Factor program for CPUville original processor

Code in ROM

Label	Location (hex)	Machine Code (hex)	Mnemonic	Operand	Comment
Start	0 00	9 C 00	LDM	Port_0	Get number to factor from input port
	0 01	A 8 00	STM	Original_number	Store number to factor in memory
	0 02	A 8 01	STM	Factor	Starting factor = original number
Loop_1	0 03	9 8 01	LDM	Factor	Factor loop
	0 04	2 0 0F	SUB	One	New factor = old factor - 1
	0 05	D 0 0C	JPZ	Quit	If factor = 0, better quit (mistake)
	0 06	A 8 01	STM	Factor	Store new factor
	0 07	9 8 00	LDM	Original_number	Test factor by
Loop_2	0 08	2 8 01	SUB	Factor	subtracting repeatedly from original number
	0 09	D 0 0C	JPZ	Quit	Factor found-quit
	0 0A	E 0 03	JPM	Loop_1	Went past zero, not a factor
	0 0B	B 0 08	JMP	Loop_2	Still testing
Quit	0 0C	9 8 01	LDM	Factor	Get the proven factor and
	0 0D	A C 00	STM	Port_0	Display on the output
	0 0E	B 0 00	JMP	Start	Start over
One	0 0F	0 0 01	(constant)		

Variables in RAM

Label	Location (hex)
Original_number	8 00
Factor	8 01