

2708
2709
2710 39520 PAGE

```

2711 39540 SUBTTL "FOR" STATEMENT
2712 39560 ;
2713 39580 ; NOTE:
2714 39600 ;
2715 39620 ; A FOR ENTRY ON THE STACK HAS THE FOLLOWING FORMAT:
2716 39640 ;
2717 39660 ;
2718 39700 ; LOW ADDRESS
2719 39720 ; TOKEN (FORWK IN HIGH BYTE) 1 BYTE
2720 39740 ; A POINTER TO THE LOOP VARIABLE 2 BYTES
2721 39760 ; A BYTE REFLECTING THE SIGN OF THE INCREMENT 1 BYTE
2722 39780 ; THE STEP 4 BYTES
2723 39800 ; THE UPPER VALUE 4 BYTES
2724 39820 ; THE LINE # OF THE "FOR" STATEMENT 2 BYTES
2725 39840 ; A TEXT POINTER INTO THE "FOR" STATEMENT 2 BYTES
2726 39860 ; HIGH ADDRESS
2727 39880 ;
2728 39900 ; TOTAL 16 BYTES
2729 39920 ;
2730
2731 003154' 001000 000076 39960 FOR: IFN LENGTH,<
2732 003155' 000000 000144 39980 MV1 A,100
2733 003156' 001000 000062 40000 STA SUBFLG> ;DO NOT RECOGNIZE SUBSCRIPTED VARIABLES
2734 003157' 000000 001001'
2735 003160' 000000 003151'
2736 003161' 001000 000315 40020 CALL LET ;READ THE VARIABLE AND ASSIGN IT
2737 003162' 000000 004131'
2738 003163' 000000 003157'
2739
2740 40040 ;THE CORRECT INITIAL VALUE
2741 40060 ;AND STORE A POINTER
2742 40080 ;TO THE VARIABLE IN [TEMP]
2743 003164' 001000 000343 40100 XTHL ;SAVE TEXT PTR ON THE STACK
2744 003165' 001000 000315 40120 CALL FNFOR ;MUST HAVE VARIABLE POINTER IN [D,E]
2745 003166' 000000 001744'
2746 003167' 000000 003162'
2747 003170' 001000 000321 40140 POP D ;[D,E]=TEXT POINTER
2748 003171' 001000 000302 40160 JNZ NOTOL ;IF NO MATCHING ENTRY, DON'T
2749 003172' 000000 003176'
2750 003173' 000000 003166'
2751
2752 003174' 001000 000011 40180 ;ELIMINATE ANYTHING
2753 40200 DAD B ;IN THE CASE OF "FOR"
2754 40220 ;WE ELIMINATE THE MATCHING ENTRY
2755 003175' 001000 000371 40240 SPHL ;AS WELL AS EVERYTHING AFTER IT
2756 40260 ;DO THE ELIMINATION
2757 003176' 001000 000353 40280 NOTOL: XCHG ;SINCE A MATCHING ENTRY WAS FOUND
2758 003177' 001000 000315 40300 CALL GETSTK ;[H,L]=TEXT POINTER
2759 003200' 000000 002624'
2760 003201' 000000 003172'
2761 003202' 000000 000010 40340 B ;MAKE SURE 16 BYTES ARE AVAILABLE
2762 40360 ;OFF OF THE STACK
2763 003203' 001000 000345 40380 PUSH H ;REALLY SAVE THE TEXT POINTER

```

2764	003204	001000	000315	40400	CALL	DATA	10GET AN (H,L) THAT POINTS
2765	003205	000000	004072				
2766	003206	000000	003200	40420			11JUST BEYOND THE TERMINATOR
2767				40440			12PUT (H,L) POINTER TO TERMINATOR ON THE STACK
2768	003207	001000	000343	40460			13AND RESTORE (H,L) AS TEXT POINTER AT
2769				40480			14VARIABLE NAME
2770				40500	PUSH	H	15PUSH THE TEXT POINTER ONTO THE STACK
2771	003210	001000	000345	40520	LHLD	CURLIN	16(H,L) GET THE CURRENT LINE #
2772	003211	001000	000052				
2773	003212	000000	001607				
2774	003213	000000	003205				
2775	003214	001000	000343	40540			17HOW THE CURRENT LINE # IS ON THE STACK AND
2776				40560			18(H,L) IS THE TEXT POINTER
2777				40580	IFN	LENGTH=2,<	
2778				40600	IFN	STRING,<CALL	CHKNUM>>
2779	003215	001000	000317	40620			19"TO" IS NECESSARY
2780	003216	000000	000241				
2781				40640	IFN	LENGTH=2,<	
2782				40660	CALL	FRMNUM	20READ FINAL VALUE
2783				40680	IFE	LENGTH=2,<	
2784	003217	001000	000315	40700	CALL	FRMEVL	
