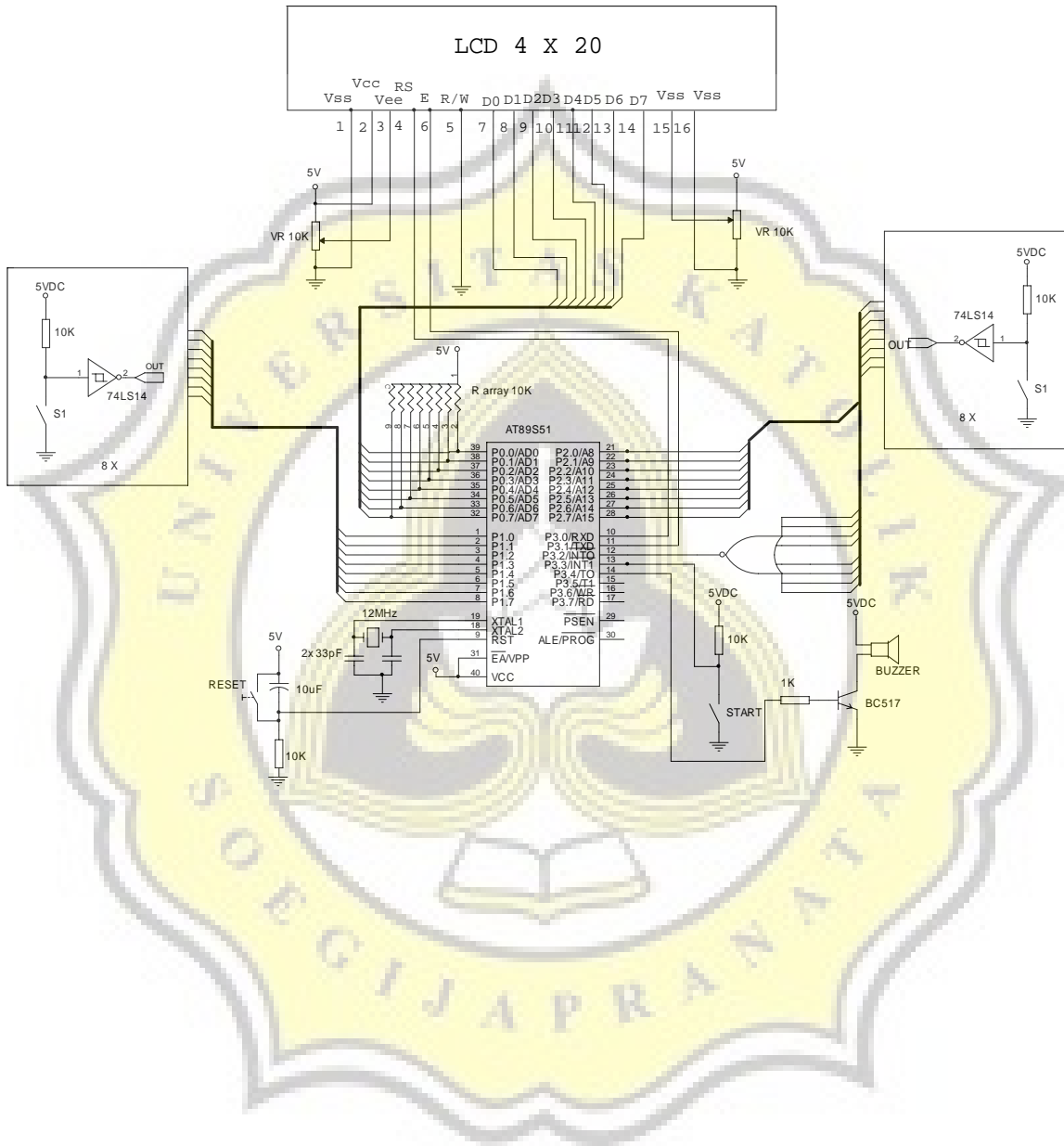


# RANGKAIAN LENGKAP TIMER KOLAM RENANG



## LISTING PROGRAM LENGKAP

```

;P0      ----   LCD DATA
;P1      ----   INPUT LIMIT 1
;P2      ----   INPUT LIMIT 2

          ORG     0H
          AJMP    START

          ORG     03H
          ACALL   INTOACTIVED
          RETI

          ORG     0BH
          ACALL   TIMER0ACTIVED
          RETI

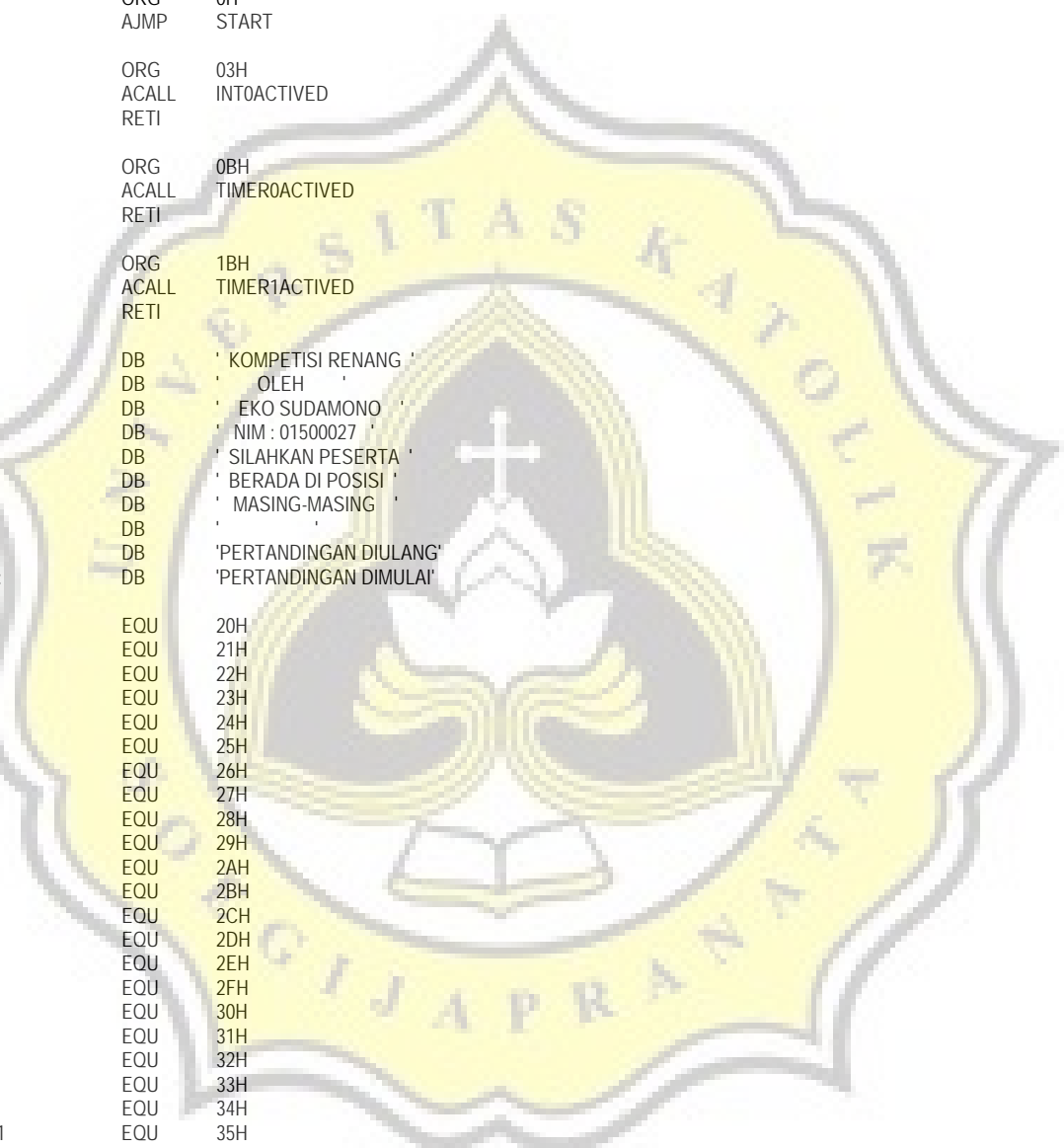
          ORG     1BH
          ACALL   TIMER1ACTIVED
          RETI

DATA1:   DB      ' KOMPETISI RENANG '
DATA2:   DB      '      OLEH      '
DATA3:   DB      '      EKO SUDAMONO '
DATA4:   DB      '      NIM : 01500027 '
DATA5:   DB      ' SILAHKAN PESERTA '
DATA6:   DB      ' BERADA DI POSISI '
DATA7:   DB      ' MASING-MASING '
DATA8:   DB
DATA9:   DB      'PERTANDINGAN DIULANG'
DATA10:  DB      'PERTANDINGAN DIMULAI'

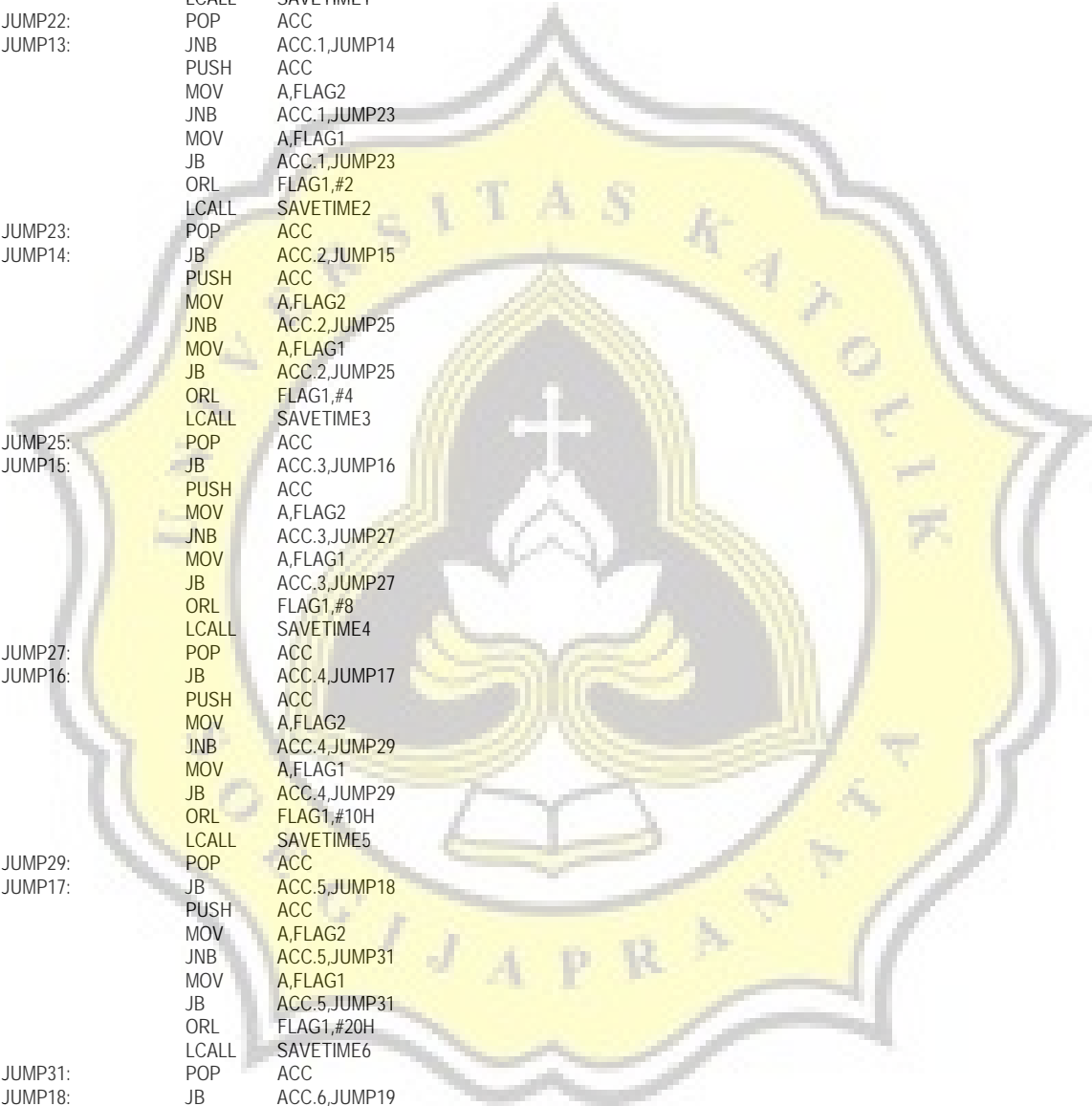
FLAG1    EQU     20H
FLAG2    EQU     21H
MENIT    EQU     22H
DETIK    EQU     23H
PER100   EQU     24H
MENIT1   EQU     25H
MENIT2   EQU     26H
MENIT3   EQU     27H
MENIT4   EQU     28H
MENIT5   EQU     29H
MENIT6   EQU     2AH
MENIT7   EQU     2BH
MENIT8   EQU     2CH
DETIK1   EQU     2DH
DETIK2   EQU     2EH
DETIK3   EQU     2FH
DETIK4   EQU     30H
DETIK5   EQU     31H
