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; Title:
; Code Example on Accessing ASCII font table by using MCS51 assembler
;
; www.topwaydispaly.com
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;
; The following listing is a subroutine only
; It is going to act as a programming idea only.
; Please evaluate before using it.
; We are not responsible for any lost or damage on using this
subroutine.
;

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;-----
;| Send display data |
;-----

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SdData: setb    A0
        setb    _WR                ; -WR(R/-W)
        setb    _RD                ; -RD(E)
        clr     _CS1
        clr     _WR                ; -WR(R/-W)
        setb    _WR                ; -WR(R/-W)
        setb    _CS1
        ret

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;-----
;| Send A ASCII Font 8x6|
;-----

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;the ASCII value store in A
SdChar: push    PSW
        push    ACC
        push    B
        push    DPH
        push    DPL

        mov     DPTR,    #Font8x6
        mov     B,       #6        ; one Char have 6 byte
        mul     AB        ; find out the offset address
        clr     C         ;
        add     A,       DPL       ; add the offset to DPTR
        jnc    NoCarr; DPTR
        inc     B
NoCarr: mov     DPL,     A
        mov     A,       B
        add     A,       DPH
        mov     DPH,     A        ; New (offseted) address is now in the
DPTR

        mov     A,       #0        ; send out the 6 column char
SdChar1: push    ACC
        movc   A,        @A+DPTR
        mov     LCDData,A
        lcall  SdData
        pop     ACC
        inc     A
        cjne  A,        #6, SdChar1

        pop     DPL

```

```

pop    DPH
pop    B
pop    ACC
pop    PSW
ret

```

```

; ASCII Font table for LCD display
; 5x7 font
; the font table is included with cursor off,
; and space between font.
; the totally size of the font is 6x8
; The table is only fit for the LCD module
; which is having the following address mapping:
; D7=cursor, D6=bottom of char, D0=top of char

```

Font8x6:

