T34 Emulator

October 15, 2021

1 Functions

1. chunks

   Used by displayMemRange to split a list into sublists of a certain size.

2. displayMem

   Takes in an address and prints out the corresponding memory value at that location.

   Ex: 200

3. displayMemRange

   Takes in a beginning and ending address and displays them with at most 8 memory locations per row.

   Ex: 200.20F

4. editMem

   Takes in a starting memory location and new memory values starting at that location.

   Ex: 300: A9 04 85 07 A0 00 84 06 A9 A0 91 06 C8 D0 FB E6 07

5. runProg

   Takes in an address for where to start running the program. Fetches the opcode from that address, and executes it. Keeps interpreting instructions at the program counter until the break/interrupt flag is set.

   Ex: 200R

6. set_bit

   Takes in an integer and a bit location. Returns the integer with the bit at that location set to a 1.

7. clear_bit

   Takes in an integer and a bit location. Returns the integer with the bit at that location set to a 0.

8. check_bit

   Takes in an integer and a bit location. Returns true if that bit is a 1, false if it is a 0.

9. interpret

   Interprets instruction starting at the current program counter. Prints out operand, instruction name, addressing mode, operands, x and y register, accumulator, stack pointer, and status register after completing each instruction.

10. file_input

    Handles input from object file if supplied. Validates file integrity using checksum involving address, byte count, and record type. Only accepts records of type 00 and 01.

11. main

    Calls file_input, then handles input from the monitor. Calls appropriate function based on command input from the monitor.

2 Running Program

Program is run from command line using python3.
Ex: python3 ./t34.py code2_2.obj
Ex: python3 ./t34.py test1.obj
Ex: python3 ./t34.py