DETIK6   EQU     32H
DETIK7   EQU     33H
DETIK8   EQU     34H
PER1001  EQU     35H
PER1002  EQU     36H
PER1003  EQU     37H
PER1004  EQU     38H
PER1005  EQU     39H
PER1006  EQU     3AH
PER1007  EQU     3BH
PER1008  EQU     3CH
DELAY    EQU     3DH

RSLCD    BIT     P3.0
ELCD     BIT     P3.1
BUZZER   BIT     P3.3

```



STARTBUTTON	BIT	P3.4
INT0ACTIVED:	PUSH	ACC
	MOV	A,P2
	JNB	ACC.0,JUMP13
	PUSH	ACC
	MOV	A,FLAG2
	JNB	ACC.0,JUMP22
	MOV	A,FLAG1
	JB	ACC.0,JUMP22
	ORL	FLAG1,#1
	LCALL	SAVETIME1
JUMP22:	POP	ACC
JUMP13:	JNB	ACC.1,JUMP14
	PUSH	ACC
	MOV	A,FLAG2
	JNB	ACC.1,JUMP23
	MOV	A,FLAG1
	JB	ACC.1,JUMP23
	ORL	FLAG1,#2
	LCALL	SAVETIME2
JUMP23:	POP	ACC
JUMP14:	JB	ACC.2,JUMP15
	PUSH	ACC
	MOV	A,FLAG2
	JNB	ACC.2,JUMP25
	MOV	A,FLAG1
	JB	ACC.2,JUMP25
	ORL	FLAG1,#4
	LCALL	SAVETIME3
JUMP25:	POP	ACC
JUMP15:	JB	ACC.3,JUMP16
	PUSH	ACC
	MOV	A,FLAG2
	JNB	ACC.3,JUMP27
	MOV	A,FLAG1
	JB	ACC.3,JUMP27
	ORL	FLAG1,#8
	LCALL	SAVETIME4
JUMP27:	POP	ACC
JUMP16:	JB	ACC.4,JUMP17
	PUSH	ACC
	MOV	A,FLAG2
	JNB	ACC.4,JUMP29
	MOV	A,FLAG1
	JB	ACC.4,JUMP29
	ORL	FLAG1,#10H
	LCALL	SAVETIME5
JUMP29:	POP	ACC
JUMP17:	JB	ACC.5,JUMP18
	PUSH	ACC
	MOV	A,FLAG2
	JNB	ACC.5,JUMP31
	MOV	A,FLAG1
	JB	ACC.5,JUMP31
	ORL	FLAG1,#20H
	LCALL	SAVETIME6
JUMP31:	POP	ACC
JUMP18:	JB	ACC.6,JUMP19
	PUSH	ACC
	MOV	A,FLAG2
