Sprites Alive for ccz80

SpritesAlive.ccz80 the library provides the interface required to use the routines included in the utility Sprites Alive under the language ccz80.

To use it is necessary to take into account the following points:

- To load routines Sprites Alive and should be used to activate the new function sp_load (), without arguments.

- All commands RSX of Sprites Alive can be used under ccz80, with the same names of the orders RSX but with the prefix sp_, to avoid duplication with the functions of the libraries of each computer, for example |CLS, which is sp_cls() under ccz80.

- The arguments that the orders RSX are separated by commas, under ccz80 are in brackets and separated by commas. For example |SPUT,0,100,50 is used as sp_sput(0,100,50) under ccz80.

- Some orders Sprites Alive that support different number of parameters to perform various functions have been split into several library functions to Sprites Alive under ccz80. These orders are:

RSX command	Number of arguments	Function for ccz80
|MOVE	1	sp_move
	2	sp_moverange
|REPORT	1	sp_report
	3	sp_reportrange
|SPUT	1	sp_sputunique
	2	sp_sputrange
	3	sp_sput

- RSX orders that require a variable by reference (always as a last argument) should not receive in the corresponding ccz80 function, it's receive as the function return value to be assigned to that variable. For example, if you would use in BASIC |READSTIX,18,@a% in ccz80 would a = sp_readstix(18), where a is a type word varibale declared.

To use this interface is necessary:

- The program source ccz80 use the following sentence, taking the file SpritesAlive.ccz80 in the same folder as the source:

    include "SpritesAlive.ccz80"

- Before using the orders of Sprites Alive is necessary to load the routines and activate the function sp_load().

- At the time of executing the program on an real Amstrad or on an emulator, in the floppy should have the disk Sprites Alive, or just a floppy disk with the

file SPRITE.1 which is on the side A in Sprites Alive disk. This file is one that is charged to use the sp_load().

It is **very important** to keep in mind that the executable program does not overlap with routines that Sprites Alive are loaded in the address #7000. There are approximately 12KB for the program binary ccz80, but this amount is down when loaded graphics with function sp_draw or created with sp_dget or nodes are charged with the function sp_node, because with them the direction to the final binary code of ccz80 downward #7000 deal as much as the graphics and/or nodes. To find out until you can take the direction of the program ccz80 binary code should be used sp_mem function, which returns from which direction lies the memory occupied by the graphics or nodes.

Listed below are the examples that come to the rescue Sprites Alive, in the original Basic format and converted to ccz80. No doubt that the source code ccz80 translated from the original examples could have been written with more clarity and more optimized, but has attempted to preserve the most literal possible to compare the two codes. These examples can be compiled with the following command from the command line:

