

```

1  #include "all03.h"
2
3  int dbl = 0;
4
5  void clrscrn( int y1, int x1, int y2, int x2 )
6  {
7      window( x1+1, y1+1, x2+1, y2+1 );
8      clrscr();
9      window( 1,1, 80,25 );
10 }
11
12 /*-----*/
13 void frame( int y1, int x1, int y2, int x2 )    /* window frame drawing */
14 {
15     int i, ch;
16
17     locate( y1,x1 ); putchar( dbl ? 0xC9 : 0xDA );    /* uplf */
18     locate( y1,x2 ); putchar( dbl ? 0xBB : 0xBF );    /* uprt */
19     locate( y2,x1 ); putchar( dbl ? 0xC8 : 0xC0 );    /* lolf */
20     locate( y2,x2 ); putchar( dbl ? 0xBC : 0xD9 );    /* lort */
21
22     locate( y1,x1+1 ); ch = dbl ? 0xCD : 0xC4;    /* horbar */
23     for( i = x1+1; i < x2; ++i ) putchar( ch );
24
25     locate( y2,x1+1 ); ch = dbl ? 0xCD : 0xC4;    /* horbar */
26     for( i = x1+1; i < x2; ++i ) putchar( ch );
27
28     ch = dbl ? 0xBA : 0xB3;    /* vrtbar */
29     for( i = y1+1; i < y2; ++i )
30     {
31         locate( i,x1 ); putchar( ch );
32         locate( i,x2 ); putchar( ch );
33     }
34 }
35
36 /*-----*/
37 void _window( int y1, int x1, int y2, int x2 )    /* window drawing */
38 {
39     clrscrn( y1, x1, y2, x2 );
40     frame( y1, x1, y2, x2 );
41 }
42
43 /*-----*/
44 /* get 1 line from console */
45 int getline( char *s,    /* return length, NULL len=1 */
46             int lim )    /* max key include newline */
47 {
48     int ch, i = 0;
49
50     while( ( ch = getch() ) != CR && ch != ESC )
51     {
52         if( !ch )    /* extended key neglect next code */
53             getch();
54         else if( ch == BS && i )
55         {
56             --i;
57             putchar(ch);
58             putchar(' ');
59             putchar(ch);
60         }
61         else if( !iscntrl(ch) )
62         {
63             if( i < lim-1 )    /* non control key */
64                 putchar( s[i++] = ch );
65             else
66                 putchar( BEL );
67         }
68     }
69
70     if( ch == ESC )
71     {
72         s[0] = ch;

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73         i = 1;
74     }
75
76     s[i] = 0;
77     return( i );
78 }
79
80 /*-----*/
81 void errbeep( void )          /* error 3 beep */
82 {
83     int i;
84
85     for( i = 0; i < 3; ++i )
86     {
87         putchar( BEL ); waitms( 63 );
88     }
89 }
90
91 /*-----*/
92 void bindsp2( int data )
93 {
94     unsigned char i = 1;
95
96     while( i )
97     {
98         cprintf( ( data & i ) ? "1 " : "0 " );
99         i <<= 1;
100     }
101 }
102
103

```