

GOTCHA!

GOTCHA! pits you against your opponent on a colorful game in which you try to occupy the playing field while blocking your opponent's access.

RED starts in the upper left hand corner of the board; BLUE in the lower right. At START, RED begins travelling downward, leaving a solid red line, and BLUE travels upward, leaving a blue line. Direction is altered by the Cromemco Joystick controls. If a player hits a boundary, himself, or the other player's line, his opponent scores a point. The game continues until nine points have been scored by one player. Pushbutton 1 starts the game and pushbutton 3 resets it to zero.

Pushbutton 2 speeds up the progress of the lines and can be used strategically against your opponent.

A source listing of the GOTCHA! program is given on the following pages.

CROMEMCO CDOS Z80 ASSEMBLER V.1.4A
 GOTCHA, GOTCHA, GOTCHA !!!!!!!!!!!!!!!

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                                0002 ;
                                0003 ;THIS IS THE EXCITING GAME OF GOTCHA !!!!!!!
                                0004 ;
0000                                0005      ORG      0
0000 F3                            0006 START:  DI
0001 315B03                        0007      LD      SP,STACK
0004 CDBE00                        0008      CALL   INIT          ; INIT PROGRAM
0007 CDFB02                        0009      CALL   Wbone         ; WAIT FOR BUTTON ONE
000A 2A1403                        0010 MAIN:   LD      HL,(POS1)      ; POSITION, PLAYER 1
000D EB                            0011      EX      DE,HL          ; PUT IN DE
000E 3E09                          0012      LD      A,P1COLR      ; COLOR, PLAYER 1
0010 321A03                        0013      LD      (NCOLOR),A
0013 3A1803                        0014      LD      A,(DIR1)      ; DIRECTION, PLAYER 1
0016 CD1602                        0015      CALL   MOVDOT      ; MAKE MOVE
0019 EB                            0016      EX      DE,HL
001A 221403                        0017      LD      (POS1),HL      ; STORE NEW XY
001D EB                            0018      EX      DE,HL
001E 010000                        0019      LD      BC,0          ; INIT FLAGS
0021 CA2D00                        0020      JP      Z,MAN300      ; CAN MOVE
0024 C5                            0021      PUSH   BC          ; SAVE BC
0025 3E0F                          0022      LD      A,15         ; PAINT DOT WHITE
0027 CDCB01                        0023      CALL   PUTCOL
002A C1                            0024      POP    BC          ; RESTORE BC
002B 0601                          0025      LD      B,1          ; SAY CAN'T MOVE
002D C5                            0026 MAN300: PUSH   BC          ; SAVE FLAGS
002E 2A1603                        0027      LD      HL,(POS2)      ; POSITION, PLAYER 2
0031 EB                            0028      EX      DE,HL          ; PUT IN DE
0032 3E0C                          0029      LD      A,P2COLR      ; COLOR, PLAYER 2
0034 321A03                        0030      LD      (NCOLOR),A
0037 3A1903                        0031      LD      A,(DIR2)      ; DIRECTION, PLAYER 2
003A CD1602                        0032      CALL   MOVDOT      ; MAKE MOVE
003D EB                            0033      EX      DE,HL
003E 221603                        0034      LD      (POS2),HL      ; SAVE NEW XY
0041 EB                            0035      EX      DE,HL
0042 C1                            0036      POP    BC          ; CAN MOVE
0043 CA4F00                        0037      JP      Z,MAN320      ; CAN MOVE
0046 C5                            0038      PUSH   BC          ; SAVE BC
0047 3E0F                          0039      LD      A,15         ; PAINT DOT WHITE
0049 CDCB01                        0040      CALL   PUTCOL
004C C1                            0041      POP    BC          ; RESTORE BC
004D 0E01                          0042      LD      C,1          ; SAY CAN'T MOVE
004F 7B                            0043 MAN320: LD      A,B          ; GET 1ST FLAG
0050 A7                            0044      AND     A
0051 C26900                        0045      JP      NZ,MAN400      ; PLAYER 1 HIT
0054 79                            0046      LD      A,C
0055 A7                            0047      AND     A
0056 CA9A00                        0048      JP      Z,MAN600      ; NOBODY HIT
0059 CDA600                        0049      CALL   CPOS          ; CHECK IF RAN INTO EACH
005C CA7B00                        0050      JP      Z,MAN450      ; YES
005F 211203                        0051      LD      HL,NUM1      ; PT TO SCORE 1
0062 34                            0052      INC     (HL)
0063 CD0401                        0053      CALL   DPLAY1      ; DISPLAY NEW SCORE

