

LAMPIRAN A

Program pada *microcontroller*

A-1

Listing Program pada *Microcontroller*

```
$mod51
org 000h
POINTER_RAM equ R1
TEMPORARY EQU R7
PARALEL EQU P2
STATUS EQU P0.0
NEXT EQU P0.1
SOLE1 EQU P0.2
SOLE2 EQU P0.3
SOLE3 EQU P0.4
SOLE4 EQU P0.5
SOLE5 EQU P0.6
SOLE6 EQU P0.7

        setb SOLE1
        setb SOLE2
        setb SOLE3
        setb SOLE4
        setb SOLE5
        setb SOLE6
init:   clr SOLE1
        clr SOLE2
        clr SOLE3
        clr SOLE4
        clr SOLE5
        clr SOLE6
        mov P2,#0FFH
        SETB STATUS
        SETB NEXT
        mov TMOD, #020h
        mov TH1,#0FDh
        mov SCON,#050h
        setb TR1
        CLR RI

program:
MOV TEMPORARY,#16
MOV POINTER_RAM,#30H
BACA:   JNB RI,$
```

```

MOV @POINTER_RAM, SBUF
INC POINTER_RAM
CLR RI
DJNZ TEMPORARY, BACA
MOV TEMPORARY,#12
MOV POINTER_RAM,#031H
KIRIM_PARA:
MOV A, @POINTER_RAM
MOV P2,A
CLR STATUS
JB NEXT,$
JNB NEXT,$
INC POINTER_RAM
DJNZ TEMPORARY, KIRIM_PARA
SETB STATUS

```

KOMP:

```

        JB NEXT,$
        MOV A,P1
        ANL A,#00000111B
        NOL: CJNE A,#000H,SATU
            jmp SELESAI
SATU: CJNE A,#001h,DUA
        SETB SOLE1
        jmp SELESAI
DUA: CJNE A,#0002h,TIGA
        SETB SOLE2
        jmp SELESAI
TIGA: CJNE A,#0003h,EMPAT
        SETB SOLE3
        jmp SELESAI
EMPAT: CJNE A,#0004h,LIMA
        SETB SOLE4
        jmp SELESAI
LIMA: CJNE A,#0005h,ENAM
        SETB SOLE5
        jmp SELESAI
ENAM: CJNE A,#0006h,SELESAI
        SETB SOLE6
SELESAI:
        call delay_1s

```

```
CLR SOLE1
CLR SOLE2
CLR SOLE3
CLR SOLE4
CLR SOLE5
CLR SOLE6
JNB NEXT,$
JMP init
```

```
DELAY_103us:PUSH ACC
MOV A,#20H
DELAY1:DEC A
JNZ DELAY1
POP ACC
RET
```

```
DELAY_4ms:MOV R0,#28H
DELAY2:CALL DELAY_103us
DJNZ R0,DELAY2
RET
```

```
DELAY_15ms:MOV R0,#8FH
DELAY3:CALL DELAY_103us
DJNZ R0,DELAY3
RET
```

```
DELAY_1s:MOV R5,#0EEH
DELAY5:CALL DELAY_4ms
DJNZ R5,DELAY5
RET
```