The VC5000 Computer

The VC5000 is a decimal computer with 1,000,000 words of memory. Each word consists of 9 decimal digits. There is an additional 10 words of memory called registers. These are on chip memory. The machine language instructions for the VC5000 is of the following form:

2 digits	1 digit	6 digits
operation code	register number	address portion

A machine language program is a sequence of machine language instructions stored in memory. The computer runs a machine language program by executing machine instructions stored in successive words of memory. The first instruction of a VC5000 machine language program is assumed to be at location 100. The following are the machine language instructions for the VC5000.

NAME	OP. CODE	MEANING
ADD	01	Reg <-- c(Reg) + c(ADDR) (The contents of the register specified in the instruction and of the memory location specified by the address portion of the instruction are added together. The result is placed in the register.):
SUBTRACT	02	Reg <-- c(Reg) - c(ADDR)
MULTIPLY	03	Reg <-- c(Reg) * c(ADDR)
DIVIDE	04	Reg <-- c(Reg) / c(ADDR)
LOAD	05	Reg <-- c(ADDR)
STORE	06	ADDR <-- c(Reg)
READ	07	A line is read in and the number found there is recorded in the specified memory address. The register value is ignored.
WRITE	08	c(ADDR) is displayed The register value is ignored.
BRANCH	09	go to ADDR for next instruction. The register value is ignored.
BRANCH MINUS	10	go to ADDR if c(Reg) < 0
BRANCH ZERO	11	go to ADDR if c(Reg) = 0
BRANCH POSITIVE	12	go to ADDR if c(Reg) > 0
HALT	13	terminate execution. The register value and address are ignored.