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0066 C37B00      0054      JP      MAN450
                  0055 ;
0069 79          0056 MAN400: LD      A, C      ; GET 2ND FLAG
006A A7          0057      AND      A
006B C27B00      0058      JP      NZ, MAN450    ; BOTH HIT
006E CDA600      0059      CALL    CPOS         ; G, RAN INTO EACH OTHER
0071 CA7B00      0060      JP      Z, MAN450     ; YES
0074 211303      0061      LD      HL, NUM2     ; PT TO SCORE 2
0077 34          0062      INC      (HL)
0078 CDF600      0063      CALL    DPLAY2       ; DISPLAY NEW SCORE
007B CDB300      0064 MAN450: CALL    SONG       ; PLAY A SONG
007E 3A1203      0065 MAN500: LD      A, (NUM1)  ; GET SCORE 1
0081 FE09        0066      CP      9
0083 C8E00       0067      JP      Z, ENDRND    ; END OF ROUND
0086 3A1303      0068      LD      A, (NUM2)    ; GET SCORE 2
0089 FE09        0069      CP      9
008B C29400      0070      JP      NZ, MAN550    ; NOT END OF ROUND
008E CDFB02      0071 ENDRND: CALL    WBONE     ; WAIT FOR BUTTON 1
0091 CDBE00      0072      CALL    INIT        ; RE-INIT PROGRAM
0094 CDD100      0073 MAN550: CALL    DAZWRT    ; REWRITE SCREEN
0097 C30A00      0074      JP      MAIN        ; LOOP
                  0075 ;
009A CDD202      0076 MAN600: CALL    WAIT      ; WAIT A WHILE
009D CD3C02      0077      CALL    GNEW1       ; GET NEW DIRECTIONS
00A0 CD5502      0078      CALL    GNEW2
00A3 C30A00      0079      JP      MAIN
                  0080 ;
                  0081 ; COMPARE BOTH POSITIONS
                  0082 ; OUTPUT - Z SET IF EQUAL
                  0083 ;
00A6 2A1403      0084 CPOS:   LD      HL, (POS1)  ; POSITION, PLAYER 1
00A9 EB          0085      EX      DE, HL
00AA 2A1603      0086      LD      HL, (POS2)  ; POSITION, PLAYER 2
00AD 7A          0087      LD      A, D
00AE BC          0088      CP      H
00AF C0          0089      RET      NZ          ; NOT EQUAL
00B0 7B          0090      LD      A, E
00B1 BD          0091      CP      L
00B2 C9          0092      RET
                  0093 ;
                  0094 ; PLAY A SONG
                  0095 ;
00B3 21B900      0096 SONG:   LD      HL, SON090
00B6 C3AE02      0097      JP      NOTES
                  0098 ;
00B9 40          0099 SON090: DB      40H      ; VOLUME
00BA 7B          0100      DB      120        ; FREQ. PARM
00BB F401        0101      DW      500        ; DURATION
00BD 00          0102      DB      0          ; END OF TABLE
                  0103 ;
                  0104 ; INITIALIZE PROGRAM
                  0105 ;

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00BE 3E90          0106 INIT:   LD      A,090H
00C0 D30F          0107          OUT     15,A
00C2 3E82          0108          LD      A,[DISPLY SHR 9]+80H
00C4 D30E          0109          OUT     14,A
00C6 3E00          0110          LD      A,0
00CB 321203        0111          LD      (NUM1),A          ; INIT SCORE
00CB 321303        0112          LD      (NUM2),A
00CE CDFD01        0113          CALL    INTJOY          ; INIT JOY STICKS
                   0114 ;
                   0115 ;WRITE DAZZLER DISPLAY
                   0116 ;
00D1 210903        0117 DAZWRT: LD      HL,309H
00D4 221403        0118          LD      (POS1),HL          ; INIT POSITION FOR PLAYER
00D7 211C1C        0119          LD      HL,1C1CH
00DA 221603        0120          LD      (POS2),HL          ; INIT POSITION FOR PLAYER
00DD 3E02          0121          LD      A,2          ; DIRECTION 1 = DOWN
00DF 321803        0122          LD      (DIR1),A
00E2 3E01          0123          LD      A,1          ; DIRECTION 2 = UP
00E4 321903        0124          LD      (DIR2),A
00E7 210004        0125          LD      HL,DISPLY          ; PT TO DISPLAY
00EA 010002        0126          LD      BC,200H          ; LENGTH
00ED CDEE01        0127          CALL    CLEAR          ; CLEAR DISPLAY AREA
00F0 CD6D01        0128          CALL    BOARD          ; DISPLAY BOARDER
00F3 CD0401        0129          CALL    DPLAY1          ; DISPLAY 1ST SCORE
                   0130 ;
                   0131 ; DISPLAY 2ND SCORE
                   0132 ;
00F6 11001C        0133 DPLAY2: LD      DE,28*256          ; PT TO POSITION
00F9 3E0C          0134          LD      A,P2COLR          ; GET COLOR
00FB 321A03        0135          LD      (NCOLOR),A
00FE 3A1303        0136          LD      A,(NUM2)          ; GET SCORE
0101 C30F01        0137          JP      DSPNUM          ; DISPLAY NUMBER
                   0138 ;
                   0139 ; DISPLAY 1ST SCORE
                   0140 ;
0104 110001        0141 DPLAY1: LD      DE,100H          ; PT TO POSITION
0107 3E09          0142          LD      A,P1COLR          ; GET COLOR
0109 321A03        0143          LD      (NCOLOR),A
010C 3A1203        0144          LD      A,(NUM1)          ; GET SCORE
                   0145 ;
                   0146 ; DISPLAY 3X5 DIGIT ON DAZZLER
0147 ; INPUT - DE CONTAINS TOP,LEFT X,Y FOR NUMBER
0148 ;             A CONTAINS NUMBER
0149 ;
010F 213D01        0150 DSPNUM: LD      HL,DNMTAB          ; PT TO DIGIT TABLE
0112 E60F          0151          AND     15
0114 47            0152          LD      B,A
0115 87            0153          ADD     A
0116 80            0154          ADD     B
0117 CDF801        0155          CALL    ADDAHL          ; PT TO CORRECT NUMBER
011A 0E03          0156          LD      C,3          ; COUNTER
011C 0605          0157 DNM300: LD      B,5          ; COUNTER