2785	003220	000000	005330				
2786	003221	000000	003212				
2787	003222	001000	000345	40720	PUSH	H	21SAVE THE TEXT POINTER
2788				40740	IFE	LENGTH=2,<	
2789	003223	001000	000315	40760	CALL	FRCSNG	
2790	003224	000000	000070				
2791	003225	000000	003220				
2792	003226	001000	000315	40780	CALL	MOVRF	22GET THE STUFF
2793	003227	000000	000000				
2794	003230	000000	003224				
2795	003231	001000	000341	40800	POP	H	23REMAIN TEXT POINTER
2796	003232	001000	000305	40820	PUSH	B	24OPPOSITE OF PUSH
2797	003233	001000	000325	40840	PUSH	D	25SAVE THE SIGN OF THE INCREMENT
2798	003234	001000	000001	40860	LXI	B,3CODE+0201*256	
2799	003235	000000	100406				
2800	003236	000000	003227				
2801	003237	001000	000121	40880	MOV	D,C	
2802	003240	001000	000132	40900	MOV	E,D	26GET 1,0 IN THE REGISTERS
2803	003241	001000	000176	40920	MOV	A,H	27GET TERMINATING CHARACTER
2804	003242	001000	000376	40940	CPI	STEPTK	28DO WE HAVE "STEP" ?
2805	003243	000000	000247				
2806	003244	001000	000076	40960	MVI	A,1	29SETUP DEFAULT SIGN
2807	003245	000000	000001				
2808	003246	001000	000302	40980	JNZ	ONEON	30PUSH SOME CONSTANTS ON IF NOT
2809	003247	000000	003265				
2810	003250	000000	003235				
2811				41000	IFN	LENGTH=2,<	
2812				41020	IFN	STRING,<	
2813				41040			
2814				41060	CALL	FRMNUM	31READ THE STEP
2815				41080	IFE	<LENGTH=2>&STRING,<	
2816	003251	001000	000315	41100	CALL	FRMCHK	32DON'T NEED TO CHECK THE TYPE

2817	003252	000000	005337				
2818	003253	000000	003247				
2819	003254	001000	000345	41120	PUSH	H	
2820				41140	IFE	LENGTH=2,<	
2821	003255	001000	000315	41160	CALL	FRCSNG	
2822	003256	000000	003224				
2823	003257	000000	003252				
2824	003260	001000	000315	41180	CALL	MOVRF	33SET UP THE REGISTERS
2825	003261	000000	003227				
2826	003262	000000	003250				
2827	003263	001000	000341	41200	POP	H	
2828	003264	001000	000357	41220	FSIGN		34GET THE SIGN OF THE INCREMENT
2829	003265	001000	000305	41240	ONEON: PUSH	B	35PUT VALUE ON BACKWARDS
2830	003266	001000	000325	41260	PUSH	D	36OPPOSITE OF PUSH
2831	003267	001000	000365	41280	IFORDN: PUSH	PSW	37SAVE THE SIGN OF THE INCREMENT
2832	003270	001000	000063	41300	INX	SP	38A ONE BYTE ENTRY ONLY
2833	003271	001000	000345	41320	PUSH	H	
2834	003272	001000	000052	41340	LHLD	TEMP	39GET THE POINTER TO THE VARIABLE BACK
2835	003273	000000	001605				
2836	003274	000000	003261				
2837	003275	001000	000343	41360			
2838				41380			
2839	003276	001000	000006	41400	NXTCON: MVI	B,FORTK	40PUT THE POINTER TO THE VARIABLE
2840	003277	000000	000201				41ONTO THE STACK AND RESTORE THE TEXT POINTER
2841	003300	001000	000305	41420	PUSH	B	42PUT A "FOR" TOKEN ONTO THE STACK
2842	003301	001000	000063	41440	INX	SP	
2843				41460			43THE "TOKEN" ONLY TAKES ONE BYTE OF
2844				41480			44STACK SPACE
2845				41500	JMP	NEWSTT	45FALL DONE

```

2046          41520 SUBTTL NEW STATEMENT FETCHER
2047          41540 ;
2048          41560 ; BACK HERE FOR NEW STATEMENT, CHARACTER POINTED TO BY (H,L)
2049          41580 ; "I" OR END-OF-LINE, THE ADDRESS OF THIS LOCATION IS
2050          41600 ; LEFT ON THE STACK WHEN A STATEMENT IS EXECUTED SO
2051          41620 ; IT CAN MERELY DO A RETURN WHEN IT IS DONE.
