FAST FORWARD

By Jim

Most of the programs I've written are programs to aid in programming. This is no exception. It's one of my first programs of any complexity.

It is written for the MON-1 series of MONitors and as a result will not run with JMON or the MON-2 series.

FAST FORWARD is a program designed to automatically step through the memory and display the address and data on the TEC LED display.

The purpose of this is to allow you to write down your program without having to hit the increment key all the time.

FAST FORWARD can step through the memory both forwards and backwards at slow speed and also at high speed. It does not, however, have a manual step feature. (strangely, I did not think it necessary at the time).

Each time FAST FORWARD changes to a new address, a beep is sounded to let you know. This way you can keep in time with the changes.

The following keys are used:

A is the fast forward key
B is the fast reverse key
C is the stop key
D is the slow reverse key
ANY other key for slow forward

Two MONitor routines are called by fast forward. These are the LED scan routine at 0140 and the beep routine at 018E.

FAST FORWARD has its own binary-to-display code conversion as I must not of known where this routine was located in the MON-1 ROM at the time.

The conversion routine for FAST FOR-WARD is at 0A00.

FAST FORWARD also has its own display code table located at 0B00.

The speed of the stepping is controlled by the values loaded into the BC register pair at addresses 0906, 0950 and 095A. Depending on your oscillator, you may need to alter this values.

The purpose of presenting FAST FOR-WARD is to allow you to play around with the program for whatever purposes you like.

As an interesting challenge, see if you can add a manual step function, it shouldn't be too hard.

FAST FORWARD is hardly a example of good programming, but it does produce the results!

