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1 .TITLE ALEXEC - ALIENS EXECUTIVE
2 .SBTTL *****
3 .SBTTL *
4 .SBTTL *MODULE ALEXEC *
5 .SBTTL *PROGRAMMER DAVE THEURER *
6 .SBTTL *FUNCTION ALIENS EXECUTIVE *
7 .SBTTL *
8 .SBTTL *****
9
10 .REPT 0
11 DATE 21-AUG-80
12 PROJECT # 289
13 DISK # 94, B37
14 LINK STRING ALGAME,ALDISP,ALHARD,ANVGUT,ALVRON
15 .ENDR
16 .NLIST
17 .INCLUDE ALCOMN
18 .LIST
19 .PAGE
20 .SBTTL GLOBLs
21
22 ENTRY POINTS DEFINED HERE
23
24
25 .GLOBL MAINLN,UPSCOR,COCFLI
26
27 ENTRY POINTS DEFINED IN OTHER MODULES
28
29 .GLOBL DISPLA,RESET,INIDSP,PRSTAR,PLDROP,PRBOOM,EAUPD,SYSTEM
30 .GLOBL D7OMSK,D07MSK
31 .GLOBL INISOU,SAUSON,SSLAMS
32 .GLOBL GETINI,HISCHK,INIRAO,INICLK
33 .GLOBL PLAY,MOVCUR
34 .GLOBL SWAPEN,CLRSCO,INEWAV,INEWLI,NEWAV2
35 .GLOBL PRORAT,INIRAT
36 .GLOBL BONSCO,LOGINI
37 .SBTTL COLD START
38 .CSECT
39 .PAGE
40 .SBTTL MAINLOOP
41
42 INPUT POWER ON RESET PREPARATION
43 OUTPUT NONE
44
45 MAINLN JSR INISOU INITIALIZE SOUNDS
46 LDA I,CNEWGA
47 STA QSTATE
48 BEGIN MAINLOOP
49 BEGIN LOOP UNTIL CURRENT FRAME HAS BEEN UP X MS.
50 LDA FRTIMR
51 CMP I,9
52 CSEND
53 LDA I,0 RESTART FRAME TIMER
54 STA FRTIMR
55 JSR EXSTAT EXECUTE APPROPRIATE GAME STATE
56 JSR NONSTA EXECUTE NON-STATE DEPENDENT CODE
57 JSR DISPLA EXECUTE CODE TO DISPLAY NEW SCREEN
58 CLC
59 CSEND LOOP ALWAYS
60 .PAGE
```

```
1      .SBTTL STATE ROUTINE EXECUTOR
2
3      INPUT      QSTATE CODE FOR STATE ROUTINE TO EXECUTE
4      OUTPUT     CONTROL PASSED TO ROUTINE
5
6      EXSTAT
7      LDA INOP0
8      AND I,83
9      CMP I,82
10
11     IFNE          FREEZE   FREE PLAY
12     JSR PRSTAR   PROCESS STAR FIELD
13     LDX QSTATE
14     LDA SWFINA   SET MUST PROCESS FLAG
15     ORA I,MFAKE
16     STA SWFINA
17
18     LDA AX,ROUTAD+1
19     PHA
20     LDA AX,ROUTAD
21     PHA
22     ENDIF
23     NOOPR      RTS
24
25     STATE ROUTINE ADDRESS
26
27     ROUTAD .WORD NEWGAM-1  NEW GAME
28           .WORD NEWLIF-1  NEW LIFE AFTER LOSING A BASE
29           .WORD PLAY-1    PLAY
30           .WORD ENDLIF-1  LIFE LOST
31           .WORD ENDGAM-1  END OF GAME
32           .WORD PAUSE-1   PAUSE
33           .WORD 0         NEW WAVE AFTER SHOOTING ALL INVADERS
34           .WORD ENDWAV-1  END OF WAVE
35           .WORD HISCHK-1  CHECK FOR HI SCORES
36           .WORD GETINI-1  GET HI SCORE INITIALS
37           .WORD DLADR-1   DISPLAY HI SCORE TABLE
38           .WORD PRORAT-1  REQUEST PLAYER RATE
39           .WORD NEWAV2-1  NEW WAVE PART 2
40           .WORD LOGINI-1  LOGO INIT
41           .WORD INIRAT-1  MONSTER DELAY/DISPLAY
42           .WORD NEWLF2-1  NEW LIFE PART 2
43           .WORD PLDROP-1  DROP MODE
44           .WORD SYSTEM-1  END WAVE CLEAN UP AFTER BONUS
45           .WORD PRBOOM-1  BOOM
46
47     ROUTEN
48     .PAGE
49     .SBTTL PAUSE STATE
50
51     INPUT      QNXTSTA CODE FOR STATE ROUTINE TO EXECUTE AFTER PAUSE
52               QTMPAUS PAUSE TIMER # OF X SECOND UNITS TO WAIT
53               QFRAME  FRAME COUNTER
54
55     OUTPUT     QTMPAUS,QSTATE UPDATED
56
57     PAUSE
58     LDA QFRAME
59     AND PSCALE
60     IFEQ
61
62     LDA QTMPAUS      YES
63     IFNE            AT 0 STOP AT 0
64     DEC QTMPAUS      NO. DROP 1
```