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011E 7E	0158	LD	A, (HL)	; GET BYTE FROM TABLE
011F 17	0159 DNM320:	RLA		; GET 1ST BIT
0120 F5	0160	PUSH	AF	; SAVE AF
0121 3A1A03	0161	LD	A, (NCOLOR)	; GET COLOR FOR NUMBER
0124 DA2801	0162	JP	C, DNM350	; DO PUT COLOR THERE
0127 97	0163	SUB	A	; DO NOT PUT COLOR THERE
0128 CDCB01	0164 DNM350:	CALL	PUTCOL	; PUT COLOR
012B F1	0165	POP	AF	; RESTORE AF
012C 1C	0166	INC	E	; INC Y POSITION
012D 05	0167	DEC	B	; COUNT DOWN
012E C21F01	0168	JP	NZ, DNM320	; LOOP
0131 1D	0169	DEC	E	
0132 1D	0170	DEC	E	
0133 1D	0171	DEC	E	
0134 1D	0172	DEC	E	
0135 1D	0173	DEC	E	
0136 14	0174	INC	D	; INC X POSITION
0137 23	0175	INC	HL	; PT TO NEXT BYTE
0138 0D	0176	DEC	C	; COUNT DOWN
0139 C21C01	0177	JP	NZ, DNM300	; LOOP
013C C9	0178	RET		
	0179 ;			
013D F888F8	0180 DNMTAB:	DB	0F8H, 088H, 0F8H	; ZERO
0140 0000F8	0181	DB	000H, 000H, 0F8H	; ONE
0143 B8A8E8	0182	DB	088H, 0A8H, 0E8H	; TWO
0146 A8A8F8	0183	DB	0A8H, 0A8H, 0F8H	; THREE
0149 E020F8	0184	DB	0E0H, 020H, 0F8H	; FOUR
014C E8A8B8	0185	DB	0E8H, 0A8H, 088H	; FIVE
014F F8A8B8	0186	DB	0F8H, 0A8H, 088H	; SIX
0152 B080F8	0187	DB	080H, 080H, 0F8H	; SEVEN
0155 F8A8F8	0188	DB	0F8H, 0A8H, 0F8H	; EIGHT
0158 E0A0F8	0189	DB	0E0H, 0A0H, 0F8H	; NINE
015B F8A0F8	0190	DB	0F8H, 0A0H, 0F8H	; A
015E F82838	0191	DB	0F8H, 028H, 038H	; B
0161 F88888	0192	DB	0F8H, 088H, 088H	; C
0164 3828F8	0193	DB	038H, 028H, 0F8H	; D
0167 F8A8A8	0194	DB	0F8H, 0A8H, 0A8H	; E
016A F8A0A0	0195	DB	0F8H, 0A0H, 0A0H	; F
	0196 ;			
	0197 ;			
	0197 ;			
	0197 ;			
016D 110600	0199 BOARD:	LD	DE, 6	; START OF BOARDER
0170 0620	0200	LD	B, 32	; LENGTH OF BOARDER
0172 3E0A	0201 BRD300:	LD	A, BCOLOR	; COLOR OF BOARDER
0174 CDCB01	0202	CALL	PUTCOL	; PUT COLOR
0177 14	0203	INC	D	; INC X PTR
0178 05	0204	DEC	B	; COUNT DOWN
0179 C27201	0205	JP	NZ, BRD300	; LOOP UNTIL DONE
017C 111F00	0206	LD	DE, 31	
017F 0620	0207	LD	B, 32	; LENGTH
0181 3E0A	0208 BRD320:	LD	A, BCOLOR	; COLOR OF BOARDER
0183 CDCB01	0209	CALL	PUTCOL	; PUT COLOR