	JNB	ACC.6,JUMP33
	MOV	A,FLAG1
	JB	ACC.6,JUMP33
	ORL	FLAG1,#40H
	LCALL	SAVETIME7
JUMP33:	POP	ACC
JUMP19:	JB	ACC.7,ENDINT0
	PUSH	ACC
	MOV	A,FLAG2



```

JNB ACC.7,JUMP35
MOV A,FLAG1
JB ACC.7,JUMP35
ORL FLAG1,#80H
LCALL SAVETIME8
JUMP35: POP ACC
ENDINT0: POP RET

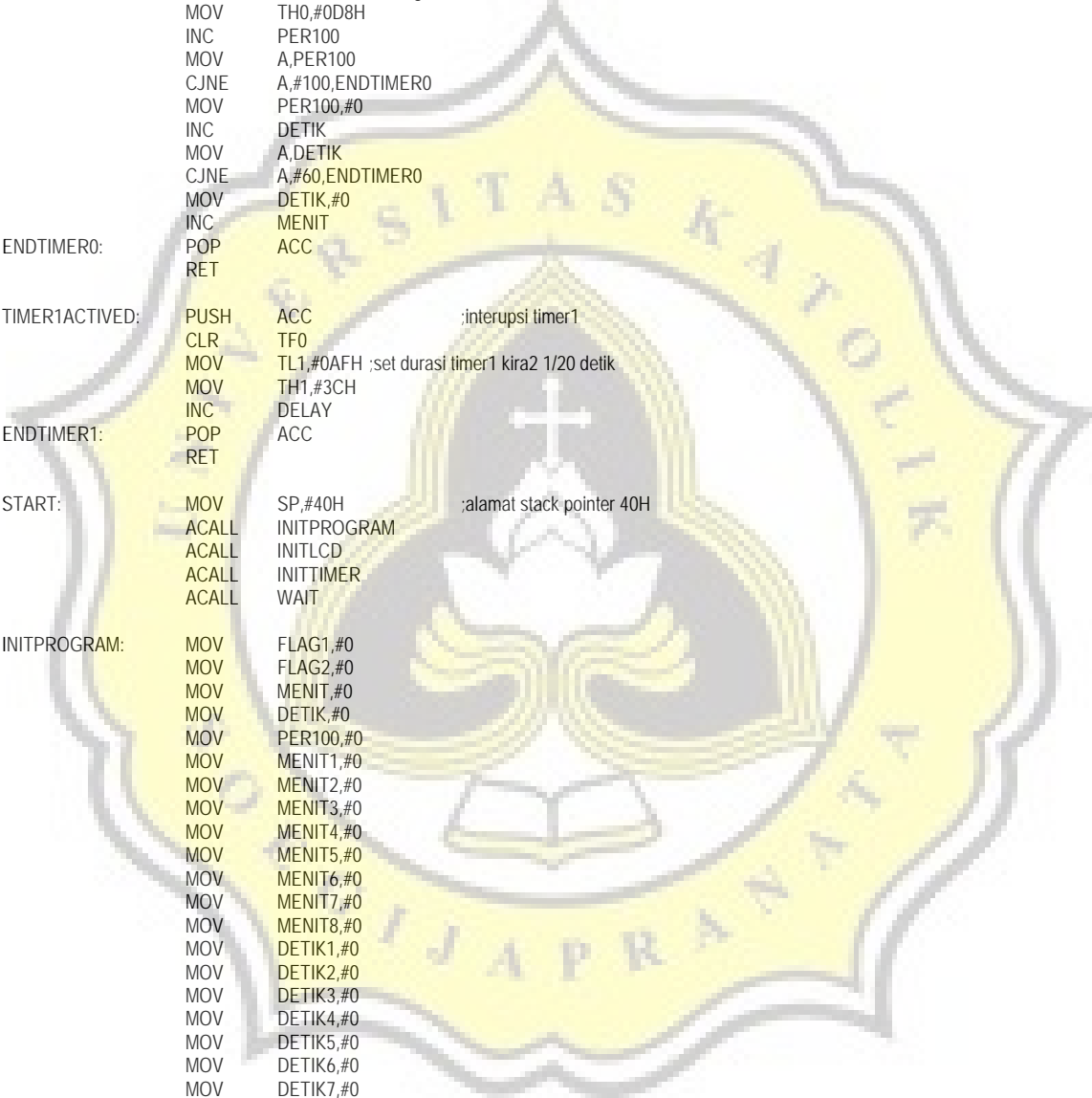
TIMER0ACTIVED: PUSH ACC ;interupsi timer0
CLR TF0
MOV TL0,#0F7H ;setting durasi timer0 kira2 1/100 detik
MOV TH0,#0D8H
INC PER100
MOV A,PER100
CJNE A,#100,ENDTIMER0
MOV PER100,#0
INC DETIK
MOV A,DETIK
CJNE A,#60,ENDTIMER0
MOV DETIK,#0
INC MENIT
ENDTIMER0: POP ACC
RET

TIMER1ACTIVED: PUSH ACC ;interupsi timer1
CLR TF0
MOV TL1,#0AFH ;set durasi timer1 kira2 1/20 detik
MOV TH1,#3CH
INC DELAY
ENDTIMER1: POP ACC
RET

START: MOV SP,#40H ;alamat stack pointer 40H
ACALL INITPROGRAM
ACALL INITLCD
ACALL INITTIMER
ACALL WAIT

INITPROGRAM: MOV FLAG1,#0
MOV FLAG2,#0
MOV MENIT,#0
MOV DETIK,#0
MOV PER100,#0
MOV MENIT1,#0
MOV MENIT2,#0
MOV MENIT3,#0
MOV MENIT4,#0
MOV MENIT5,#0
MOV MENIT6,#0
MOV MENIT7,#0
MOV MENIT8,#0
MOV DETIK1,#0
MOV DETIK2,#0
MOV DETIK3,#0
MOV DETIK4,#0
MOV DETIK5,#0
MOV DETIK6,#0
MOV DETIK7,#0
MOV DETIK8,#0
MOV PER1001,#0
MOV PER1002,#0
MOV PER1003,#0
MOV PER1004,#0
MOV PER1005,#0
MOV PER1006,#0
MOV PER1007,#0
MOV PER1008,#0
CLR BUZZER
RET

```