0000	21	ΛΛ	ΔΔ		T IN THE ORDER
0900	21	w	w		LD HL,0000
0900 0903	01	0F	04		LD BC,040F
0703	••	~~	25		
0906	11	w	0B		LD DE,0B00
0909	DD	21	Ω	α	LD IX,0C00
		41	w	w	
090D	7E				LD A,(HL)
0000		ΔΔ	ο.		
090E	CD	w	UΑ		CALL 0A00
090E 0911	7D				LD A,L
0711	10				
0912	CD	00	0A		CALL 0A00
0915					LD A,H
	10				
0916	CD	00	0A		CALL 0A00
	C5	• •			PUSH BC
091A	E5				PUSH HL
		~			
091B	CD	δE	O1		CALL 018E
091E	FI				POP HL
0712					
091F	23				INC HL
0920	DD	21	Ω	α	LD IX,0C00
		21	w	vC	
0924	DI				POP DE
		40	•		
0925	CD	40	UΙ		CALL 0140
0028	ED	57			LD A,I
0928 092A		21			
092A	FE	0A			CP 0A
092C	CA	EΛ	ΩΩ		
					JP Z 0950
092F	FE	0R			CP 0B
0931 0934	CA	٦A	.09		JP Z 095A
0034	EE	α			CP OC
0934	LE	w	_		
0936	CA	65	09		JP Z 0965
0939	CC	ΛD			CP OD
093B	CA	64	00		JP Z 096A
0930		UL	U		
093E 093F	IR				DEC DE
003E	7R				LD A,E
0940	7.0				
$\alpha \alpha A \alpha$	רם				
U74U	DZ				OK D
		Ea			OR D
0941	20				JR NZ 0925
0941	20		09		JR NZ 0925
	20		09		
0941	20		09		JR NZ 0925
0941 0943	20 C3	03			JR NZ 0925 JP 0903
0941 0943	20 C3	03			JR NZ 0925 JP 0903
0941 0943 0950	20 C3 01	03	01		JR NZ 0925 JP 0903 LD BC,0100
0941 0943	20 C3 01	03			JR NZ 0925 JP 0903
0941 0943 0950	20 C3 01	03	01		JR NZ 0925 JP 0903 LD BC,0100
0941 0943 0950 0953	20 C3 01 C3	03 00 6F	01 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F
0941 0943 0950 0953 095A	20 C3 01 C3	03 00 6F	01 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100
0941 0943 0950 0953 095A	20 C3 01 C3	03 00 6F	01 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100
0941 0943 0950 0953 095A 095D	20 C3 01 C3 01 2B	03 00 6F	01 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL
0941 0943 0950 0953 095A 095D	20 C3 01 C3 01 2B	03 00 6F	01 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL
0941 0943 0950 0953 095A 095D 095E	20 C3 01 C3 01 2B 2B	03 00 6F 00	01 09 01		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL
0941 0943 0950 0953 095A 095D	20 C3 01 C3 01 2B 2B	03 00 6F 00	01 09 01		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL
0941 0943 0950 0953 095A 095D 095E	20 C3 01 C3 01 2B 2B	03 00 6F 00	01 09 01		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL
0941 0943 0950 0953 095A 095D 095E 095F	20 C3 01 C3 01 2B 2B C3	03 00 6F 00	01 09 01 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F
0941 0943 0950 0953 095A 095D 095E 095F	20 C3 01 C3 01 2B C3 C3	03 00 6F 00	01 09 01 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925
0941 0943 0950 0953 095A 095D 095E 095F	20 C3 01 C3 01 2B C3 C3	03 00 6F 00	01 09 01 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925
0941 0943 0950 0953 095A 095D 095E 095F	20 C3 01 C3 01 2B 2B C3 FF	03 00 6F 00	01 09 01 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925
0941 0943 0950 0953 095A 095D 095E 095F	20 C3 01 C3 01 2B C3 FF FF	03 00 6F 00 6F 25	01 09 01 09 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969	20 C3 01 C3 01 2B C3 FF FF	03 00 6F 00 6F 25	01 09 01 09 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A	20 C3 01 C3 01 2B C3 FF FF 01	03 00 6F 00 6F 25	01 09 01 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969	20 C3 01 C3 01 2B C3 FF FF 01	03 00 6F 00 6F 25	01 09 01 09 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A 096D	20 C3 01 C3 01 2B C3 FF FF 01 2B	03 00 6F 00 6F 25	01 09 01 09 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A 096D 096E	20 C3 01 C3 01 2B C3 FF FF 01 2B 2B	03 00 6F 00 6F 25	01 09 01 09 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A 096D	20 C3 01 C3 01 2B C3 FF FF 01 2B 2B	03 00 6F 00 6F 25	01 09 01 09 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A 096D 096E 096F	20 C3 01 C3 01 2B 2B C3 C3 FF FF 01 2B 2B C5	03 00 6F 00 6F 25	01 09 01 09 09		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC
0941 0943 0950 0953 095A 095D 095E 095F 096S 0968 0969 096A 096D 096E 096F 0970	20 C3 01 C3 01 2B 2B C3 FF FF 01 2B 2B C5 D1	03 00 6F 00 6F 25	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE
0941 0943 0950 0953 095A 095D 095E 095F 096S 0968 0969 096A 096D 096E 096F 0970	20 C3 01 C3 01 2B 2B C3 FF FF 01 2B 2B C5 D1	03 00 6F 00 6F 25	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC
0941 0943 0950 0953 095A 095D 095E 095F 096S 0968 096A 096D 096E 096F 0970 0971	20 C3 01 2B 2B C3 FF FF 01 2B 2B C5 D1 CD	03 00 6F 00 6F 25	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140
0941 0943 0950 0953 095A 095D 095E 095F 096S 0968 096B 096B 096B 096F 0970 0971 0974	20 C3 01 2B 2B C3 FFF 01 2B 2B C5 D1 CD 1B	03 00 6F 00 6F 25	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140 DEC DE
0941 0943 0950 0953 095A 095D 095E 095F 096S 0968 096B 096B 096B 096F 0970 0971 0974	20 C3 01 2B 2B C3 FFF 01 2B 2B C5 D1 CD 1B	03 00 6F 00 6F 25	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140 DEC DE
0941 0943 0950 0953 095A 095D 095E 095F 0968 0969 096A 096D 096E 0970 0971 0974 0975	20 C3 01 2B 2B C3 FF FF 01 2B C5 D1 CD 1B 7A	03 00 6F 00 6F 25	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140 DEC DE LD A,D
0941 0943 0950 0953 095A 095D 095E 095F 096S 0968 096B 096B 096B 096F 0970 0971 0974	20 C3 01 2B 2B C3 FFF 01 2B 2B C5 D1 CD 1B	03 00 6F 00 6F 25	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140 DEC DE LD A,D OR E
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A 096D 0971 0974 0975 0976	20 C3 01 2B 2B C3 FFF 01 2B C5 D1 CD 1B 7A B3	03 00 6F 00 6F 25 00	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140 DEC DE LD A,D OR E
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A 096D 0971 0974 0975 0976 0977	20 C3 01 2B 2B C3 FFF 01 2B 2B C5 D1 CD 1B 7A B3 20	03 00 6F 00 6F 25 00	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140 DEC DE LD A,D OR E JR NZ 0971
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0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A 096D 0971 0974 0975 0976 0977	20 C3 01 2B 2B C3 FFF 01 2B 2B C5 D1 CD 1B 7A B3 20	03 00 6F 00 6F 25 00	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140 DEC DE LD A,D OR E JR NZ 0971
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A 096D 0971 0974 0975 0976 0977	20 C3 01 2B 2B C3 C3 FFF FF 01 2B 2B C5 D1 CD 1B 7A B3 20 C3	03 00 6F 00 6F 25 00	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140 DEC DE LD A,D OR E JR NZ 0971 JP 0906
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A 096D 0971 0974 0975 0976 0977	20 C3 01 2B 2B C3 FFF 01 2B 2B C5 D1 CD 1B 7A B3 20 C3 E5	03 00 6F 00 6F 25 00	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140 DEC DE LD A,D OR E JR NZ 0971 JP 0906 PUSH HL
0941 0943 0950 0953 095A 095D 095E 095F 0965 0968 0969 096A 096D 0971 0974 0975 0976 0977	20 C3 01 2B 2B C3 FFF FF 01 2B 2B C5 D1 CD 1B 7A B3 20 C3 E5	03 00 6F 00 6F 25 00	01 09 01 09 09 04		JR NZ 0925 JP 0903 LD BC,0100 JP 096F LD BC,0100 DEC HL DEC HL JP 096F JP 0925 RST 38 RST 38 LD BC,0400 DEC HL DEC HL PUSH BC POP DE CALL 0140 DEC DE LD A,D OR E JR NZ 0971 JP 0906