0186 14	0210	INC	D	; INC X PTR
0187 05	0211	DEC	B	; COUNT DOWN
0188 C28101	0212	JP	NZ, BRD320	; LOOP UNTIL DONE
0188 110700	0213	LD	DE, 7	
018E 061B	0214	LD	B, 24	; LENGTH
0190 3E0A	0215 BRD340:	LD	A, BCOLOR	; COLOR OF BOARDER
0192 CDCB01	0216	CALL	PUTCOL	; PUT COLOR
0195 1C	0217	INC	E	; INC Y PTR
0196 05	0218	DEC	B	; COUNT DOWN
0197 C29001	0219	JP	NZ, BRD340	; LOOP UNTIL THRU
019A 11071F	0220	LD	DE, 1F07H	
019D 061B	0221	LD	B, 24	; LENGTH
019F 3E0A	0222 BRD360:	LD	A, BCOLOR	; COLOR OF BOARDER
01A1 CDCB01	0223	CALL	PUTCOL	; PUT COLOR
01A4 1C	0224	INC	E	; INC Y PTR
01A5 05	0225	DEC	B	; COUNT DOWN
01A6 C29F01	0226	JP	NZ, BRD360	; LOOP
01A9 C9	0227	RET		
	0228 ;			
	0229 ; POINT TO DOT			
	0230 ; INPUT - DE CONTAINS XY			
	0231 ; OUTPUT - HL PTS TO NIBBLE			
	0232 ;			
	0233 ;			
01AA 6B	0234 DOTPTR:	LD	L, E	; GET Y POSITION
01AB 2600	0235	LD	H, 0	
01AD 29	0236	ADD	HL, HL	; MULTIPLY BY 16
01AE 29	0237	ADD	HL, HL	
01AF 29	0238	ADD	HL, HL	
01B0 29	0239	ADD	HL, HL	
01B1 7A	0240	LD	A, D	; GET X POSITION
01B2 1F	0241	RRA		; DIVIDE BY 2
01B3 F5	0242	PUSH	AF	; SAVE CARRY
01B4 CDFB01	0243	CALL	ADDAHL	; ADD TO HL
01B7 010004	0244	LD	BC, DISPLY	; PT TO DISPLAY
01BA 09	0245	ADD	HL, BC	; PT TO CORRECT DOT
01BB F1	0246	POP	AF	; RESTORE CARRY
01BC C9	0247	RET		
	0248 ;			
	0249 ; GET DOT			
	0250 ; INPUT - DE CONTAINS XY			
	0251 ; OUTPUT - A CONTAINS COLOR			
	0252 ;			
01BD CDAA01	0253 GETCOL:	CALL	DOTPTR	; PT TO NIBBLE
01C0 7E	0254	LD	A, (HL)	; GET BYTE
01C1 D2CB01	0255	JP	NC, GCL300	; BOTTOM NIBBLE
01C4 1F	0256	RRA		; GET TOP NIBBLE
01C5 1F	0257	RRA		
01C6 1F	0258	RRA		
01C7 1F	0259	RRA		
01C8 E60F	0260 GCL300:	AND	15	
01CA C9	0261	RET		

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                                0262 ;
                                0263 ;PUT COLOR
                                0264 ;INPUT - A CONTAINS COLOR
                                0265 ;      DE CONTAINS X,Y POSITION
                                0266 ;
01CB E5      0267 PUTCOL:  PUSH    HL                ; SAVE REGISTERS
01CC C5      0268          PUSH    BC
01CD F5      0269          PUSH    AF                ; SAVE COLOR
01CE CDAA01   0270          CALL    DOTPTR           ; PT TO NIBBLE
01D1 C1      0271          POP     BC                ; GET COLOR
01D2 78      0272          LD      A,B              ; MOVE COLOR TO A
01D3 D2E301   0273          JP      NC,PTC400        ; BOTTOM NIBBLE
01D6 17      0274          RLA                     ; TOP NIBBLE
01D7 17      0275          RLA
01D8 17      0276          RLA
01D9 17      0277          RLA
01DA E6F0     0278          AND     OFOH             ; AND OFF BOTTOM NIBBLE
01DC 47      0279          LD      B,A              ; SAVE
01DD 7E      0280          LD      A,(HL)           ; GET DAZZLER BYTE
01DE E60F     0281          AND     15              ; AND OFF TOP NIBBLE
01E0 C3E901   0282          JP      PTC900
                                0283 ;
01E3 E60F     0284 PTC400:  AND     15              ; AND OFF TOP NIBBLE
01E5 47      0285          LD      B,A              ; SAVE
01E6 7E      0286          LD      A,(HL)           ; GET DAZZLER BYTE
01E7 E6F0     0287          AND     OFOH             ; AND OFF BOTTOM NIBBLE
01E9 B0      0288 PTC900:  OR      B                ; COMBINE NIBBLES
01EA 77      0289          LD      (HL),A           ; PUT IN DISPLAY
01EB C1      0290          POP     BC                ; RESTORE REGISTERS
01EC E1      0291          POP     HL
01ED C9      0292          RET
                                0293 ;
                                0294 ;CLEAR AREA WITH ZERO'S
                                0295 ;INPUT - HL PT TO AREA
                                0296 ;      BC CONTAIN LENGTH
                                0297 ;
01EE 78      0298 CLEAR:   LD      A,B
01EF B1      0299          OR      C
01F0 C8      0300          RET     Z                ; LENGTH = 0
01F1 97      0301          SUB     A                ; CLEAR A
01F2 77      0302          LD      (HL),A           ; CLEAR BYTE
01F3 23      0303          INC     HL               ; PT TO NEXT BYTE
01F4 0B      0304          DEC     BC               ; COUNT DOWN
01F5 C3EE01   0305          JP      CLEAR           ; LOOP
                                0306 ;
                                0307 ;ADD A TO HL
                                0308 ;
01F8 85      0309 ADDAHL:  ADD     L
01F9 6F      0310          LD      L,A
01FA D0      0311          RET     NC
01FB 24      0312          INC     H
01FC C9      0313          RET