```

INITLCD: MOV     P0,#0
          ACALL  DELAY1
          ACALL  DELAY1
          ACALL  DELAY1
          ACALL  DELAY1
          MOV    PO,#30H
          ACALL  ENDCOMMANDLCD
          ACALL  DELAY1
          ACALL  DELAY1
          MOV    PO,#30H
          ACALL  ENDCOMMANDLCD
          ACALL  DELAY2
          MOV    PO,#30H
          ACALL  ENDCOMMANDLCD
          MOV    PO,#38H
          ACALL  ENDCOMMANDLCD
          MOV    PO,#08H
          ACALL  ENDCOMMANDLCD
          MOV    PO,#01H
          ACALL  ENDCOMMANDLCD
          MOV    PO,#06H
          ACALL  ENDCOMMANDLCD
          MOV    PO,#38H
          ACALL  ENDCOMMANDLCD
          MOV    PO,#0EH
          ACALL  ENDCOMMANDLCD
          MOV    PO,#06H
          ACALL  ENDCOMMANDLCD
          MOV    PO,#0CH
          ACALL  ENDCOMMANDLCD
          RET

```

```

DELAY1: MOV     R5,#01FH
ULANG1: MOV     R6,#0FH
ULANG2: MOV     R7,#07FH
          DJNZ  R7,$
          DJNZ  R6,ULANG2
          DJNZ  R5,ULANG1
          RET

```

```

ENDCOMMANDLCD: CLR  ELCD      ;perintah ke LCD untuk setting
                CLR  RSLCD
                SETB ELCD
                RET

```

```

DELAY2: MOV     R4,#10H
ULANG3: MOV     R5,#07FH
          DJNZ  R5,$
          DJNZ  R4,ULANG3
          RET

```