```
1  ENDIF
2  IFEQ                      AT 0
3  LDA QNXTSTA              YES. GO TO NEXT STATE
4  STA QSTATE
5  LDA I,0                  RESET STANDARD TIMER SCALE
6  STA PSCALE
7  ENDIF
8  ENDIF
9  JMP MOVCUR               UPDATE CURSOR IF ALIVE
10 .PAGE
11
12 .SBTTL PROCESS CREDITS
13 PROCRE LDA $$CRDT
14 LDY I,0                  YES
15 CMP I,2                  CC IF 1 CREDIT, CS IF 2 OR MORE
16 LDA SWFINA
17 AND I,MSTRT2 MSTRT1
18 STY SWFINA
19 IFNE                      EITHER START PRESSED
20 IFCC                      YES. 1 CREDIT
21 AND I,MSTRT1              YES.
22 ELSE
23 INY                      NO. 2 OR MORE CREDITS
24 DEC $$CRDT                REMOVE 1 CREDIT
25 AND I,MSTRT2
26 ENDIF
27 IFNE                      START
28 DEC $$CRDT                YES. REMOVE A CREDIT
29 INY
30 ENDIF
31 TYA
32 STA NUMPLA                SAVE # PLAYERS 0 ATTRACT
33 IFNE                      GAME
34 LDA QSTATUS
35 ORA I,MATRACT MGTMOD      YES
36 STA QSTATUS              SET GAME MODE
37 LDA I,0                  ZERO BONUS COUNTER
38 STA $BCCNT
39 STA $BC
40 LDA I,CNEWGA
41 STA QSTATE                REQUEST NEW GAME STATE
42 DEC NUMPLA                SET # PLAYERS 0 OR 1
43 LDX NUMPLA
44 IFNE
45 LDX I,3                  2 PLAYERS
46 ENDIF
47 INC X,NGAMIL              UPDATE 1/2 GAME COUNT
48 IFEQ
49 INC X,NGAMIH
50 ENDIF
51 LDA NGAMES
52 SEC
53 ADC NUMPLA
54 CMP I,NRANKS
55 IFCS                      MAX OUT
56 LDA I,NRANKS
57 ENDIF
58 STA NGAMES                COUNT # GAMES
59 ENDIF
60 ELSE
```