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                                0314 ;
                                0315 ; INITIALIZE JOY STICKS
                                0316 ;
01FD DB1A                      0317 INTJOY: IN      A, JOY1UD      ; GET UP/DOWN JOY STICK 1
01FF 2F                        0318                CPL
0200 320E03                    0319                LD      (AJ1UD), A      ; ADJUSTMENT
0203 DB19                      0320                IN      A, JOY1RL      ; GET RIGHT/LEFT JOY STICK
0205 2F                        0321                CPL
0206 320F03                    0322                LD      (AJ1RL), A      ; ADJUSTMENT
0209 DB1C                      0323                IN      A, JOY2UD      ; GET UP/DOWN JOY STICK 2
020B 2F                        0324                CPL
020C 321003                    0325                LD      (AJ2UD), A      ; ADJUSTMENT
020F DB1B                      0326                IN      A, JOY2RL      ; GET RIGHT/LEFT JOY STICK
0211 2F                        0327                CPL
0212 321103                    0328                LD      (AJ2RL), A      ; ADJUSTMENT
0215 C9                        0329                RET
                                0330 ;
                                0331 ; MOVE DOT FOR PLAYER
                                0332 ; INPUT - DE CONTAINS XY FOR CURRENT POSITION
                                0333 ;           A CONTAINS DIRECTION TO MOVE
                                0334 ;           NCOLOR CONTAINS PLAYER'S COLOR
                                0335 ; OUTPUT - DE CONTAINS NEW XY
                                0336 ;           Z SET IF CAN MOVE
                                0337 ;
0216 3D                        0338 MOVDOT: DEC      A
0217 CA2602                    0339                JP      Z, MDT300      ; MOVE UP
021A 3D                        0340                DEC      A
021B CA2A02                    0341                JP      Z, MDT320      ; MOVE DOWN
021E 3D                        0342                DEC      A
021F CA2E02                    0343                JP      Z, MDT340      ; MOVE RIGHT
0222                                0344                                ; MOVE LEFT
0222 15                        0345                DEC      D      ; MOVE X POSITION LEFT
0223 C32F02                    0346                JP      MDT400
                                0347 ;
0226 1D                        0348 MDT300: DEC      E      ; MOVE Y POSITION UP
0227 C32F02                    0349                JP      MDT400
                                0350 ;
022A 1C                        0351 MDT320: INC      E      ; MOVE Y POSITION DOWN
022B C32F02                    0352                JP      MDT400
                                0353 ;
022E 14                        0354 MDT340: INC      D      ; MOVE X POSITION RIGHT
022F CDBD01                    0355 MDT400: CALL    GETCOL      ; GET COLOR
0232 A7                        0356                AND      A
0233 C0                        0357                RET      NZ      ; CAN'T MOVE
0234 3A1A03                    0358                LD      A, (NCOLOR)      ; GET COLOR
0237 CDCB01                    0359                CALL    PUTCOL      ; PUT COLOR
023A 97                        0360                SUB      A      ; SAY MOVED
023B C9                        0361                RET
                                0362 ;
                                0363 ; GET NEW DIRECTION FOR PLAYER 1
                                0364 ;
023C 3A0E03                    0365 GNEW1: LD      A, (AJ1UD)      ; GET ADJUSTMENT

