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1 $NOMOD51
2 $INCLUDE (8051.MCU)
3
4 ; Reset Vector
5 ORG 0000H
6 JMP START
7
8 ORG 0100H
9 START:
10 MOV TMOD, #10H ; Timer1 che do 1
11 MOV TL1, #78H ; Nap gia tri delay 5ms cho Timer1
12 MOV TH1, #0ECH
13 SETB TR1 ; Bat Timer1
14 ; Khoi tao gia tri ban dau cua dong ho
15 MOV R0, #55 ; R0 luu gia tri Giay
16 MOV R1, #59 ; R1 luu gia tri Phut
17 MOV R2, #23 ; R2 luu gia tri Gio
18 MOV R3, #33 ; Xac dinh so lan lap de tao ra 1s de xac dinh thoi diem tang gia tri Giay
19 ; Mot vong lap DISPLAY delay 6*5ms => 33 * 6*5ms ~ 1s
20
21 LOOP: ; Thuc hien hien thi Thoi Gian
22 DJNZ R3, NOT_INC_SECOND ; Kiem tra xem da lap du Delay khoang 1s chua, neu chua KHONG tang Giay
23 CALL CLOCK ; Neu da Delay du 1s, Goi ham CLOCK de tinh toan Thoi Gian
24 NOT_INC_SECOND:
25 CALL DISPLAY ; Hien thi Thoi Gian
26
27 JMP LOOP
28
29 DISPLAY:
30 SETB P3.0 ; Bat LED hien thi don vi Giay o pin P3.0
31 MOV A, R0
32 MOV B, #10
33 DIV AB ; Chia lay du de tach hang don vi cua Giay
34 MOV P2, B ; Gan P2 = B, tuc la hien thi hang don vi cua Giay
35 SETB P2.4 ; Xoa dau cham o LED don vi cua Giay
36 CALL DELAY_5MS ; Delay 5ms
37 CLR P3.0 ; Tat LED o pin P3.0
38
39 SETB P3.1 ; Bat LED hien thi hang chuc cua Giay o pin P3.1
40 MOV A, R0
41 MOV B, #10
42 DIV AB ; Chia lay nguyen de tach hang don vi cua Giay
43 MOV P2, A ; Gan P2 = A, tuc la hien thi hang chuc cua Giay
44 SETB P2.4 ; Xoa dau cham o LED don vi cua Giay
45 CALL DELAY_5MS ; Delay 5ms
46 CLR P3.1 ; Tat LED o pin P3.1
47
48 SETB P3.2 ; Xu ly don vi Phut, tuong tu nhu xu ly don vi Giay phia tren
49 MOV A, R1 ; Xu ly hang don vi Phut
50 MOV B, #10
51 DIV AB
52 MOV P2, B
53 CLR P2.4
54 CALL DELAY_5MS
55 CLR P3.2
56
57 SETB P3.3 ; Xu ly hang chuc Phut
58 MOV A, R1
59 MOV B, #10
60 DIV AB
61 MOV P2, A
62 SETB P2.4
63 CALL DELAY_5MS
64 CLR P3.3
65
66 SETB P3.4 ; Xu ly don vi Gio, tuong tu nhu xu ly don vi Giay phia tren

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67     MOV A, R2                ; Xu ly hang don vi Gio
68     MOV B, #10
69     DIV AB
70     MOV P2, B
71     CLR P2.4
72     CALL DELAY_5MS
73     CLR P3.4
74
75     SETB P3.5                ; Xu ly hang chuc Gio
76     MOV A, R2
77     MOV B, #10
78     DIV AB
79     MOV P2, A
80     SETB P2.4
81     CALL DELAY_5MS
82     CLR P3.5
83 RET
84
85 DELAY_5MS:                  ; Ham delay 5ms xu dung vong Lap
86     MOV R4, #10             ; Thoi gian Delay = 10 * 250 * 2us = 5ms
87     DELAY:
88     MOV R5, #250
89     DJNZ R5, $
90     DJNZ R4, DELAY
91 RET
92
93 CLOCK:
94     MOV R3, #33              ; Nap lai gia tri lap trong khoang 1s
95     INC R0                   ; Tang Giay
96     MOV A, R0                ; Gan A = Giay
97     MOV B, #60               ; Gan B = 60
98     CJNE A, B, NOT_EQUAL     ; Kiem tra Giay = 60?, neu khong bang thi thoat ham xu ly ngat
99     MOV R0, #0               ; Neu Giay = 60 => reset Giay = 0 va tang Phut
100    INC R1                    ; Tang Phut
101
102    MOV A, R1                  ; Gan A = Phut
103    MOV B, #60                 ; Gan B = 60
104    CJNE A, B, NOT_EQUAL     ; Kiem tra Phut = 60?, neu khong bang thi thoat ham xu ly ngat
105    MOV R1, #0                 ; Neu Phut = 60 => reset Phut = 0 va tang Gio
106    INC R2                     ; Tang Gio
107
108    MOV A, R2                  ; Gan A = Gio
109    MOV B, #24                 ; Gan B = 24
110    CJNE A, B, NOT_EQUAL     ; Kiem tra Gio = 24?, neu khong bang thi thoat ham xu ly ngat
111    MOV R2, #0                 ; Neu Gio = 24 => reset Gio = 0
112
113    NOT_EQUAL:                ; Thoat ham xu ly ngat
114
115 RET
116
117 END
118

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