```
1 LDA TBHD ATTRACT MODE D-CREDITS
2 IFNE TRYING TO PLAY
3 BIT QSTATUS YES
4 IFPL ATTRACT
5 LDA I,CDPRST YES. PRESS START DISPLAY
6 STA QDSTATE
7 LDA I,020
8 STA QTMPAUS
9 LDA I,CPAUSE
10 STA QSTATE
11 LDA I,CDLADR DISPLAY LADDER
12 STA QNXTSTA
13 LDA I,0
14 STA TBHD
15 STA ELICNT CLEAR AVOID SPIKES DISPLAY
16 ENDIF
17 ENDIF
18 ENDIF
19 RTS
20 .PAGE
21 .SBTTL NON-STATE DEPENDENT PROCESSING
22 NONSTA
23 LDA IN1
24 AND I,MTEST
25 IFEQ SYSTEM STATUS DISPLAY
26 LDA I,CSYSTEM YES
27 STA QSTATE
28 ELSE
29 NO. PROCESS CREDITS
30 BIT QSTATUS
31 IFVC ATTRACT
32 LDA OPTIN2 YES
33 AND I,OM2GAM
34 IFNE 2 GAME MIN OPTION
35 LDY $$CRDT YES.
36 IFEQ CREDITS
37 LDA I,80 NO. SET 2 CREDITS MIN FLAG
38 STA TCMFLG
39 ENDIF
40 BIT TCMFLG Y CREDITS
41 IFMI 2 GAME MIN
42 CPY I,2 YES.
43 IFCC 2 GAMES
44 TYA NO
45 IFNE 1 CREDIT
46 LDA I,CD2GAM YES
47 STA QDSTATE
48 LDA I,CPAUSE
49 STA QSTATE
50 ENDIF
51 JMP NOSTART DISABLE START
52 ELSE
53 LDA I,CDLADR
54 STA QSTATE
55 LDA I,0 NOT ANY MORE. ENABLE START
56 STA TCMFLG
57 ENDIF
58 ENDIF
59 ENDIF
60 LDA $$CRDT YES.
```

1	IFNE	CREDITS	1
2	JSR PROCRE	YES. PROCESS CREDITS	2
3	ENDIF		3
4	NOSTART LDA \$CMODE		4
5	AND I,03		5
6	IFEQ	FREE PLAY	6
7	LDA I,2		7
8	STA \$\$CRDT		8
9	ENDIF		9
10	ENDIF		10
11	ENDIF		11
12	INC QFRAME	UPDATE FRAME COUNTER	12
13	LDA QFRAME		13
14	AND I,1		14
15	IFNE		15
16	JSR EAUPD	PROCESS EAROM	16
17	ENDIF		17
18	LDA \$LMTIM		18
19	IFNE	SLAM SWITCH ON	19
20	JSR SSLAMS	SLAM SOUND	20
21	ENDIF		21
22	ZQAT4C LDA QT2		22
23	IFNE		23
24	LDA I,19.		24
25	CMP CURWAV		25
26	IFCC		26
27	SED		27
28	ENDIF		28
29	ENDIF		29
30	LDA SWFINA		30
31	AND I,MFAKE	SWITCH PROCESSED THIS FRAME	31
32	IFNE		32
33	LDA I,0	NO. FAKE PROCESS	33
34	STA SWFINA		34
35	ENDIF		35
36	RTS		36
37	.PAGE		37
38	.SBTTL PREP-NEW GAME		38
39			39
40	FUNCTION		40
41			41
42	NEWGAM JSR INICHK	INITIALIZE LANGUAGE PTRS, OPTIONS CHECK FOR CHANG	42
43	JSR INIDSP	INITIALIZE DISPLAY	43
44	LDA QSTATUS		44
45	IFMI	ATTRACT	45
46	JSR CLRSCO	NO. CLEAR SCORES	46
47	ENDIF		47
48	LDA I,0		48
49	STA LIVES2	ONE PLAYER GAME DEFAULT PLAYER 2 DEAD	49
50	LDX NUMPLA	GIVE EACH PLAYER NEW GAME EQUIP	50
51	STX PLAYUP		51
52	BEGIN	LOOP FOR EACH PLAYER IN GAME 1 OR 2	52
53	LDX PLAYUP		53
54	LDA LVSGAM	GET # LIVES	54
55	STA AX,LIVES1	INITIAL # OF LIVES GUNS	55
56	LDA I,-1		56
57	STA AX,WAVEN1	FORCE REQUEST RATE STATE	57
58	DEC PLAYUP		58
59	MIEND	ENDLOOP AFTER ALL PLAYERS PROCESSED	59
60	LDA I,0		60