2052          41640 ;
2053          003302' 41660 NEWSTT:
2054          2054          41680 IFN LISTEN,<
2055          2055          41700 IFN LENGTH,<
2056          003302' 001000 000333 41720          IN      0          ;CHECK FOR A CHARACTER WITHOUT
2057          003303' 000000 000000          ;
2058          2058          41740          ;
2059          003303' 41760 CNLCA==1,1          ;JODING A "CALL" FOR SPEED
2060          003304' 001000 000340 41780          ANI      IDONE          ;CHARACTER THERE?
2061          003305' 000000 000001          ;
2062          003306' 001000 000314 41800          CZ      CNTCCN>          ;SEE IF IT'S CONTROL=C
2063          003307' 000000 003465'          ;
2064          003310' 000000 003273'          ;
2065          2065          41820 IFE      LENGTH,<
2066          2066          41840 CALL      ISCONT>
2067          2067          41860 IFN      LENGTH,<
2068          003311' 001000 000042 41880          SHLD     TEMP>          ;USED BY CONTINUE AND INPUT AND CLEAR
2069          003312' 000000 001003'          ;
2070          003313' 000000 003307'          ;
2071          2071          41900          ;
2072          2072          41920          ;
2073          2073          41940 IFN      LPTSW,<XRA      A          ;TO REMEMBER HOW TO RESTART THIS
2074          003314' 001000 000176 41960          STA      STA PTFLG>          ;STATEMENT
2075          2075          41980          MOV      A,M          ;FORCE PRINT TO GO TO TTY AFTER LPRINT
2076          2076          42000          CPI      "I"          ;GET CURRENT CHARACTER
2077          003315' 001000 000376 42020          ;WHICH TERMINATED THE LAST STATEMENT
2078          003316' 000000 000072          ;IS IT A COLON?
2079          003317' 001000 000312 42040          JZ      GONE          ;
2080          003320' 000000 003376'          ;
2081          003321' 000000 003312'          ;
2082          003322' 001000 000267 42060          ORA      A          ;MUST BE A ZERO
2083          003323' 001000 000302 42080          JNZ      SNERR          ;
2084          003324' 000000 000272'          ;
2085          003325' 000000 003326'          ;
2086          003326' 001000 000043 42100          INX      M          ;CHECK POINTER TO SEE IF
2087          003327' 001000 000176 42120          MOV      A,M          ;IT IS ZERO, IF SO WE ARE AT THE
2088          2088          42140          ;END OF THE PROGRAM
2089          2089          42160          ;
2090          003330' 001000 000043 42180          INX      M          ;FOR IN HIGH PART
2091          003331' 001000 000266 42200          ORA      M          ;
2092          003332' 001000 000043 42220          INX      M          ;
2093          003333' 001000 000312 42240          JZ      ENDCON          ;RAN OFF THE END == OK
2094          003334' 000000 003301'          ;
2095          003335' 000000 003324'          ;
2096          003336' 001000 000136 42260          MOV      E,M          ;
2097          003337' 001000 000043 42280          INX      M          ;
2098          003340' 001000 000126 42300          MOV      D,M          ;GET LINE # IN (D,E)

```

```

2099          003341' 001000 000353 42320          XCHG      CURLIN          ;(H,L)=LINE #
2100          003342' 001000 000042 42340          SHLD     CURLIN          ;SETUP CURLIN WITH THE CURRENT LINE #
2101          003343' 000000 001007'          ;
2102          003344' 000000 003334'          ;
2103          2103          42360 IFE      LENGTH=2,<
2104          003345' 001000 000072 42380          LDA      TRCFLG          ;TRACE FEATURE