```

WRITEROW1: MOV    PO,#80H      ;menulis karakter di baris 1
            ACALL ENDCOMMANDLCD
            MOV    R6,#20
            MOV    R7,#0
            ACALL WRITECHAR
            RET

```

```

WRITEROW2: MOV    PO,#0C0H    ;menulis karakter di baris 2
            ACALL ENDCOMMANDLCD
            MOV    R6,#20
            MOV    R7,#0
            ACALL WRITECHAR
            RET

```

```

WRITEROW3: MOV    PO,#94H     ;menulis karakter di baris 3
            ACALL ENDCOMMANDLCD
            MOV    R6,#20

```



```

MOV R7,#0
    ACALL WRITECHAR
    RET

WRITEROW4: MOV P0,#0D4H ;menulis karakter di baris 4
    ACALL ENDCOMMANDLCD
    MOV R6,#20
    MOV R7,#0
    ACALL WRITECHAR
    RET

WRITECHAR: MOV A,R7 ;menulis karakter ke LCD
    MOVC A,@A+DPTR
    MOV P0,A
    ACALL ENDCOMMANDCHAR
    INC R7
    DJNZ R6,WRITECHAR
    RET

ENDCOMMANDCHAR: CLR ELCD ;perintah ke LCD untuk menulis karakter
    SETB RSLCD
    SETB ELCD
    ACALL DELAY2
    CLR ELCD
    ACALL DELAY2
    RET

INITTIMER: MOV TMOD,#11H ;inisialisai timer
    SETB EA
    SETB ET0
    MOV TL0,#0F7H ;set durasi timer0 kira2 1/100 detik
    MOV TH0,#0D8H
    CLR TR0
    SETB ET1
    MOV TL1,#0AFH ;set durasi timer1 kira2 1/20 detik
    MOV TH1,#3CH
    SETB TR1
    SETB PT0
    RET

