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()

(Alarm Clock

) TB51

:

HH : MM : SS

TB51

12 : 00 : 02

11: 59 : 00

LCD

:

8051

IC (MACROS51)

TB51

:

;----- tb51 ver. 3 -----

\$MODID51

\$IC (MACROS51)

SELECT NONE

COMMAND #0FH

COMMAND #38H

COMMAND #0FH

COMMAND #1

COMMAND #0CH

SNDON

SETTIME #11 , #59 , #50

SETALM #12 , #00 , #02

SETALMOFF #12 , #00 , #12

L2: COMMAND #80H

DISPTIME HH , MM , SS

COMMAND #0C0H

DISPTIME ALMHH , ALMMM , ALMSS

```

        ALMCHK

        MOV        R0 , #0
L1:      DELAY            65535
        INC        R0
        CJNE       R0 , #14 , L1

        INCTIMER

        MJMP       L2

HH1:     SJMP HH1
END

```

8051

```

;----- tb51 ver. 3 -----
$MODID51
$IC(MACROS51)
        SELECT        NONE

        COMMAND       #0FH
        COMMAND       #38H
        COMMAND       #0FH

        COMMAND       #1
        COMMAND       #0CH

        SNDON

        MOV           R3, #11
        MOV           R2, #59
        MOV           R1, #50
        MCALL         SetTime331

        MOV           R3, #12
        MOV           R2, #00
        MOV           R1, #02
        MCALL         SetAlarm331

```

```

        MOV     R3, #12
        MOV     R2, #00
        MOV     R1, #12
        MCALL   SetAlarmOff331

L2:  COMMAND   #80H
        MOV     R3, HH
        MOV     R2, MM
        MOV     R1, SS
        MCALL   DisplayTime331

        COMMAND #0C0H

        MOV     R3, ALMHH
        MOV     R2, ALMMM
        MOV     R1, ALMSS
        MCALL   DisplayTime331

        MCALL   AlarmCheck331

        MOV     R1, #14
        MCALL   Delay331

        MCALL   IncTimer331

        MJMP    L2

```

```
HH1: SJMP HH1
```

```
;-----
```

```
IncTimer331:
```

```

        INC     SS
        MOV     A, SS
        CJNE    A, #60, END_INC
        MOV     SS, #0
        INC     MM
        MOV     A, MM
        CJNE    A, #60, END_INC
        MOV     MM, #0
        INC     HH
        MOV     A, HH
        CJNE    A, #60, END_INC
        MOV     HH, #0
END_INC:
        RET

```

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;-----
SetAlarmOff331:

    MOV    ALMHHOFF, R3
    MOV    ALMMMOFF, R2
    MOV    ALMSSOFF, R1
    RET

;-----
SetAlarm331:

    MOV    ALMHH, R3
    MOV    ALMMM, R2
    MOV    ALMSS, R1
    RET

;-----
SetTime331:

    MOV    HH, R3
    MOV    MM, R2
    MOV    SS, R1
    RET

;-----
DisplayTime331:

;    DISPDEC        R3
    MOV        A, R3
    MCALL      DisplayDecimal331

    DISPCH      #' ':'
;    DISPDEC        R2
    MOV        A, R2
    MCALL      DisplayDecimal331
    DISPCH      #' ':'
;    DISPDEC        R1
    MOV        A, R1
    MCALL      DisplayDecimal331
    RET

;-----
DisplayDecimal331:

    MOV        B, #10
    DIV        AB
    ADD        A, #30H
    DISPCH      A
    MOV        A, B
    ADD        A, #30H

```

```

        DISPC      A
        RET
;-----
Delay331:

DELAY_L1:
        MOV        TMOD, #1
        MOV        TL0, #0FFH
        MOV        TH0, #3CH
        SETB       TR0
AGAIN:   JNB        TF0, AGAIN
        CLR        TR0
        CLR        TF0
        DJNZ       R1, DELAY_L1
        RET
;-----
AlarmCheck331:

        MOV        A, HH
        CJNE       A, ALMHH, CHK_OFF

        MOV        A, MM
        CJNE       A, ALMMM, CHK_OFF

        MOV        A, SS
        CJNE       A, ALMSS, CHK_OFF

        SJMP       SND_ON

CHK_OFF:

        MOV        A, HH
        CJNE       A, ALMHHOFF, RET_1

        MOV        A, MM
        CJNE       A, ALMMMOFF, RET_1

        MOV        A, SS
        CJNE       A, ALMSSOFF, RET_1

        SJMP       SND_OFF

SND_ON:
        SNDON
        SJMP       RET_1

SND_OFF:

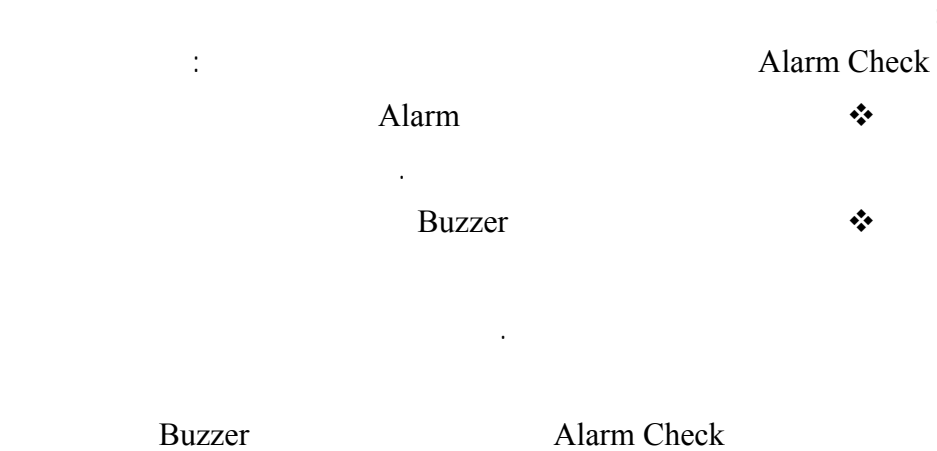
```

```

        SNDOFF
RET_1:
    RET
;-----

END

```



```

AlarmCheck331:

```

```

        MOV     A, HH
        CJNE    A, ALMHH, N1
N1:     JC      SND_OFF
        CJNE    A, ALMHH, CHK_OFF

```

```

        MOV     A, MM
        CJNE    A, ALMMM, N2
N2:     JC      SND_OFF
        CJNE    A, ALMMM, CHK_OFF

```

```

        MOV     A, SS
        CJNE    A, ALMSS, N3
N3:     JC      SND_OFF
        CJNE    A, ALMSS, CHK_OFF

```

```

        SJMP    SND_ON

```

```

CHK_OFF:

```

```

        MOV     A, HH
        CJNE    A, ALMHHOFF, N4

```

```

N4:   JC          SND_ON
      CJNE        A, ALMHHOFF, SND_OFF

      MOV         A, MM
      CJNE        A, ALMMMOFF, N5
N5:   JC          SND_ON
      CJNE        A, ALMMMOFF, SND_OFF

      MOV         A, SS
      CJNE        A, ALMSSOFF, N6
N6:   JC          SND_ON
      CJNE        A, ALMSSOFF, SND_OFF

      SJMP        SND_OFF

SND_ON:
      SNDON
      SJMP        RET_1

SND_OFF:
      SNDOFF
RET_1:
      RET

```