ccz80.exe <archivo fuente ccz80> /org=#170

Example 1:

```
// 10 ' TANK DEMO  (DEMO1)
// 20 '
// 30 ' GLENCO SOFTWARE  25 SEPTEMBER 1989
// 40 '
// 50 MEMORY &2F00:|ERASE:|DRAW,"DEMOA":MODE 0:LOCATE 5,1:PRINT"TANK  DEMO"
// 60 A%=0:|MISSTYPE,0,40:|MISSDELAY,0,14:|MISSDIST,25:|BULLET,0,3,12
// 70 |MISSILE,32,0,4,7,0,4:|MISSILE,33,0,12,5,4,4:|MISSILE,34,0,14,-4,4,0
// 80 |MISSILE,35,0,14,-14,4,-4:|MISSILE,36,0,4,-19,0,-4
// 90 |MISSILE,37,0,-5,-15,-4,-4:|MISSILE,38,0,-6,-4,-4,0:|MISSILE,39,0,-4,6,-4,4
//100 |SGET,0,32:|STIX,63:|XEDGE,0,4:|YEDGE,0,2:|SGET,2,41:|COLLIDE,2,1
//110 |SPUT,2,140,20:|REPON,2:|SEQUENCE,0,32,32,39,39,38,38,37,37,33,33,34,34,35,35,36,36
//120 |ANIMATE,0,0:|STIXSPEED,1,1,1,1:|SPUT,0,80,100:|SOUND,0,135,1,0,100,31,15,5
//130 ENV 1,15,-2,1:|COLOUR:|SOUND,1,135,2,0,10,15,0,120
//140 |SATTR,0,1,0:|SATTR,2,2,1:ENV 2,15,1,1,40,0,1,15,-1,7
//150 |MOVEALL:|MISSHIT,0,@A%:IF A%=255 THEN 150
//160 |EXPLODE,2,50,10,50,0
//170 X=RND(8)*140:Y=RND(4)*170+20:|SPUT,2,X,Y:|COLLTEST,2,@A%
//180 IF A%=0 THEN |SPUT,2:GOTO 170 ELSE GOTO 150

// TANK DEMO  (DEMO1)
//
// GLENCO SOFTWARE  25 SEPTEMBER 1989
include "cpc6128.ccz80";
include "SpritesAlive.ccz80";

word x, y;
array byte data_env_1 = { 1, 15, 254, 1 }, data_env_2 = { 3, 15, 1, 1, 40, 0, 1, 15, 255, 7
};

sp_load();
sp_draw("demoa"); mode(0); locate(5, 1); prints("tank  demo");
sp_misstype(0, 40); sp_missdelay(0, 14); sp_missdist(25); sp_bullet(0, 3, 12);
sp_missile(32, 0, 4, 7, 0, 4); sp_missile(33, 0, 12, 5, 4, 4); sp_missile(34, 0, 14, -4, 4,
0);
sp_missile(35, 0, 14, -14, 4, -4); sp_missile(36, 0, 4, -19, 0, -4);
sp_missile(37, 0, -5, -15, -4, -4); sp_missile(38, 0, -6, -4, -4, 0); sp_missile(39, 0, -4,
6, -4, 4);
sp_sget(0, 32); sp_stix(63); sp_xedge(0, 4); sp_yedge(0, 2); sp_sget(2, 41); sp_collide(2,
1);
```

```
sp_sput(2, 140, 20); sp_repon(2); sp_sequence(0, 32, 32, 39, 39, 38, 38, 37, 37, 33, 33,
34, 34, 35, 35, 36, 36);
sp_animate(0, 0); sp_stixspeed(1, 1, 1, 1); sp_sput(0, 80, 100); sp_sound(0, 135, 1, 0,
100, 31, 15, 5);
env(1, data_env_1); sp_colour(); sp_sound(1, 135, 2, 0, 10, 15, 0, 120);
sp_sattr(0, 1, 0); sp_sattr(2, 2, 1); env(2, data_env_2);
line150:
sp_moveall(); if (sp_misshittype(0) == 255) goto line150;
sp_explode(2, 50, 10, 50, 0);
line170:
x = rand() % 141; y = rand() % 170 + 20; sp_sput(2, x, y);
if (sp_colltest(2) == 0) { sp_sputunique(2); goto line170; }
else goto line150;
```

