Facade for entire program

Computer

- instructions: MapOf<Int, InstructionTemplate>
- rom: ROM
- ram: RAM
- cpu: CPU

a bunch of methods!

Calls back to the facade for completing instructions

While T register is not at 0, the CPU decrements the value by 1 every 16 ms

CPU

- r0: UByte
- r1: UByte
- r3: UByte
- r4: UByte
- r5: UByte
- r6: UByte
- r7: UByte
- r8: UByte
- p: Short
- t: UByte
- a: Short
- m: Boolean

Executes instructions at 500 times per second

Screen

8x8 ASCII display
64 bytes of internal RAM that serves as the frame buffer for the ASCII character to display at each position

- Position in RAM? : Int

RAM

+ memory: List<Byte>

+ read(location: Int): List<Byte>
+ write(info: List<Byte>, location: Int): Boolean

Reads 2 bytes from ROM every cycle at P and P + 1

Input File

Loads instructions into

ROM

all rom chips are 4kb in size?
same implementation as RAM, except cannot write into after file input.

<<Abstract>> InstructionTemplate

+ executeInstruction()
# performOperation()
# incrementCounter()

NOTE: The template automatically adds 2 to the program counter. If an instruction does not want to do this, it overrides the method and doesn't do anything.

Store

Add

Sub

Read

Write

Jump

ReadKeyboard

SwitchMemory

SkipEqual

SkipNotEqual

SetA

SetT

ReadT

ConvertToBase10

ConvertByteToAscii

Draw