Encoding

The encoding simply opens a dictionary of instruction stored by name and an assembly file, loops through the assembly file, grabs the hex code and argument types of each instruction in the assembly file from the dictionary, then encodes each in binary.

Dictionary

The dictionary is stored in a pickle file instructionsByName.pkl, generated by the asmgenerator.py file.

ASM Generator

The assembly generator takes the data for each instruction as an Instruction object, stores them into two dictionaries, and then exits. It stores the name of an instruction, its hex code, its width in bytes, its argument types as a list, its function, and two variables for which flags it sets. Since each instruction only sets no flags, all flags but carry, and all flags including carry, the flags are split up into general flags and carry flag Booleans.

ASM Functions

Simply a large, mainly-redundant chunk of code to execute for each instruction. The majority of this file is taken up by arithmetic, but those are almost all the same in execution. This is necessary for creating an Instruction object for the ASM generator to make a dictionary, and for the encoder to use that dictionary, and it will also be useful for the simulator once finished.