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; This file is part of the C51 Compiler package
; Copyright (c) 1988-1997 Keil Elektronik GmbH and Keil Software, Inc.
;-----
; INIT.A51: This code is executed, if the application program contains
;           initialized variables at file level.
;
; To translate this file use A51 with the following invocation:
;
;     A51 INIT.A51
;
; To link the modified INIT.OBJ file to your application use the following
; BL51 invocation:
;
;     BL51 <your object file list>, INIT.OBJ <controls>
;-----
;
; User-defined Watch-Dog Refresh.
;
; If the C application contains many initialized variables uses a watchdog
; it might be possible that the user has to include a watchdog refresh into
; the initialization process. The watchdog refresh routine can be included
; in the following MACRO and can alter all CPU registers except
; DPTR.
;
WATCHDOG      MACRO
;
;           ; Include any Watchdog refresh code here
;
ENDM
;-----

NAME ?C_INIT

?C_C51STARTUP      SEGMENT      CODE
?C_INITSEG        SEGMENT      CODE           ; Segment with Initializing Data

EXTRN CODE (MAIN)
PUBLIC           ?C_START

INITEND:          RSEG ?C_C51STARTUP
                  LJMP MAIN

IorPData:
;
;           ; If CY=1 PData Values
                  CLR A
                  MOVC A,@A+DPTR
                  INC DPTR
                  MOV R0,A           ; Start Address
IorPLoop:         CLR A
                  MOVC A,@A+DPTR
                  INC DPTR
                  JC Pdata
                  MOV @R0,A
                  SJMP Common
PData:            MOVX @R0,A
Common:           INC R0

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        DJNZ R7,IorPLoop
        SJMP Loop

Bits:   CLR A
        MOVC A,@A+DPTR
        INC DPTR
        MOV R0,A
        ANL A,#007H
        ADD A,#Table-LoadTab
        XCH A,R0
        CLR C
        RLC A ; Bit Condition to Carry
        SWAP A
        ANL A,#00FH
        ORL A,#20H ; Bit Address
        XCH A,R0 ; convert to Byte Addressen
        MOVC A,@A+PC

LoadTab: JC Setzen
        CPL A
        ANL A,@R0
        SJMP BitReady

Setzen: ORL A,@R0
BitReady: MOV @R0,A
        DJNZ R7,Bits
        SJMP Loop

Table:   DB 00000001B
        DB 00000010B
        DB 00000100B
        DB 00001000B
        DB 00010000B
        DB 00100000B
        DB 01000000B
        DB 10000000B

?C_START: MOV DPTR,#?C_INITSEG

LOOP:   WATCHDOG
        CLR A
        MOV R6,#1
        MOVC A,@A+DPTR
        JZ INITEND
        INC DPTR
        MOV R7,A
        ANL A,#3FH
        JNB ACC.5,NOBIG
        ANL A,#01FH
        MOV R6,A
        CLR A
        MOVC A,@A+DPTR
        INC DPTR
        JZ NOBIG
        INC R6

NOBIG:  XCH A,R7
        ANL A,#0C0H ; Typ is in Bit 6 and Bit 7

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        ADD    A,ACC
        JZ     IorPDATA
        JC     Bits

XdataMem:  CLR    A
           MOVC  A,@A+DPTR
           INC   DPTR
           MOV   R2,A           ; High
           CLR   A
           MOVC  A,@A+DPTR
           INC   DPTR
           MOV   R0,A           ; LOW
XLoop:    CLR    A
           MOVC  A,@A+DPTR
           INC   DPTR
           XCH  A,R0
           XCH  A,DPL
           XCH  A,R0
           XCH  A,R2
           XCH  A,DPH
           XCH  A,R2
           MOVX  @DPTR,A
           INC   DPTR
           XCH  A,R0
           XCH  A,DPL
           XCH  A,R0
           XCH  A,R2
           XCH  A,DPH
           XCH  A,R2
           DJNZ  R7,XLoop
           DJNZ  R6,XLoop
           SJMP  Loop

RSEG    ?C_INITSEG
DB      0

END

```