Example 2:

```
// 10 ' BALLS DEMO  (DEMO2)
// 20 '
// 30 ' GLENCO SOFTWARE  13-SEPT-1989
// 40 '
// 41 ' Demonstates edge attributes and automatic sound.
// 42 '
// 50 MEMORY &2F00:|ERASE:|DRAW,"DEMOA":|COLOUR:MODE 0:|SGET,16,24:a%=0
// 60 |SGET,14,25:|SGET,15,26:|SPUT,16,10,50:|SPUT,14,72,120:|SPUT,15,130,160
// 70 N=10:FOR I=2 TO 13:|SGET,I,N:|COLLIDE,I,3:x%=0:y%=0
// 80 WHILE (x%=0 OR y%=0): x%=RND(8)*7-4:y%=RND(8)*7-4:WEND
// 90 |SDIR,i,x%,y%:|REPON,I:|SPUT,I,RND(5)*145,RND(9)*180+10:|COLLTEST,I,@A%
//100 IF A%=0 THEN |SPUT,I:GOTO 90
//110 |REPOFF,I:N=N+1:IF N=14 THEN N=10:|XEDGE,I,4 ELSE IF N=11 THEN |YEDGE,I,4
//120 IF N=12 THEN |XEDGE,I,4:|YEDGE,I,4 ELSE IF N=13 THEN |COLLIDE,I,3:|REPON,I
//130 NEXT:|SOUND,0,1,0,0,30,0,9,5:|SATTR,4,4,0
//140 |SOUND,1,2,0,0,60,0,9,5:|SATTR,8,4,1:|SOUND,2,4,0,0,90,0,9,5:|SATTR,12,4,2
//150 |MOVEALL:GOTO 150

// BALLS DEMO  (DEMO2)
//
// GLENCO SOFTWARE  13-SEPT-1989
//
// Demonstates edge attributes and automatic sound.
include "cpc6128.ccz80";
include "SpritesAlive.ccz80";

word i, n, x, y;

sp_load();
sp_draw("demoa"); sp_colour(); mode(0); sp_sget(16, 24);
sp_sget(14, 25); sp_sget(15, 26); sp_sput(16, 10, 50); sp_sput(14, 72, 120); sp_sput(15,
130, 160);
for (n = 10, i = 2; i <= 13; ++i)
{
  sp_sget(i, n); sp_collide(i, 3); x = 0; y = 0; while (x == 0 || y == 0) { x = rand() % 8
- 4; y = rand() % 7 - 4; }
  line90:
  sp_sdir(i, x, y); sp_repon(i); sp_sput(i, rand() % 146, rand() % 181 + 10);
  if (sp_colltest(i) == 0) { sp_sputunique(i); goto line90; }
  sp_repoff(i); ++n; if (n == 14) { n = 10; sp_xedge(i, 4); } else if (n == 11) sp_yedge(i,
4);
  if (n == 12) { sp_xedge(i, 4); sp_yedge(i, 4); } else if (n == 13) { sp_collide(i, 3);
sp_repon(i); }
}
sp_sound(0, 1, 0, 0, 30, 0, 9, 5); sp_sattr(4, 4, 0);
sp_sound(1, 2, 0, 0, 60, 0, 9, 5); sp_sattr(8, 4, 1); sp_sound(2, 4, 0, 0, 90, 0, 9, 5);
sp_sattr(12, 4, 2);
line150:
sp_moveall(); goto line150;
```

Example 3:

```
// 10 ' BIRD DEMO  (DEMO3)
// 20 '
// 30 ' GLENCO SOFTWARE 19-SEPT-1989
// 40 '
// 50 ' Demonstrates individual windows for sprites and automatic animation.
// 60 '
// 70 |ERASE:MEMORY &2F00:|DRAW,"DEMOA":MODE 0:|INKBLACK:a%=0
// 80 A=0:B=4:C=5:D=9:|SEQUENCE,0,A,B,A,B,A,B,A,B,C,D,C,D,C,D,C,D
```

```
// 90 A=14:b=18:c=19:d=23:|SEQUENCE,1,A,B,A,B,A,B,A,B,C,D,C,D,C,D,C,D
//100 |SGET,0,0:|SWINDOW,0,30,159,0,199:|SPUT,0,40,25:|ANIMATE,I,0:|STIX,12
//110 FOR I=2 TO 4:|SGET,I,0:|SWINDOW,I,30,159,0,199:|SPUT,I,I*25+40,I*27
//120 |SDIR,I,RND(3)*3+1,0:|ANIMATE,I,0:NEXT
//130 FOR I=5 TO 6:|SGET,I,14:|SPUT,I,(I-5)*16,(I-5)*40+20
//140 |SDIR,I,0,(I-4)+1:|ANIMATE,I,1:NEXT
//150 |SGET,7,10:|SGET,8,11:|SGET,9,13:|SDIR,7,-1,3:|SDIR,8,-4,2:|SDIR,9,2,2
//160 FOR I=7 TO 9:|SWINDOW,I,30,140,120,199:|REPON,I
//170 |SPUT,I,RND(8)*80+40,RND(9)*40+130
//180 |COLLTEST,I,@A%:IF A%=0 THEN |SPUT,I:GOTO 170
//190 NEXT:|COLOUR
//200 |MOVEALL:GOTO 200


// BIRD DEMO  (DEMO3)
//
// GLENCO SOFTWARE 19-SEPT-1989
//
// Demostrates individual windows for sprites and automatic animation.
include "cpc6128.ccz80";
include "SpritesAlive.ccz80";

word a, b, c, d, i;

sp_load();
sp_draw("demoa"); mode(0); sp_inkblack();
a = 0; b = 4; c = 5; d = 9; sp_sequence(0, a, b, a, b, a, b, a, b, c, d, c, d, c, d, c, d);
a = 14; b = 18; c = 19; d = 23; sp_sequence(1, a, b, a, b, a, b, a, b, c, d, c, d, c, d, c,
d);
sp_sget(0, 0); sp_swindow(0, 30, 159, 0, 199); sp_sput(0, 40, 25); sp_animate(i, 0);
sp_stix(12);
for (i = 2; i <= 4; ++i)
{
  sp_sget(i, 0); sp_swindow(i, 30, 159, 0, 199); sp_sput(i, i * 25 + 40, i * 27);
  sp_sdir(i, rand() % 4 + 1, 0); sp_animate(i, 0);
}
for (i = 5; i <= 6; ++i)
{
  sp_sget(i, 14); sp_sput(i, (i - 5) * 16, (i - 5) * 40 + 20);
  sp_sdir(i, 0, (i - 4) + 1); sp_animate(i, 1);
}
sp_sget(7, 10); sp_sget(8, 11); sp_sget(9, 13); sp_sdir(7, - 1, 3); sp_sdir(8, - 4, 2);
sp_sdir(9, 2, 2);
for (i = 7; i <= 9; ++i)
{
  sp_swindow(i, 30, 140, 120, 199); sp_repon(i);
  line170:
  sp_sput(i, rand() % 81 + 40, rand() % 41 + 130);
  if (sp_colltest(i) == 0) { sp_sputunique(i); goto line170; }
}
sp_colour();
line200:
sp_moveall(); goto line200;
```