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023F 47          0366          LD      B, A
0240 DB1A        0367          IN      A, JOY1UD      ; READ JOY STICK UP/DOWN
0242 80          0368          ADD     B              ; ADJUST
0243 47          0369          LD      B, A
0244 3A0F03      0370          LD      A, (AJ1RL)      ; GET ADJUSTMENT
0247 4F          0371          LD      C, A
0248 DB19        0372          IN      A, JOY1RL      ; READ RIGHT/LEFT
024A 81          0373          ADD     C              ; ADJUST
024B 4F          0374          LD      C, A
024C CD6E02      0375          CALL    FNDDIR          ; FIND DIRECTION
024F A7          0376          AND     A
0250 C8          0377          RET      Z              ; NO CHANGE
0251 321803      0378          LD      (DIR1), A      ; CHANGE DIRECTION
0254 C9          0379          RET

0380 ;
0381 ; GET NEW DIRECTION FOR PLAYER 2
0382 ;
0255 3A1003      0383 GNEW2: LD      A, (AJ2UD)      ; GET ADJUSTMENT
0258 47          0384          LD      B, A
0259 DB1C        0385          IN      A, JOY2UD      ; READ UP/DOWN
025B 80          0386          ADD     B              ; ADJUST
025C 47          0387          LD      B, A
025D 3A1103      0388          LD      A, (AJ2RL)      ; GET ADJUSTMENT
0260 4F          0389          LD      C, A
0261 DB1B        0390          IN      A, JOY2RL      ; READ RIGHT/LEFT
0263 81          0391          ADD     C              ; ADJUST
0264 4F          0392          LD      C, A
0265 CD6E02      0393          CALL    FNDDIR          ; FIND DIRECTION
0268 A7          0394          AND     A
0269 C8          0395          RET      Z              ; NO CHANGE
026A 321903      0396          LD      (DIR2), A      ; CHANGE DIRECTION
026D C9          0397          RET

0398 ;
0399 ; FIND DIRECTION
0400 ; INPUT - B CONTAINS UP/DOWN
0401 ;          C CONTAINS RIGHT/LEFT
0402 ; OUTPUT - A CONTAINS DIRECTION
0403 ;
026E 78          0404 FNDDIR: LD      A, B              ; GET UP/DOWN
026F A7          0405          AND     A
0270 FA7802      0406          JP      M, FDR300      ; DOWN
0273 1601        0407          LD      D, 1          ; UPWARD
0275 C37C02      0408          JP      FDR320
0409 ;
0278 1602        0410 FDR300: LD      D, 2              ; DOWNWARD
027A 2F          0411          CPL              ; COMPLIMENT
027B 47          0412          LD      B, A              ; SAVE COMPLIMENT
027C FE40        0413 FDR320: CP      40H
027E D28302      0414          JP      NC, FDR330      ; LARGE MOVEMENT
0281 1600        0415          LD      D, 0              ; NO CHANGE
0283 79          0416 FDR330: LD      A, C              ; GET RIGHT/LEFT
0284 A7          0417          AND     A

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0285 FA8D02	0418	JP	M, FDR400	; LEFT
0288 1E03	0419	LD	E, 3	; RIGHT
028A C39102	0420	JP	FDR420	
	0421	;		
028D 1E04	0422 FDR400:	LD	E, 4	; LEFT
028F 2F	0423	CPL		; COMPLIMENT
0290 4F	0424	LD	C, A	; SAVE COMPLIMENT
0291 FE40	0425 FDR420:	CP	40H	
0293 D29802	0426	JP	NC, FDR430	; LARGE MOVEMENT
0296 1E00	0427	LD	E, 0	; NO CHANGE
0298 7A	0428 FDR430:	LD	A, D	
0299 93	0429	SUB	E	
029A C8	0430	RET	Z	; NO CHANGE
029B 7A	0431	LD	A, D	
029C A7	0432	AND	A	
029D CAAA02	0433	JP	Z, FDR500	; MUST BE RIGHT/LEFT
02A0 7B	0434	LD	A, E	
02A1 A7	0435	AND	A	
02A2 CAAC02	0436	JP	Z, FDR550	; MUST BE UP/DOWN
02A5 7B	0437	LD	A, B	
02A6 B9	0438	CP	C	
02A7 DAAA02	0439	JP	C, FDR500	; MUST BE RIGHT/LEFT
02AA 7B	0440 FDR500:	LD	A, E	
02AB C9	0441	RET		
	0442	;		
02AC 7A	0443 FDR550:	LD	A, D	
02AD C9	0444	RET		
	0445	;		
	0446	;	NOTES	
	0447	;	THIS ROUTINE PLAYS THE NOTES POINTED TO BY HL.	
	0448	;	1ST BYTE = VOLUME	
	0449	;	2ND BYTE = FREQ. PARM	
	0450	;	3RD BYTE = LOW BYTE OF DURATION	
	0451	;	4TH BYTE = HIGH BYTE OF DURATION	
	0452	;		
02AE 7E	0453 NOTES:	LD	A, (HL)	; GET VOLUME
02AF A7	0454	AND	A	
02B0 C8	0455	RET	Z	; END OF NOTES
02B1 47	0456	LD	B, A	; MOVE VOLUME TO B
02B2 23	0457	INC	HL	
02B3 4E	0458	LD	C, (HL)	; GET FREQ. PARM
02B4 23	0459	INC	HL	
02B5 5E	0460	LD	E, (HL)	; GET DURATION LOW
02B6 23	0461	INC	HL	
02B7 56	0462	LD	D, (HL)	; GET DURATION HIGH
02B8 23	0463	INC	HL	
02B9 CDBF02	0464	CALL	TONE	; OUTPUT TONE
02BC C3AE02	0465	JP	NOTES	
	0466	;		
	0467	;	TONE ROUTINE	
	0468	;	INPUT - B CONTAINS VOLUME	
	0469	;	C CONTAINS FREQ. PARM	