```
1 STA NEWPLA START GAME WITH 1ST PLAYER UP.
2 STA PLAGRO DEACTIVATE STAR FIELD
3 LDA NUMPLA INDUCE PLAY PLAYER 1 MESSAGE
4 STA PLAYUP IF 2 PLAYER GAME.
5 JMP INIRAO INITIALIZE FOR PLAYER RATE REQUEST
6 .PAGE
7 .SBTTL PREP-NEW LIFE
8
9 FUNCTION NEW LIFE INITIALIZATION LAST PLAYER LOST A BASE
10 INPUT
11
12 SECOND 20. FRAMES PER SECOND
13 NEWLIF
14 LDA I,CDPLAY
15 STA QDSTATE DEFAULT
16 LDA I,CNWLF2
17 STA QSTATE
18 STA QNXTSTA
19 LDA NEWPLA
20 CMP PLAYUP
21 IFNE SAME PLAYER AS BEFORE
22 STA PLAYUP NO
23 LDA QSTATUS
24 IFMI ATTRACT
25 LDA I,CDPLPL NO.
26
27 STA QDSTATE WARN PLAYER DISPLAY
28 LDA I,CPAUSE
29 STA QSTATE FOR 2 SECONDS
30 LDA I,4*SECOND LONGER PAUSE
31 LDY COCTAL
32 IFNE COCKTAIL
33 LDA I,2*SECOND YES. NOT AS LONG
34 ENDIF
35 STA QTMPAUS SWITCH PLACES
36 JSR SWAPEN SWAP ENEMIES
37 ENDIF
38 ENDIF
39 JSR COCFLI COCKTAIL FLIP
40 LDX PLAYUP
41 LDA X,WAVEN1
42 STA CURWAV PLAYER S WAVE #
43 JSR INEWLI INITIALIZE OBJECTS DEACTIVATE
44 JMP INISOU SOUNDS OFF
45
46 .PAGE
47 .SBTTL PREP-NEW LIFE PART 2
48 NEWLF2
49 LDA I,CPLAY PLAY STATE FOR
50 STA QNXTSTA GAME AFTER PAUSE
51 LDA I,CDPLAY
52 STA QDSTATE AND DISPLAY NOW
53 LDA I,CPAUSE
54 STA QSTATE
55 LDA I,1*SECOND PAUSE
56 STA QTMPAUS
57 RTS
58 .PAGE
59 .SBTTL PREP-END OF WAVE SETUP STATE
60
```