WAIT: ACALL TAMPILANAWAL
    JB STARTBUTTON,$
    JNB STARTBUTTON,$
    ACALL TAMPILANKEDUA
    JB STARTBUTTON,$
    JNB STARTBUTTON,$

JUMP2: ACALL JALURPAKAI
    MOV A,P1
    CJNE A,FLAG2,JUMP1
    JB STARTBUTTON,JUMP2
    ACALL STARTACTION
    CLR EX0
    CLR TR0
    ACALL INITPROGRAM
    SJMP WAIT

JUMP1: SETB BUZZER
    ACALL WARNING
    JB STARTBUTTON,$
    JNB STARTBUTTON,$
    CLR EX0
    CLR TR0
    ACALL INITPROGRAM
    SJMP WAIT

TAMPILANAWAL: MOV DPTR,#DATA1
    ACALL WRITEROW1
    MOV DPTR,#DATA2
    ACALL WRITEROW2
    MOV DPTR,#DATA3
    ACALL WRITEROW3

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MOV DPTR,#DATA4
ACALL WRITEROW4
RET

WARNING: PUSH ACC
MOV DPTR,#DATA8
ACALL WRITEROW1
MOV PO,#0COH ;menulis karakter di baris 2
ACALL ENDCOMMANDLCD
MOV PO,#20H
ACALL ENDCOMMANDCHAR
MOV PO,#20H
ACALL ENDCOMMANDCHAR
MOV PO,#4EH
ACALL ENDCOMMANDCHAR
MOV PO,#4FH
ACALL ENDCOMMANDCHAR
MOV PO,#20H
ACALL ENDCOMMANDCHAR
POP ACC
JNB ACC.0,JUMP3
JNB ACC.1,JUMP4
JNB ACC.2,JUMP5
JNB ACC.3,JUMP6
JNB ACC.4,JUMP7
JNB ACC.5,JUMP8
JNB ACC.6,JUMP9
JNB ACC.7,JUMP10
SJMP JUMP11
JUMP3: MOV PO,#31H
SJMP JUMP11
JUMP4: MOV PO,#32H
SJMP JUMP11
JUMP5: MOV PO,#33H
SJMP JUMP11
JUMP6: MOV PO,#34H
SJMP JUMP11
JUMP7: MOV PO,#35H
SJMP JUMP11
JUMP8: MOV PO,#36H
SJMP JUMP11