```

DB     000h, 000h, 000h, 000h, 000h, 000h      ;ASC(00)
DB     03Eh, 05Bh, 04Fh, 05Bh, 03Eh, 000h      ;ASC(01)
DB     03Eh, 06Bh, 04Fh, 06Bh, 03Eh, 000h      ;ASC(02)
DB     01Ch, 03Eh, 07Ch, 03Eh, 01Ch, 000h
DB     018h, 03Ch, 07Eh, 03Ch, 018h, 000h
DB     01Ch, 057h, 07Dh, 057h, 01Ch, 000h
DB     01Ch, 05Eh, 07Fh, 05Eh, 01Ch, 000h
DB     000h, 018h, 03Ch, 018h, 000h, 000h
DB     0FFh, 0E7h, 0C3h, 0E7h, 0FFh, 000h
DB     000h, 018h, 024h, 018h, 000h, 000h
DB     0FFh, 0E7h, 0DBh, 0E7h, 0FFh, 000h
DB     030h, 048h, 03Ah, 006h, 00Eh, 000h
DB     026h, 029h, 079h, 029h, 026h, 000h
DB     040h, 07Fh, 005h, 005h, 007h, 000h
DB     040h, 07Fh, 005h, 025h, 03Fh, 000h
DB     05Ah, 03Ch, 0E7h, 03Ch, 05Ah, 000h
DB     07Fh, 03Eh, 01Ch, 01Ch, 008h, 000h
DB     008h, 01Ch, 01Ch, 03Eh, 07Fh, 000h
DB     014h, 022h, 07Fh, 022h, 014h, 000h
DB     05Fh, 05Fh, 000h, 05Fh, 05Fh, 000h
DB     006h, 009h, 07Fh, 001h, 07Fh, 000h
DB     000h, 066h, 089h, 095h, 06Ah, 000h
DB     060h, 060h, 060h, 060h, 060h, 060h
DB     094h, 0A2h, 0FFh, 0A2h, 094h, 000h
DB     008h, 004h, 07Eh, 004h, 008h, 000h
DB     010h, 020h, 07Eh, 020h, 010h, 000h
DB     008h, 008h, 02Ah, 01Ch, 008h, 000h
DB     008h, 01Ch, 02Ah, 008h, 008h, 000h
DB     01Eh, 010h, 010h, 010h, 010h, 000h
DB     00Ch, 01Eh, 00Ch, 01Eh, 00Ch, 000h
DB     030h, 038h, 03Eh, 038h, 030h, 000h
DB     006h, 00Eh, 03Eh, 00Eh, 006h, 000h
DB     000h, 000h, 000h, 000h, 000h, 000h
DB     000h, 000h, 05Fh, 000h, 000h, 000h
DB     000h, 007h, 000h, 007h, 000h, 000h
DB     014h, 07Fh, 014h, 07Fh, 014h, 000h
DB     024h, 02Ah, 07Fh, 02Ah, 012h, 000h
DB     023h, 013h, 008h, 064h, 062h, 000h
DB     036h, 049h, 056h, 020h, 050h, 000h
DB     000h, 008h, 007h, 003h, 000h, 000h
DB     000h, 01Ch, 022h, 041h, 000h, 000h
DB     000h, 041h, 022h, 01Ch, 000h, 000h
DB     02Ah, 01Ch, 07Fh, 01Ch, 02Ah, 000h

```

DB 008h, 008h, 03Eh, 008h, 008h, 000h
DB 000h, 080h, 070h, 030h, 000h, 000h
DB 008h, 008h, 008h, 008h, 008h, 000h
DB 000h, 000h, 060h, 060h, 000h, 000h
DB 020h, 010h, 008h, 004h, 002h, 000h
DB 03Eh, 051h, 049h, 045h, 03Eh, 000h
DB 000h, 042h, 07Fh, 040h, 000h, 000h
DB 072h, 049h, 049h, 049h, 046h, 000h
DB 021h, 041h, 049h, 04Dh, 033h, 000h
DB 018h, 014h, 012h, 07Fh, 010h, 000h
DB 027h, 045h, 045h, 045h, 039h, 000h
DB 03Ch, 04Ah, 049h, 049h, 031h, 000h
DB 041h, 021h, 011h, 009h, 007h, 000h
DB 036h, 049h, 049h, 049h, 036h, 000h
DB 046h, 049h, 049h, 029h, 01Eh, 000h
DB 000h, 000h, 014h, 000h, 000h, 000h
DB 000h, 040h, 034h, 000h, 000h, 000h