```
1 ENDWAV
2     LDX PLAYUP
3     LDA X,WAVEN1
4
5     CMP I,98.
6     IFCC
7         MAX AT 99
8     INC X,WAVEN1
9         INCREMENT PLAYER S WAVE #
10    INC CURWAV
11    ENDIF
12    LDA I,CNEWV2
13    STA QSTATE
14    LDA X,BONUS
15    IFNE
16        BONUS
17    JSR BONSCO
18        DETERMINE BONUS    UPDATE SCORE
19    LDX I,-1
20        INDICATE TEMPS HAVE BONUS
21    JSR UPSCOR
22        UPDATE SCORE
23    JSR SAUSON
24        MAKE NOISE
25    ENDIF
26
27        FALL INTO NEW WAVE
28
29    .PAGE
30    .SBTTL PREP-NEW WAVE SETUP STATE
31
32    JMP INEWAV
33        INITIALIZE ENEMY POSITIONS
34    .PAGE
35    .SBTTL PREP-LOSS OF BASE PROCESS STATE
36
37    ENDLIF
38
39    LDA I,0*SECOND
40        NORMALLY NO PAUSE
41    STA QTMPAUS
42    LDX PLAYUP
43    DEC X,LIVES1
44        DELETE ONE OF CURRENT PLAYER S LIVES
45    LDA LIVES1
46    ORA LIVES2
47    IFEQ
48        BOTH DEAD
49    JSR ENDGAM
50        YES. END GAME STATE 5 HI CHECK
51    ELSE
52    LDX PLAYUP
53
54    LDA X,LIVES1
55        NO. AT LEAST 1 PLAYER IS ALIVE
56    IFEQ
57        CURRENT PLAYER DEAD
58    LDA I,CDGOVR
59        YES. GAME OVER PLAYER X
60
61
62    STA QDSTATE
63    LDA I,2*SECOND
64        LONGER PAUSE
65    STA QTMPAUS
66    ENDIF
67    BEGIN
68        LOOP UNTIL GET TO NEXT LIVE PLAYER
69
70    LDA NUMPLA
71    IFNE
72        2 PLAYERS
73    LDA NEWPLA
74        YES. SWITCH TO OTHER PLAYER
75
76    EOR I,01
77    STA NEWPLA
78    ENDIF
79
80    LDX NEWPLA
81    LDA X,LIVES1
82        TEST # OF BASES FOR OTHER PLAYER
83    NEEND
84        EXIT IF PLAYER IS ALIVE
85
86    LDA I,CNEWLIF
87        THEN NEW LIFE SETUP
88    LDY X,WAVEN1
89    INY
90
91    IFEQ
92        NEW GAME FOR NEXT PLAYER
93    LDA I,CINIRAT
94        YES. INITIALIZE RATE REQUEST STATE
95    ENDIF
```

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1 STA QNXTSTA
2 LDA I,CPAUSE          PAUSE FOR END OF LIFE TO SOAK IN
3 STA QSTATE
4 ENDIF
5 RTS
6 .PAGE
7 .SBTTL PREP-END OF GAME PROCESS STATE
8
9 ENDGAM
10
11 LDA I,0
12 STA HIWAVE
13 LDX NUMPLA
14
15          LOOP FOR EACH PLAYER
16 BEGIN
17 LDA X,WAVEN1
18 CMP HIWAVE
19
20          DETERMINE HIGHEST WAVE REACHED
21 IFCS
22 STA HIWAVE
23 ENDIF
24 DEX
25 MIEND
26 LDY HIWAVE
27 IFNE
28 DEC HIWAVE
29 ENDIF
30 LDA I,CDLADR
31 BIT QSTATUS
32 IFMI          ATTRACT
33 LDA I,CHISCHK          NO. TEST FOR HI SCORE
34 ENDIF
35 STA QSTATE          REQUEST HI CHECK OR LADDER DISPLAY
36 RTS
37
38 DLADR LDA QSTATUS
39 AND I, C MATRACT MGTMOD
40          PUT INTO ATTRACT
41 STA QSTATUS          REQUEST DISPLAY OF LADDER
42 LDA I,0
43 STA NUMPLA          RETURN TO PLAYER
44 LDA I,CLOGO
45 STA QNXTSTA          REQUEST NEW GAME AFTER
46 LDA I,CPAUSE          A LONG DELAY
47 STA QSTATE
48 LDA I,0A0
49 STA QTMPAUS
50 LDA I,1          DOUBLE TIME
51 STA PSCALE
52 LDA I,CDHITB
53 STA QDSTATE
54 RTS
55 .PAGE
56 .PAGE
57 .SBTTL UTILITY-MASKS
58
59 D70MSK .BYTE 80,40,20,10,8,4,2,1
60 D07MSK .BYTE 1,2,4,8,10,20,40,80
        .PAGE
        .SBTTL COCKTAIL FLIP
```


1
2 INPUT COCTAL NOT 0 IF COCKTAIL GAME
3 OUTPUT FLIP BIT SET IF COCKTAIL PLAYER
4 OTHERWISE IT IS CLEARED.