Example 4:

```
// 10 ' KNOCKOUT DEMONSTRATION  (DEMO4)
// 20 '
// 30 ' GLENCO SOFTWARE
// 40 '
// 50 |ERASE:MEMORY &4400:|DRAW,"DEMOB"
// 60 RESTORE 200:READ hilevel:level=0:|INKBLACK:MODE 0:LOCATE 6,1:PRINT"KNOCKOUT
// 70 FOR I=32 TO 192 STEP 32:|SCENERY,35,12,I:|SCENERY,35,137,i:NEXT
// 80 FOR i=27 TO 120 STEP 22:|SCENERY,34,i,192:NEXT:x=-1:y=0:a=3:a%=0
// 90 hit=0:i=55:FOR y=1 TO 6:READ a$:FOR x=1 TO 9:a%=VAL(MID$(a$,x,1)):IF a%<>0 THEN
|SGET,i+1,a%+36:|COLLIDE,i+1,2:|REPON,i+1:|SPUT,i+1,x*12+17,180-y*14:i=i-1
//100 NEXT x,y:score=55-i
//110 |SGET,0,32:|SGET,2,33:|SPUT,0,60,8:a%=RND*90+30:|SPUT,2,a%,20:|STIX,12
//120 |STIXSPEED,1,1,2,2:|SDIR,2,1,3:|COLLIDE,2,3:|REPON,2:|COLOUR:|WAIT,30
//130 |SOUND,0,135,0,0,50,0,15,5:|SATTR,2,4,0
//140 |MOVE,0,2:|SYPOS,2,@a%:IF a%<13 THEN 170
//150 |MOVEHIT,2,@a%:IF a%<>0 THEN 140
//160 |HIT,2,@a%:IF a%=255 THEN 140 ELSE |SPUT,a%:hit=hit+1:IF score=hit THEN
|SPUT,2:|SPUT,0:|RESET:level=level+1:IF level=hilevel THEN GOTO 170 ELSE 90
//165 GOTO 140
//170 LOCATE 1,1:PRINT"GAME ENDED AGAIN Y/N"
//180 A$="":WHILE A$="":A$=INKEY$:WEND:IF UPPER$(A$)="Y" THEN |RESET:GOTO 60
```

```
//190 IF UPPER$(A$)="N" THEN |RESET:|CLS:|WP:END ELSE 180
//200 DATA 9,"123454321","123454321","123454321","123454321","123454321","123454321"
//210 DATA "111111111","222222222","333333333","444444444","555555555","666666666"
//220 DATA "000134000","001133400","011133440","001133400","000134000","600000006"
//230 DATA "124000421","240000042","400222004","002222200","336636633","663363366"
//240 DATA "111000111","100000001","100111001","100111001","100000001","111000111"
//250 DATA "000000000","003636300","006300000","003606300","006303600","003636300"
//260 DATA "000000000","001212100","002101200","001212100","002101200","001202100"
//270 DATA "000000000","004545400","005404500","004545400","005454000","004505400"
//280 DATA "000000000","002505200","005202500","002525200","000002500","002525200"

// KNOCKOUT DEMONSTRATION  (DEMO4)
//
// GLENCO SOFTWARE
//
include "cpc6128.ccz80";
include "SpritesAlive.ccz80";

const hilevel = 9;
word level, score, i, a, x, y, hit, data_pointer;
string acode[9];
array word data = {
"123454321","123454321","123454321","123454321","123454321","123454321",

"111111111","222222222","333333333","444444444","555555555","666666666",

"000134000","001133400","011133440","001133400","000134000","600000006",

"124000421","240000042","400222004","002222200","336636633","663363366",

"111000111","100000001","100111001","100111001","100000001","111000111",

"000000000","003636300","006300000","003606300","006303600","003636300",

"000000000","001212100","002101200","001212100","002101200","001202100",

"000000000","004545400","005404500","004545400","005454000","004505400",
                    "000000000","002505200","005202500","002525200","000002500","002525200"
};

sp_load();
sp_draw("demob");
line60:
data_pointer = data; level = 0; sp_inkblack(); mode(0); locate(6, 1); prints("knockout ");
for (i = 32; i <= 192; i += 32) { sp_scenery(35, 12, i); sp_scenery(35, 137, i); }
for (i = 27; i <= 120; i += 22) sp_scenery(34, i, 192);
x = -1; y = 0;
line90:
hit = 0; i = 55;
for (y = 1; y <= 6; ++y)
{
  strcpy(acode, **data_pointer); data_pointer += 2;
  for (x = 1; x <= 9; ++x)
  {
    a = *(acode + x - 1) - '0';
    if (a != 0) { sp_sget(i + 1, a + 36); sp_collide(i + 1, 2); sp_repon(i + 1); sp_sput(i
+ 1, x * 12 + 17, 180 - y * 14); --i; }
  }
}
score = 55 - i;
sp_sget(0, 32); sp_sget(2, 33); sp_sput(0, 60, 8); a = rand() % 91 + 30; sp_sput(2, a, 20);
sp_stix(12);
sp_stixspeed(1, 1, 2, 2); sp_sdir(2, 1, 3); sp_collide(2, 3); sp_repon(2); sp_colour();
sp_wait(30);
sp_sound(0, 135, 0, 0, 50, 0, 15, 5); sp_sattr(2, 4, 0);
line140:
sp_moverange(0, 2); if (sp_sypos(2) < 13) goto line170;
if (sp_movehit(2) != 0) goto line140;
a = sp_hit(2); if (a == 255) goto line140;
else { sp_sputunique(a); if (score == ++hit) { sp_sputunique(2); sp_sputunique(0);
sp_reset(); if (++level == hilevel) goto line170; else goto line90; } }
goto line140;
line170:
locate(1, 1); prints("game ended again y/n");
line180:
a = inkey();
if (toupper(a) == 'Y') { sp_reset(); goto line60; }
```

```
if (toupper(a) == 'N') { sp_reset(); sp_cls(); sp_wp(); return; }
goto line180;
```