DB 000h, 008h, 014h, 022h, 041h, 000h
DB 014h, 014h, 014h, 014h, 014h, 000h
DB 000h, 041h, 022h, 014h, 008h, 000h
DB 002h, 001h, 059h, 009h, 006h, 000h
DB 03Eh, 041h, 05Dh, 059h, 04Eh, 000h
DB 07Ch, 012h, 011h, 012h, 07Ch, 000h
DB 07Fh, 049h, 049h, 049h, 036h, 000h
DB 03Eh, 041h, 041h, 041h, 022h, 000h
DB 07Fh, 041h, 041h, 041h, 03Eh, 000h
DB 07Fh, 049h, 049h, 049h, 041h, 000h
DB 07Fh, 009h, 009h, 009h, 001h, 000h
DB 03Eh, 041h, 041h, 051h, 073h, 000h
DB 07Fh, 008h, 008h, 008h, 07Fh, 000h
DB 000h, 041h, 07Fh, 041h, 000h, 000h
DB 020h, 040h, 041h, 03Fh, 001h, 000h
DB 07Fh, 008h, 014h, 022h, 041h, 000h
DB 07Fh, 040h, 040h, 040h, 040h, 000h
DB 07Fh, 002h, 01Ch, 002h, 07Fh, 000h
DB 07Fh, 004h, 008h, 010h, 07Fh, 000h
DB 03Eh, 041h, 041h, 041h, 03Eh, 000h
DB 07Fh, 009h, 009h, 009h, 006h, 000h
DB 03Eh, 041h, 051h, 021h, 05Eh, 000h
DB 07Fh, 009h, 019h, 029h, 046h, 000h
DB 026h, 049h, 049h, 049h, 032h, 000h
DB 003h, 001h, 07Fh, 001h, 003h, 000h
DB 03Fh, 040h, 040h, 040h, 03Fh, 000h
DB 01Fh, 020h, 040h, 020h, 01Fh, 000h
DB 03Fh, 040h, 038h, 040h, 03Fh, 000h
DB 063h, 014h, 008h, 014h, 063h, 000h
DB 003h, 004h, 078h, 004h, 003h, 000h
DB 061h, 059h, 049h, 04Dh, 043h, 000h
DB 000h, 07Fh, 041h, 041h, 041h, 000h
DB 002h, 004h, 008h, 010h, 020h, 000h
DB 000h, 041h, 041h, 041h, 07Fh, 000h
DB 004h, 002h, 001h, 002h, 004h, 000h
DB 040h, 040h, 040h, 040h, 040h, 000h
DB 000h, 003h, 007h, 008h, 000h, 000h
DB 020h, 054h, 054h, 078h, 040h, 000h
DB 07Fh, 028h, 044h, 044h, 038h, 000h
DB 038h, 044h, 044h, 044h, 028h, 000h
DB 038h, 044h, 044h, 028h, 07Fh, 000h
DB 038h, 054h, 054h, 054h, 018h, 000h
DB 000h, 008h, 07Eh, 009h, 002h, 000h
DB 018h, 0A4h, 0A4h, 09Ch, 078h, 000h

DB 07Fh, 008h, 004h, 004h, 078h, 000h
DB 000h, 044h, 07Dh, 040h, 000h, 000h
DB 020h, 040h, 040h, 03Dh, 000h, 000h
DB 07Fh, 010h, 028h, 044h, 000h, 000h
DB 000h, 041h, 07Fh, 040h, 000h, 000h
DB 07Ch, 004h, 078h, 004h, 078h, 000h
DB 07Ch, 008h, 004h, 004h, 078h, 000h
DB 038h, 044h, 044h, 044h, 038h, 000h
DB 0FCh, 018h, 024h, 024h, 018h, 000h
DB 018h, 024h, 024h, 018h, 0FCh, 000h
DB 07Ch, 008h, 004h, 004h, 008h, 000h
DB 048h, 054h, 054h, 054h, 024h, 000h
DB 004h, 004h, 03Fh, 044h, 024h, 000h
DB 03Ch, 040h, 040h, 020h, 07Ch, 000h
DB 01Ch, 020h, 040h, 020h, 01Ch, 000h
DB 03Ch, 040h, 030h, 040h, 03Ch, 000h
DB 044h, 028h, 010h, 028h, 044h, 000h
DB 04Ch, 090h, 090h, 090h, 07Ch, 000h
DB 044h, 064h, 054h, 04Ch, 044h, 000h
DB 000h, 008h, 036h, 041h, 000h, 000h
DB 000h, 000h, 077h, 000h, 000h, 000h