2105          003346' 000000 001031'          ;SEE IF TRACE IS ON
2106          003347' 000000 003343'          ;
2107          003350' 001000 000061 42400          ORA      A          ;NON-ZERO MEANS YES
2108          003351' 001000 000312 42420          JZ      NOTTRC          ;SKIP THIS PRINTING
2109          003352' 000000 003367'          ;
2110          003353' 000000 003346'          ;
2111          003354' 001000 000325 42440          PUSH     D          ;SAVE THE TEXT POINTER
2112          003355' 001000 000076 42460          MVI      A,"["          ;FORMAT THE LINE NUMBER
2113          003356' 000000 000133          ;
2114          003357' 001000 000037 42480          OUTCHR   L          ;OUTPUT IT
2115          003360' 001000 000315 42500          CALL     LIMPRT          ;PRINT THE LINE # IN (H,L)
2116          003361' 000000 000000          ;
2117          003362' 000000 003352'          ;
2118          003363' 001000 000076 42520          MVI      A,"J"          ;SOME MORE FORMATING
2119          003364' 000000 000135          ;
2120          003365' 001000 000037 42540          OUTCHR   D          ;(D,E)=TEXT POINTER
2121          003366' 001000 000321 42560          POP      D          ;
2122          003367' 000000 000000          ;
2123          003367' 001000 000353 42580          NOTTRC:>          ;
2124          003370' 001000 000327 42600          XCHG      CHRG1          ;RESTORE THE TEXT POINTER
2125          003371' 001000 000021 42620          GONE1   CHRG1          ;GET THE STATEMENT TYPE
2126          003372' 000000 003302' 42640          LXI      D,NEWSTT          ;PUSH ON A RETURN ADDRESS OF NEWSTT
2127          003373' 000000 003361'          ;
2128          003374' 001000 000325 42660          PUSH     D          ;STATEMENT
2129          003375' 001000 000310 42680          GONE2:  RZ          ;IF A TERMINATOR TRY AGAIN
2130          2130          42700          ;
2131          003376' 001000 000326 42720          GONE2:  SUI      ENDTK          ;"IF" COMES HERE
2132          003377' 000000 000000          ;
2133          003400' 001000 000332 42740          JC      LET          ;MUST BE A LET
2134          003401' 000000 000131'          ;
2135          003402' 000000 003372'          ;
2136          2136          42760          NUMCMD=>SCHATK=ENDTK+1
2137          003403' 001000 000376 42780          CPI      NUMCMD          ;
2138          003404' 000000 000040          ;
2139          003405' 001000 000322 42800          JNC      SNERR          ;SOME RESERVED WORD,BUT NOT
2140          003406' 000000 000072'          ;
2141          003407' 000000 003401'          ;
2142          2142          42820          ;
2143          003410' 001000 000007 42840          RLC          ;A STATEMENT RESERVED WORD
2144          003411' 001000 000017 42860          MOV      C,A          ;MULTIPLY BY 2
2145          003412' 001000 000006 42880          MVI      B,0          ;
2146          003413' 000000 000000          ;
2147          003414' 001000 000353 42900          XCHG      ;
2148          003415' 001000 000041 42920          LXI      M,STNDSP          ;STATEMENT DISPATCH TABLE
2149          003416' 000000 000564'          ;
2150          003417' 000000 003406'          ;
2151          003420' 001000 000011 42940          DAD      B          ;ADD ON OFFSET

```

2952	003421	001000	000116	42960	MOV	C,M		1PUSH THE ADDRESS TO GO TO ONTO
2953	003422	001000	000043	42980	INX	H		1THE STACK
2954	003423	001000	000106	43000	MOV	B,M		1PUSHM SAVES BYTES BUT NOT SPEED
2955	003424	001000	000305	43020	PUSH	B		