JUMP9: MOV PO,#37H
SJMP JUMP11
JUMP10: MOV PO,#38H
JUMP11: ACALL ENDCOMMANDCHAR
MOV PO,#20H
ACALL ENDCOMMANDCHAR
MOV PO,#4DH
ACALL ENDCOMMANDCHAR
MOV PO,#45H
ACALL ENDCOMMANDCHAR
MOV PO,#4EH
ACALL ENDCOMMANDCHAR
MOV PO,#44H
ACALL ENDCOMMANDCHAR
MOV PO,#41H
ACALL ENDCOMMANDCHAR
MOV PO,#48H
ACALL ENDCOMMANDCHAR
MOV PO,#55H
ACALL ENDCOMMANDCHAR
MOV PO,#4CH
ACALL ENDCOMMANDCHAR
MOV PO,#55H
ACALL ENDCOMMANDCHAR
MOV PO,#49H
ACALL ENDCOMMANDCHAR
MOV PO,#20H
ACALL ENDCOMMANDCHAR
MOV PO,#20H

```



```

ACALL ENDCOMMANDCHAR
MOV PO,#20H
ACALL ENDCOMMANDCHAR
MOV DPTR,#DATA9
ACALL WRITEROW3
MOV DPTR,#DATA8
ACALL WRITEROW4
RET

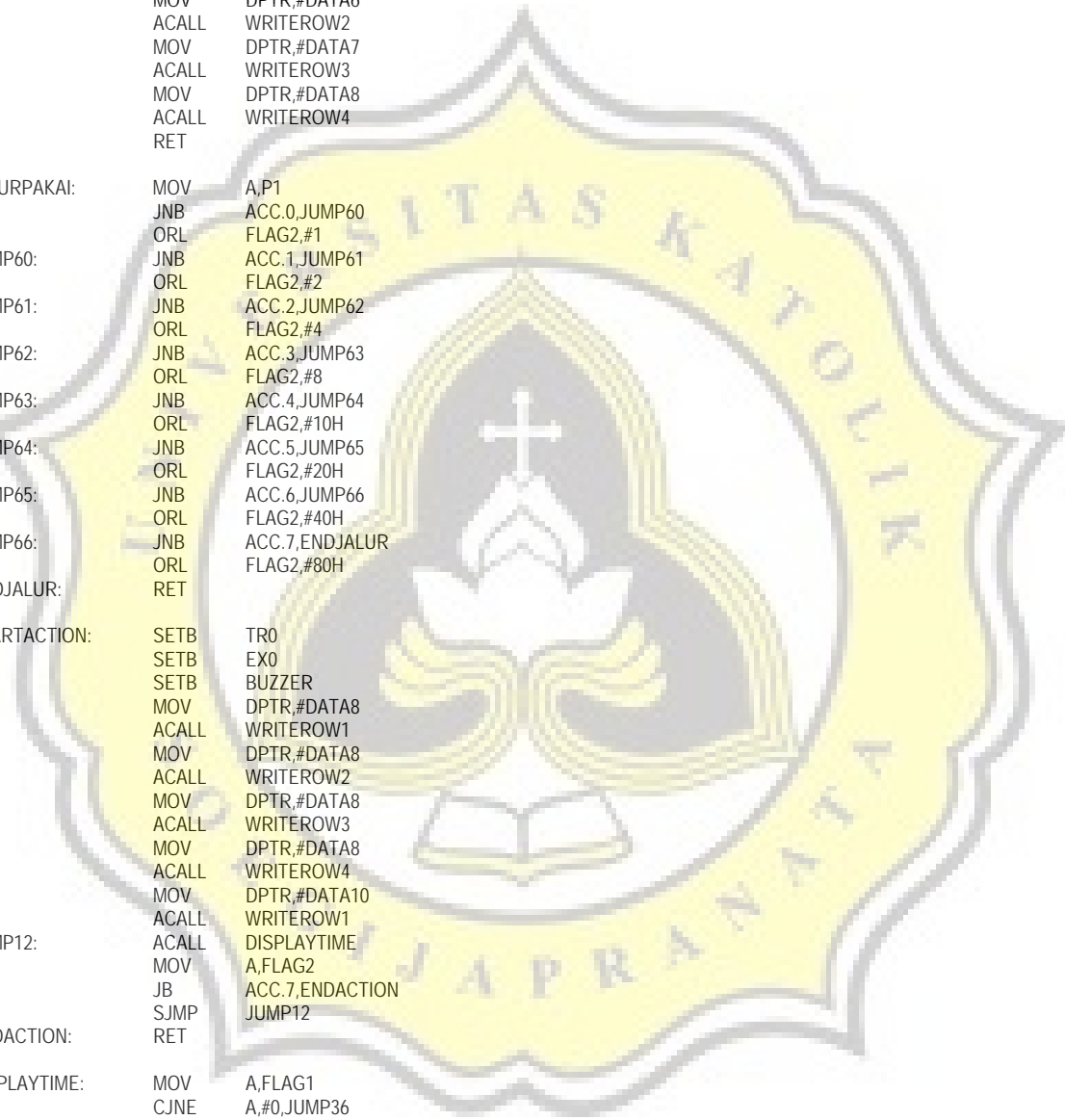
TAMPILANKEDUA: MOV DPTR,#DATA5
ACALL WRITEROW1
MOV DPTR,#DATA6
ACALL WRITEROW2
MOV DPTR,#DATA7
ACALL WRITEROW3
MOV DPTR,#DATA8
ACALL WRITEROW4
RET

JALURPAKAI: MOV A,P1
JNB ACC.0,JUMP60
ORL FLAG2,#1
JUMP60: JNB ACC.1,JUMP61
ORL FLAG2,#2
JUMP61: JNB ACC.2,JUMP62
ORL FLAG2,#4
JUMP62: JNB ACC.3,JUMP63
ORL FLAG2,#8
JUMP63: JNB ACC.4,JUMP64
ORL FLAG2,#10H
JUMP64: JNB ACC.5,JUMP65
ORL FLAG2,#20H
JUMP65: JNB ACC.6,JUMP66
ORL FLAG2,#40H
JUMP66: JNB ACC.7,ENDJALUR
ORL FLAG2,#80H
ENDJALUR: RET

STARTACTION: SETB TR0
SETB EX0
SETB BUZZER
MOV DPTR,#DATA8
ACALL WRITEROW1
MOV DPTR,#DATA8
ACALL WRITEROW2
MOV DPTR,#DATA8