Example 5:

```
// 10 ' NODES DEMONSTRATION (DEMO5)
// 20 '
// 30 ' GLENCO SOFTWARE    21 September 1989
// 40 '
// 50 MEMORY &4400:|ERASE:|DRAW,"DEMOB":|NODE,"DEMO5":MODE 0:T=1:|INKBLACK
// 60 |SEQUENCE,1,1,3,1,3,10,12,10,12,7,9,7,9,4,6,4,6:INK 7,26
// 70 FOR I=2 TO 5:|SGET,I,1:|ANIMATE,I,1:|NODESPEED,I,1,1:|NODEATTR,I,T:|NODEON,I
// 80 NEXT:|SPUT,2,3,180:|SPUT,3,146,180:|SPUT,4,99,154:|COLOUR
// 90 |SPUT,5,94,98:|MAZEON
//100 |MOVEALL:GOTO 100


// NODES DEMONSTRATION (DEMO5)
//
// GLENCO SOFTWARE    21 September 1989
include "cpc6128.ccz80";
include "SpritesAlive.ccz80";

word t, i;

sp_load();
sp_draw("demob"); sp_node("demo5"); mode(0); t = 1; sp_inkblack();
sp_sequence(1, 1, 3, 1, 3, 10, 12, 10, 12, 7, 9, 7, 9, 4, 6, 4, 6); ink(7, 26, 26);
for (i = 2; i <= 5; ++i) { sp_sget(i, 1); sp_animate(i, 1); sp_nodespeed(i, 1, 1);
sp_nodeattr(i, t); sp_nodeon(i); }
sp_sput(2, 3, 180); sp_sput(3, 146, 180); sp_sput(4, 99, 154); sp_colour();
sp_sput(5, 94, 98); sp_mazeon();
line100: sp_moveall(); goto line100;
```

