extended the compiler (pl0/E)
  - Print text
  - Arrays
  - Demo

- Decided to translate the VM to MC
  - But… VM needs changes…
  - Hand translated MC is difficult to maintain…
  - So I wrote an Assembler in Basic.

PART II : An assembler in Basic

- Same Idea as PL/0:
  - No File IO
  - No Editor
    - Basic and assembly in one basic file
    - Fast tryout and debugging

The future

- Test and debug the assembler while making the virtual machine for the compiler.

WHY

- Because it is fun

- It is something I always wanted to do

- Combine hobby and my former job

- Learn and hopefully teach

- Intelligence is the faculty of making artificial objects, especially tools to make tools.

  - Henri Bergson

DEMO