0A02 E6 0F	AND OF
0A04 26 00	LD H,00
0A06 6F	LD L.A
0A07 19	ADD HL.DE
0A08 7E	LD A,(HL)
0A09 DD 77 00	LD (IX+00),A
0A0C DD 23	INC IX
0 A0E F1	POP AF
0A0F E6 F0	AND F0
0A11 1F	RRA
0A12 1F	RRA
0A13 1F	RRA
0A14 1F	RRA
0A15 26 00	LD H,00
0A17 6F	LD L.A
0A18 19	ADD HL.DE
0A19 7E	LD A,(HL)
0A1A DD 77 00	LD (IX+00).A
0A1D DD 23	INC IX
OAIF EI	POP HL
0A20 C9	RET

DISPLAY TABLE

0B00: EB 28 CD AD 2E A7 E7 29 0B08: EF 2F 6F E6 C3 EC C7 47

MON-1 SCAN ROUTINE

0140	DD E5	PUSH IX
0142	01 01 06	LD BC,0601
0145	DD 7E 00	LD A,(IX+00)
0148	D3 02	OUT 02,A
014A	DD 23	INC IX
014C	79	LD A,C
014D	D3 01	OUT 01,A
014F	CB 27	SLA A
0151	4F	LD C,A
0152	3E 0A	LD A,0A
0154	3D	DEC A
0155	C2 54 01	JP NZ 0154
0158	D3 01	OUT 01,A
015A	10 E9	DJNZ 0145
015C	DD EI	POP IX
015E	C9	RET

MON-1 BEEP ROUTINE

018E (DE OA	LD C,0A
0190 2	21 50 00	LD HL,0050
0193 2	29	ADD HL,HL
0194 (01 00	LD DE,0001
0197	AF	XOR A
0198 I	D3 02	OUT 02,A
019A 3	3D	DEC A
019B I	D3 01	OUT 01,A
019D 4	41	LD B,C
019E 1	IO FE	DJNZ 019E
01A0 I	EE 80	XOR 80
01A2 I	ED 52	SBC HL,DE
01A4 2	20 F5	JR NZ 019B
01A6 (29	RET