5 COCFLI LDY I,MVINVY
6 LDA COCTAL

7 IFNE COCKTAIL GAME
8 LDA PLAYUP YES.
9 IFNE PLAYER 2

10 LDA I,MFLIP YES. FLIP SCREEN.

11 LDY I,MVINVX
12 ENDIF

UNFLIP IF PLAYER 1 OR NOT COCKTAIL

13 ENDIF

14 EOR TNKOUT

15 AND I,MFLIP

16 EOR TNKOUT

17 STA TNKOUT

SET/CLEAR BIT

18 STY TOUTO

19 RTS

20 .PAGE

21 .PAGE

22 .PAGE

23 .SBTTL SCORE-CLEAR

24
25 CLRSCO

CLEAR BOTH SCORES

26 LDA I,0

27 LDX I,5

28 BEGIN

LOOP FOR L,M H BYTES OF BOTH SCORES

29 STA X,LSCORL

30 DEX

31 MIEND

32 RTS

33
34
35 .SBTTL SCORE-ENEMY POINTS, GENERAL SCORE UPDATE

36
37 FUNCTION GIVE POINTS FOR ENEMY SHOT DOWN

38
39 INPUT X INDEX OF PTS TO ADD IF OUT OF TABLE THEN
40 ADD PTS IN TEMPO,1, 2

41
42 UPSCOR

43 SED

44 BIT QSTATUS

45 IFMI

ATTRACT

46 LDY PLAYUP

47 IFNE

NO.

48 LDY I,3

PLAYER 2

49 ENDIF

YES

50 CPX I,TUPSLE-TUPSCL

51 IFCS

BONUS IN TABLE

52 LDA TEMPO

NO. IN TEMPS

53 CLC

54 ADC Y,LSCORL

55 STA Y,LSCORL

56 LDA TEMP1

57 ADC Y,LSCORM

58 STA Y,LSCORM

59 LDA TEMP2

60 ELSE

1	LDA AX,TUPSC	ADD IN L,M AND H BYTES FROM	1
2	CLC	SCORE TABLE TO CORRECT	2
3	ADC AY,LSCORL	PLAYER S SCORE	3
4	STA AY,LSCORL		4
5	LDA AX,TUPSCM		5
6	ADC AY,LSCORM		6
7	STA AY,LSCORM		7
8	LDA I,0		8
9	ENDIF		9
10	PHP		10
11	ADC AY,LSCORH		11
12	STA AY,LSCORH		12
13	PLP		13
14		GIVE BONUS FOR BIG PTS.	14
15	IFNE	BIG BONUS	15
16	LDX BLIFIN	YES	16
17	IFNE	BONUS ALLOWED	17
18	CPX TEMP2	YES.	18
19	BEQ GIVBON		19
20	BCC GIVBON	BONUS INTERVAL	20
21	ENDIF		21
22	ENDIF		22
23	IFCS	PASS 10K BOUNDARY	23
24	LDX BLIFIN	YES. ET BONUS LIFE INTERVAL IN 10 K UNITS	24
25	IFNE	BONUS ALLOWED	25
26	CPX I,3	YES.	26
27	IFCS	OVER 20 K INTERVAL	27
28	BEGIN	DIVIDE BY INTERVAL	28
29	SEC		29
30	SBC BLIFIN		30
31	BEQ GIVBON	BRANCH IF NO REMAINDER	31
32	CCEND	EXIT IF REMAINDER	32
33	ELSE		33
34	CPX I,2	20 K INTERVAL	34
35	IFEQ		35
36	AND I,1	YES.	36
37	BEQ GIVBON		37
38	ELSE		38
39	GIVBON	10 K INTERVAL	39
40	LDX PLAYUP	YES. GIVE BONUS LIFE	40
41	LDA X,LIVES1		41
42	CMP I,6		42
43	IFCC	MAX AT 6	43
44	INC X,LIVES1		44
45	JSR SAUSON	MAKE BONUS SOUND	45
46	LDA I,20		46
47	STA BOFLASH	REQUEST BONUS LIFE FLASH	47
48	ENDIF		48
49	ENDIF		49
50	ENDIF		50
51	ENDIF		51
52	SEC		52
53	ENDIF		53
54	ENDIF		54
55	CLD		55
56	RTS		56
57	TUPSC	.BYTE 00,50,0,0,50,50,0,50	57
58	TUPSLE		58
59	TUPSCM	.BYTE 0,1,02,1,0,2,5,7	59
60	HLL65		60

DATE 17-12-1981 16 50 15

USER THEURER

JOB TEMPEST

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•END

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