2956	003425	001000	000353	43040	XCHG			1RESTORE THE TEXT POINTER
2957				43060	IFE	LENGTH,<		
2958				43080	CHRGRT			1EAT THE FIRST CHARACTER
2959				43100	RET>			1GO ON THE STATEMENT
2960				43120	IFN	LENGTH,<		
2961	003426	001000	000043	43140	CHRGTR:	INX	H	1DUPLICATION OF CHRGRT RST FOR SPEED
2962	003427	001000	000176	43160	MOV	A,M		1SEE CHRGRT RST FOR EXPLANATION
2963	003430	001000	000376	43180	CPI	"I"		
2964	003431	000000	000072					
2965	003432	001000	000320	43200	RNC>			
2966				43220				
2967				43240				
2968				43260				
2969	003433	001000	000376	43280	CHRCN:	CPI	" "	1MUST SKIP SPACES
2970	003434	000000	000040					
2971	003435	001000	000312	43300	JZ	CHRGTR		1GET ANOTHER CHARACTER
2972	003436	000000	000426					
2973	003437	000000	000410					
2974	003440	001000	000376	43320	CPI	"0"		1ALL CHARACTERS GREATER THAN
2975	003441	000000	000060					
2976				43340				
2977	003442	001000	000077	43360	CMC			1"9" HAVE RETURNED, SO SEE IF NUMERIC
2978	003443	001000	000074	43380	INR	A		1MAKE NUMERIC HAVE CARRY ON
2979	003444	001000	000075	43400	DCR	A		1SET ZERO IF (A)=0
2980	003445	001000	000311	43420	RET			
2981				43440	PAGE			

2982				43460	SUBTTL	RESTORE,STOP,END,LINGET,CHRCN		
2983								
2984	003446	001000	000353	43500	RESTOR:	XCHG		1SAVE [H,L] IN [D,E]
2985	003447	001000	000052	43520	LHLD		TXTTAB	
2986	003450	000000	001617					
2987	003451	000000	000436					
2988	003452	001000	000053	43540	DCX	H	DATPTR	1INITIALIZE DATPTR TO (TXTTAB)+1
2989	003453	001000	000042	43560	RESFIN:	SHLO		1READ FINISHES COME TO RESFIN
2990	003454	000000	001627					
2991	003455	000000	000450					
2992	003456	001000	000353	43580	XCHG			1GET THE TEXT POINTER BACK
2993	003457	001000	000311	43600	RET			
2994								
2995				43640	IFN	LISTEN,<		
2996	003460	001000	000333	43660	ISNCT:	IN	B	
2997	003461	000000	000000					
2998				43680	CNLCAS=	1		1CONSOLE COMMAND CHANGE LOC
2999	003462	001000	000346	43700	ANI		IDONE	
3000	003463	000000	000001					
3001	003464	001000	000300	43720	RNZ			1IF NO CHARACTERS THEN NO "C
3002	003465	001000	000315	43740	CNCTCN:	CALL	INCHR	
3003	003466	000000	000120					
3004	003467	000000	000454					
3005	003470	001000	000376	43760	CPI	3		1STOP CHARACTER IS "C
3006	003471	000000	000003					
3007				43780	IFE	LENGTH,<		
3008				43800	JMP		STOP>>	
3009				43820	IFN	LENGTH,<		
3010	003472	001000	000300	43840	STOP:	RNZ		1RETURN IF NOT CONTROL-C AND MAKE
3011				43860				1SURE "STOP" STATEMENTS HAVE A TERMINATOR
3012	003473	001000	000366	43880	XWD		"01000,0366	1SETUP (A) AS A FLAG WHETHER
3013				43900				1TO TYPE THE BREAK MESSAGE
3014	003474	001000	000300	43920	END:	RNZ		1MAKE SURE "END" STATEMENTS HAVE A TERMINATOR
3015	003475	001000	000042	43940		RNZ	TEMP	1SAVE FOR "CONTINUE"
3016	003476	000000	001603					
3017	003477	000000	000460					
3018	003500	001000	000301	43960	STPEND:	PUP	B	1POP OFF NEWSTT ADDRESS
3019	003501	001000	000365	43980	ENDCON:	PUSH	PSW	1SAVE THE MESSAGE FLAG
3020				44000				1ZERO MEANS DON'T PRINT "BREAK"
3021	003502	001000	000052	44020	LHLD		CURLIN	1SAVE CURLIN
3022	003503	000000	001607					
3023	003504	000000	000476					
3024	003505	001000	000175	44040	MOV	A,L		
3025	003506	001000	000244	44060	ANA	H		1SEE IF IT WAS DIRECT
3026	003507	001000	000074	44080	INR	A		
3027	003510	001000	000112	44100	JZ	DIRIS		1IF NOT SET UP FOR CONTINUE
3028	003511	000000	000352					
3029	003512	000000	000303					
3030	003513	001000	000042	44120	SHLO		OLDLIN	1SAVE OLD LINE #
3031	003514	000000	001611					
3032	003515	000000	000311					
3033	003516	001000	000052	44140	LHLD		TEMP	1GET POINTER TO START OF STATEMENT
3034	003517	000000	001603					