

System programming Project

Architecture

main.py: Solve the argument input and output

This is the program entry point, it will be responsibility to solve argument input and output path and file. You also can use -h argument to show the help.

class-Assembler: Solve preprocessing data, split control section and IO control

A class in assembler.py, it will split the control section to Section class, and control all section processing such as assembler and write. Besides, it will processing the input file and make the text to Instruction class and push to section.

class-Section: Solve all instructions and change instructions to obj code

A class in assembler.py, it will process the instruction to object code, it will do following work flow.

- solve_literal
- sorting_block
- set_symbol
- set_location
- set_exdef_location
- sorting_index
- generate_object_code

The result object will be save at Instruction class.

class-Modification_record: Store modification record

class-Instruction: Store each instruction

Learned and Experienced

Great architecture can help you write great code. Remember to commit the code.

More than the Required

Basic requirement

Literals

Symbol-defining Statements

Program Blocks

Control Sections

Information

Lang: python

Version: 3.9.6

Testing Environment: macOS M1

Usage:

```
python3 main.py [-h] [-o O] inputfile
```

e.g. `python3 main.py input -o my_output` output: myoutput-1

positional arguments:

inputfile: input file path

options:

-h, --help show this help message and exit

-o O output file path

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