Example 6:

```
// 10 ' NODES DEMONSTRATION  (DEMO6)
// 20 '
// 30 ' GLENCO SOFTWARE    21 September 1989
// 40 '
// 50 MEMORY &4400:|ERASE:|DRAW,"DEMOB":|NODE,"DEMO5":MODE 0:|INKBLACK
// 60 M$(1)="RANDOM":M$(2)="CHASE ":M$(3)="FLEE  "
// 70 |SEQUENCE,0,17,20,17,20,13,16,13,16,13,16,13,16,13,16,18,20
// 80 |SEQUENCE,1,1,3,1,3,10,12,10,12,7,9,7,9,4,6,4,6
// 90 FOR I=2 TO 5:|SGET,I,1:|ANIMATE,I,1:|NODESPEED,I,1,1:|NODEATTR,I,1:|NODEON,I
//100 NEXT:LOAD "DEMO6.SCR",&C000:|SPUT,2,3,180:|SPUT,3,146,180:|SPUT,4,99,154
//110 |SPUT,5,94,98:|SGET,0,13:|ANIMATE,0,0:|STIX,79:|SPUT,0,3,16:|MAZEON
//120 |COLOUR:T=1:P=0
//130 P=P+1:|MOVEALL:IF P<400 THEN 130
//140 SOUND 7,100,15:T=T+1:IF T>3 THEN T=1
//150 FOR I=2 TO 5:|NODEATTR,I,T:NEXT:LOCATE 15,1:PRINT M$(T);:P=0:GOTO 130


// NODES DEMONSTRATION  (DEMO6)
//
// GLENCO SOFTWARE    21 September 1989
//
include "cpc6128.ccz80";
include "SpritesAlive.ccz80";

word i, p, t;
array byte m[21]; // Space for 3 strings of 6 characters

sp_load();
sp_draw("demob"); sp_node("demo5"); mode(0); sp_inkblack();
strcpy(m, "random"); strcpy(m + 7, "chase "); strcpy(m + 14, "flee  ");
sp_sequence(0, 17, 20, 17, 20, 13, 16, 13, 16, 13, 16, 13, 16, 13, 16, 18, 20);
sp_sequence(1, 1, 3, 1, 3, 10, 12, 10, 12, 7, 9, 7, 9, 4, 6, 4, 6);
for (i = 2; i <= 5; ++i) { sp_sget(i, 1); sp_animate(i, 1); sp_nodespeed(i, 1, 1);
sp_nodeattr(i, 1); sp_nodeon(i); }
openin("demo6.scr"); load(#C000); closein();
sp_sput(2, 3, 180); sp_sput(3, 146, 180); sp_sput(4, 99, 154);
sp_sput(5, 94, 98); sp_sget(0, 13); sp_animate(0, 0); sp_stix(79); sp_sput(0, 3, 16);
sp_mazeon();
sp_colour(); t = 1; p = 0;
line130: sp_moveall(); if (++p < 400) goto line130;
sound(7, 100, 15, 12, 0, 0, 0); if (++t > 3) t = 1;
for (i = 2; i <= 5; ++i) sp_nodeattr(i, t);
```

```
locate(15, 1); prints(m + (t - 1) * 7); p = 0; goto line130;
```