CROMEMCO CDOS Z80 ASSEMBLER V. 1. 4A
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                                0470 ;          DE CONTAINS DURATION
                                0471 ;
02BF 0472 TONE:
02BF 78 0473 TON200: LD      A, B          ; GET VOLUME
02C0 2F 0474          CPL              ; COMPLIMENT
02C1 47 0475          LD      B, A        ; SAVE VOLUME
02C2 D319 0476          OUT     SPEEK1, A  ; OUTPUT TO SPEEKERS
02C4 D31B 0477          OUT     SPEEK2, A
02C6 79 0478          LD      A, C        ; GET FREQ. PARM
02C7 3D 0479 TON300: DEC     A            ; DEC COUNTER
02C8 C2C702 0480          JP      NZ, TON300 ; WAIT LOOP
02CB 1B 0481          DEC     DE          ; COUNT DOWN
02CC 7A 0482          LD      A, D
02CD B3 0483          OR      E
02CE C2BF02 0484          JP      NZ, TON200 ; NOT THRU
02D1 C9 0485          RET
                                0486 ;
                                0487 ; WAIT A WHILE
                                0488 ;
02D2 DB18 0489 WAIT:   IN      A, 18H      ; READ BUTTONS
02D4 E622 0490          AND     22H        ; LOOK AT BOTH 2'S
02D6 FE22 0491          CP      22H        ; Q, IS EITHER PUSHED
02D8 061E 0492          LD      B, 30      ; SLOW TIME
02DA CADF02 0493          JP      Z, DELAY   ; NONE PUSHED, SLOW TIME
02DD 060F 0494          LD      B, 15      ; FAST TIME
                                0495 ;
                                0496 ; DELAY
                                0497 ; INPUT - B CONTAINS TIME
                                0498 ;
02DF DB0E 0499 DELAY:  IN      A, 14        ; READ DAZZLER
02E1 FE3F 0500          CP      3FH
02E3 C2DF02 0501          JP      NZ, DELAY   ; WAIT FOR END OF FRAME
02E6 DB0E 0502 DLY300: IN      A, 14        ; READ DAZZLER
02E8 FE3F 0503          CP      3FH
02EA CAE602 0504          JP      Z, DLY300   ; WAIT FOR START OF FRAME
02ED 05 0505          DEC     B
02EE C2DF02 0506          JP      NZ, DELAY   ; DO IT AGAIN
02F1 DB18 0507          IN      A, 18H      ; READ BUTTONS
02F3 E644 0508          AND     44H
02F5 FE44 0509          CP      44H
02F7 C20B03 0510          JP      NZ, ABORT
02FA C9 0511          RET
                                0512 ;
                                0513 ; WAIT FOR BUTTON 1
                                0514 ; *** ABORT IF BUTTON 3 ****
                                0515 ;
02FB DB18 0516 WBONE:  IN      A, 18H      ; READ BUTTON
02FD E611 0517          AND     11H
02FF FE11 0518          CP      11H
0301 C0 0519          RET     NZ          ; BUTTON HIT
0302 DB18 0520          IN      A, 18H      ; READ BUTTONS
0304 E644 0521          AND     44H