DB 000h, 041h, 036h, 008h, 000h, 000h
DB 002h, 001h, 002h, 004h, 002h, 000h
DB 03Ch, 026h, 023h, 026h, 03Ch, 000h
DB 01Eh, 0A1h, 0A1h, 061h, 012h, 000h
DB 03Ah, 040h, 040h, 020h, 07Ah, 000h
DB 038h, 054h, 054h, 055h, 059h, 000h
DB 021h, 055h, 055h, 079h, 041h, 000h
DB 021h, 054h, 054h, 078h, 041h, 000h
DB 021h, 055h, 054h, 078h, 040h, 000h
DB 020h, 054h, 055h, 079h, 040h, 000h
DB 00Ch, 01Eh, 052h, 072h, 012h, 000h
DB 039h, 055h, 055h, 055h, 059h, 000h
DB 039h, 054h, 054h, 054h, 059h, 000h
DB 039h, 055h, 054h, 054h, 058h, 000h
DB 000h, 000h, 045h, 07Ch, 041h, 000h
DB 000h, 002h, 045h, 07Dh, 042h, 000h
DB 000h, 001h, 045h, 07Ch, 040h, 000h
DB 0F0h, 029h, 024h, 029h, 0F0h, 000h
DB 0F0h, 028h, 025h, 028h, 0F0h, 000h
DB 07Ch, 054h, 055h, 045h, 000h, 000h
DB 020h, 054h, 054h, 07Ch, 054h, 044h
DB 07Ch, 00Ah, 009h, 07Fh, 049h, 041h
DB 032h, 049h, 049h, 049h, 032h, 000h
DB 032h, 048h, 048h, 048h, 032h, 000h
DB 032h, 04Ah, 048h, 048h, 030h, 000h
DB 03Ah, 041h, 041h, 021h, 07Ah, 000h
DB 03Ah, 042h, 040h, 020h, 078h, 000h
DB 000h, 09Dh, 0A0h, 0A0h, 07Dh, 000h
DB 039h, 044h, 044h, 044h, 039h, 000h
DB 03Dh, 040h, 040h, 040h, 03Dh, 000h
DB 03Ch, 024h, 0FFh, 024h, 024h, 000h
DB 048h, 07Eh, 049h, 043h, 066h, 000h
DB 02Bh, 02Fh, 0FCh, 02Fh, 02Bh, 000h
DB 0FFh, 009h, 029h, 0F6h, 020h, 000h
DB 0C0h, 088h, 07Eh, 009h, 003h, 000h
DB 020h, 054h, 054h, 079h, 041h, 000h
DB 000h, 000h, 044h, 07Dh, 041h, 000h
DB 030h, 048h, 048h, 04Ah, 032h, 000h
DB 038h, 040h, 040h, 022h, 07Ah, 000h
DB 000h, 07Ah, 00Ah, 00Ah, 072h, 000h

DB 07Dh, 00Dh, 019h, 031h, 07Dh, 000h
DB 026h, 029h, 029h, 02Fh, 028h, 000h
DB 026h, 029h, 029h, 029h, 026h, 000h
DB 030h, 048h, 04Dh, 040h, 020h, 000h
DB 038h, 008h, 008h, 008h, 008h, 000h
DB 008h, 008h, 008h, 008h, 038h, 000h
DB 02Fh, 010h, 0C8h, 0ACh, 0BAh, 000h
DB 02Fh, 010h, 028h, 034h, 0FAh, 000h
DB 000h, 000h, 07Bh, 000h, 000h, 000h
DB 008h, 014h, 02Ah, 014h, 022h, 000h
DB 022h, 014h, 02Ah, 014h, 008h, 000h
DB 0AAh, 000h, 055h, 000h, 0AAh, 000h
DB 0AAh, 055h, 0AAh, 055h, 0AAh, 055h
DB 055h, 0AAh, 055h, 0AAh, 055h, 0AAh
DB 000h, 000h, 000h, 0FFh, 000h, 000h
DB 010h, 010h, 010h, 0FFh, 000h, 000h
DB 014h, 014h, 014h, 0FFh, 000h, 000h
DB 010h, 010h, 0FFh, 000h, 0FFh, 000h
DB 010h, 010h, 0F0h, 010h, 0F0h, 000h
DB 014h, 014h, 014h, 0FCh, 000h, 000h
DB 014h, 014h, 0F7h, 000h, 0FFh, 000h
DB 000h, 000h, 0FFh, 000h, 0FFh, 000h
DB 014h, 014h, 0F4h, 004h, 0FCh, 000h
DB 014h, 014h, 017h, 010h, 01Fh, 000h
DB 010h, 010h, 01Fh, 010h, 01Fh, 000h
DB 014h, 014h, 014h, 01Fh, 000h, 000h