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CROMEMCO CDOS Z80 ASSEMBLER V. 1. 4A
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0306 FE44	0522	CP	44H	
0308 CAFB02	0523	JP	Z, WBONE	
030B C30000	0524 ABORT:	JP	0	; *** ABORT ***
	0525 ;			
(001A)	0526 JOY1UD:	EQU	1AH	; JOY STICK 1 UP/DOWN
(0019)	0527 JOY1RL:	EQU	19H	; JOY STICK 1 RIGHT/LEFT
(001C)	0528 JOY2UD:	EQU	1CH	; JOY STICK 2 UP/DOWN
(001B)	0529 JOY2RL:	EQU	1BH	; JOY STICK 2 RIGHT/LEFT
(0019)	0530 SPEEK1:	EQU	19H	; SPEEKER 1
(001B)	0531 SPEEK2:	EQU	1BH	; SPEEKER 2
	0532 ;			
030E (0001)	0533 AJ1UD:	DEFS	1	; ADJUSTMENT FOR JOY1UD
030F (0001)	0534 AJ1RL:	DEFS	1	; ADJUSTMENT FOR JOY1RL
0310 (0001)	0535 AJ2UD:	DEFS	1	; ADJUSTMENT FOR JOY2UD
0311 (0001)	0536 AJ2RL:	DEFS	1	; ADJUSTMENT FOR JOY2RL
	0537 ;			
0312 (0001)	0538 NUM1:	DEFS	1	; PLAYER 1 SCORE
0313 (0001)	0539 NUM2:	DEFS	1	; PLAYER 2 SCORE
0314 (0002)	0540 POS1:	DEFS	2	; PLAYER 1 POSITION
0316 (0002)	0541 POS2:	DEFS	2	; PLAYER 2 POSITION
0318 (0001)	0542 DIR1:	DEFS	1	; PLAYER 1 DIRECTION
0319 (0001)	0543 DIR2:	DEFS	1	; PLAYER 2 DIRECTION
	0544 ;			
(000A)	0545 BCOLOR:	EQU	0AH	; GREEN FOR BOARDER
031A (0001)	0546 NCOLOR:	DEFS	1	; COLOR FOR NUMBER
(0009)	0547 P1COLR:	EQU	09H	; PLAYER 1 COLOR = RED
(000C)	0548 P2COLR:	EQU	0CH	; PLAYER 2 COLOR = BLUE
	0549 ;			
031B (0040)	0550	DEFS	64	
(035B)	0551 STACK:	EQU	\$; STACK
	0552 ;			
(0400)	0553 DISPLY:	EQU	[\$-1]/512*512+512	
	0554 ;			
035B	0555	END		

0000 ERRORS

CROMEMCO CROSS REFERENCE LISTING V. 1.0 FOR FILE GOTCHA

ABORT	0525	0511		
ADDAHL	0308	0154	0242	
AJ1RL	0535	0321	0369	
AJ1UD	0534	0318	0364	
AJ2RL	0537	0327	0387	
AJ2UD	0536	0324	0382	
BCOLOR	0546	0200	0207	0214 0221
BOARD	0198	0127		
BRD300	0200	0204		
BRD320	0207	0211		
BRD340	0214	0218		
BRD360	0221	0225		
CLEAR	0297	0126	0304	
CPOS	0083	0048	0058	
DAZWRT	0116	0072		
DELAY	0500	0494	0502	0507
DIR1	0543	0013	0121	0377
DIR2	0544	0030	0123	0395
DISPLY	0554	0107	0124	0243
DLY300	0503	0505		
DNM300	0156	0176		
DNM320	0158	0167		
DNM350	0163	0161		
DNMTAB	0179	0149		
DOTPTR	0233	0252	0269	
DPLAY1	0140	0052	0128	
DPLAY2	0132	0062		
DSPNUM	0149	0136		
ENDRND	0070	0066		
FDR300	0409	0405		
FDR320	0412	0407		
FDR330	0415	0413		
FDR400	0421	0417		
FDR420	0424	0419		
FDR430	0427	0425		
FDR500	0439	0432	0438	
FDR550	0442	0435		
FNDDIR	0403	0374	0392	
GCL300	0259	0254		
GETCOL	0252	0354		
GNEW1	0364	0076		
GNEW2	0382	0077		
INIT	0105	0007	0071	
INTJOY	0316	0112		
JOY1RL	0528	0319	0371	
JOY1UD	0527	0316	0366	
JOY2RL	0530	0325	0389	
JOY2UD	0529	0322	0384	
MAIN	0009	0073	0078	
MAN300	0025	0019		
MAN320	0042	0036		
MAN400	0055	0044		
MAN450	0063	0049	0053	0057 0059

MAN500	0064
MAN550	0072 0069
MAN600	0075 0047
MDT300	0347 0338
MDT320	0350 0340
MDT340	0353 0342
MDT400	0354 0345 0348 0351
MOVDDOT	0337 0014 0031
NOLOR	0547 0012 0029 0134 0142 0160 0357
NOTES	0452 0096 0464
NUM1	0539 0050 0064 0110 0143
NUM2	0540 0060 0067 0111 0135
P1COLR	0548 0011 0141
P2COLR	0549 0028 0133
PDS1	0541 0009 0016 0083 0117
PDS2	0542 0026 0033 0085 0119
PTC400	0283 0272
PTC900	0287 0281
PUTCOL	0266 0022 0039 0163 0201 0208 0215 0222 0358
SNOOYO	0098 0095
SONG	0095 0063
SPEEK1	0531 0477
SPEEK2	0532 0478
STACK	0552 0006
START	0005
TNN200	0474 0485
TNN300	0480 0481
TONE	0473 0463
WAIT	0490 0075
WBONE	0517 0008 0070 0524