DB 010h, 010h, 010h, 0F0h, 000h, 000h
DB 000h, 000h, 000h, 01Fh, 010h, 010h
DB 010h, 010h, 010h, 01Fh, 010h, 010h
DB 010h, 010h, 010h, 0F0h, 010h, 010h
DB 000h, 000h, 000h, 0FFh, 010h, 010h
DB 010h, 010h, 010h, 010h, 010h, 010h
DB 010h, 010h, 010h, 0FFh, 010h, 010h
DB 000h, 000h, 000h, 0FFh, 014h, 014h
DB 000h, 000h, 0FFh, 000h, 0FFh, 010h
DB 000h, 000h, 01Fh, 010h, 017h, 014h
DB 000h, 000h, 0FCh, 004h, 0F4h, 014h
DB 014h, 014h, 017h, 010h, 017h, 014h
DB 014h, 014h, 0F4h, 004h, 0F4h, 014h
DB 000h, 000h, 0FFh, 000h, 0F7h, 014h
DB 014h, 014h, 014h, 014h, 014h, 014h
DB 014h, 014h, 0F7h, 000h, 0F7h, 014h
DB 014h, 014h, 014h, 017h, 014h, 014h
DB 010h, 010h, 01Fh, 010h, 01Fh, 010h
DB 014h, 014h, 014h, 0F4h, 014h, 014h
DB 010h, 010h, 0F0h, 010h, 0F0h, 010h
DB 000h, 000h, 01Fh, 010h, 01Fh, 010h
DB 000h, 000h, 000h, 01Fh, 014h, 014h
DB 000h, 000h, 000h, 0FCh, 014h, 014h
DB 000h, 000h, 0F0h, 010h, 0F0h, 010h
DB 010h, 010h, 0FFh, 010h, 0FFh, 010h
DB 014h, 014h, 014h, 0FFh, 014h, 014h
DB 010h, 010h, 010h, 01Fh, 000h, 000h
DB 000h, 000h, 000h, 0F0h, 010h, 010h
DB 0FFh, 0FFh, 0FFh, 0FFh, 0FFh, 0FFh
DB 0F0h, 0F0h, 0F0h, 0F0h, 0F0h, 0F0h
DB 0FFh, 0FFh, 0FFh, 000h, 000h, 000h
DB 000h, 000h, 000h, 0FFh, 0FFh, 0FFh
DB 00Fh, 00Fh, 00Fh, 00Fh, 00Fh, 00Fh
DB 038h, 044h, 044h, 038h, 044h, 000h
DB 07Ch, 02Ah, 02Ah, 03Eh, 014h, 000h

DB 07Eh, 002h, 002h, 006h, 006h, 000h
 DB 002h, 07Eh, 002h, 07Eh, 002h, 000h
 DB 063h, 055h, 049h, 041h, 063h, 000h
 DB 038h, 044h, 044h, 03Ch, 004h, 000h
 DB 040h, 07Eh, 020h, 01Eh, 020h, 000h
 DB 006h, 002h, 07Eh, 002h, 002h, 000h
 DB 099h, 0A5h, 0E7h, 0A5h, 099h, 000h
 DB 01Ch, 02Ah, 049h, 02Ah, 01Ch, 000h
 DB 04Ch, 072h, 001h, 072h, 04Ch, 000h
 DB 030h, 04Ah, 04Dh, 04Dh, 030h, 000h
 DB 030h, 048h, 078h, 048h, 030h, 000h
 DB 0BCh, 062h, 05Ah, 046h, 03Dh, 000h
 DB 03Eh, 049h, 049h, 049h, 000h, 000h
 DB 07Eh, 001h, 001h, 001h, 07Eh, 000h
 DB 02Ah, 02Ah, 02Ah, 02Ah, 02Ah, 000h
 DB 044h, 044h, 05Fh, 044h, 044h, 000h
 DB 040h, 051h, 04Ah, 044h, 040h, 000h
 DB 040h, 044h, 04Ah, 051h, 040h, 000h
 DB 000h, 000h, 0FFh, 001h, 003h, 000h
 DB 0E0h, 080h, 0FFh, 000h, 000h, 000h
 DB 008h, 008h, 06Bh, 06Bh, 008h, 008h
 DB 036h, 012h, 036h, 024h, 036h, 000h
 DB 006h, 00Fh, 009h, 00Fh, 006h, 000h
 DB 000h, 000h, 018h, 018h, 000h, 000h
 DB 000h, 000h, 010h, 010h, 000h, 000h
 DB 030h, 040h, 0FFh, 001h, 001h, 000h
 DB 000h, 01Fh, 001h, 001h, 01Eh, 000h
 DB 000h, 019h, 01Dh, 017h, 012h, 000h
 DB 000h, 03Ch, 03Ch, 03Ch, 03Ch, 000h
 DB 000h, 000h, 000h, 000h, 000h, 000h