ACALL WRITEROW3
MOV DPTR,#DATA8
ACALL WRITEROW4
MOV DPTR,#DATA10
ACALL WRITEROW1
JUMP12: ACALL DISPLAYTIME
MOV A,FLAG2
JB ACC.7,ENDACTION
SJMP JUMP12
ENDACTION: RET

DISPLAYTIME: MOV A,FLAG1
CJNE A,#0,JUMP36
MOV PO,#0COH ;menulis karakter di baris 2
ACALL ENDCOMMANDLCD
MOV PO,#20H
ACALL ENDCOMMANDCHAR
MOV PO,#20H
ACALL ENDCOMMANDCHAR
MOV PO,#20H
ACALL ENDCOMMANDCHAR
MOV PO,#20H
ACALL ENDCOMMANDCHAR
MOV PO,#20H

```





```

ACALL ENDCOMMANDCHAR
MOV PO,#20H
ACALL ENDCOMMANDCHAR
MOV A,MENIT
MOV B,#10
DIV AB
ADD A,#30H
MOV PO,A
ACALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV PO,A
ACALL ENDCOMMANDCHAR
MOV PO,#3AH
ACALL ENDCOMMANDCHAR
MOV A,DETIK
MOV B,#10
DIV AB
ADD A,#30H
MOV PO,A
ACALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV PO,A
ACALL ENDCOMMANDCHAR
MOV PO,#3AH
ACALL ENDCOMMANDCHAR
MOV A,PER100
MOV B,#10
DIV AB
ADD A,#30H
MOV PO,A
ACALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV PO,A
ACALL ENDCOMMANDCHAR
RET
JUMP36: ACALL DISPLAYPROGRESS
RET

DISPLAYPROGRESS:
INC FLAG2
MOV A,FLAG2
CJNE A,#1,JUMP41
MOV PO,#80H ;menulis karakter di baris 1
ACALL ENDCOMMANDLCD
ACALL WRITELINE1
MOV PO,#0COH ;menulis karakter di baris 2
ACALL ENDCOMMANDLCD
LCALL WRITELINE2
MOV PO,#94H ;menulis karakter di baris 3
ACALL ENDCOMMANDLCD
LCALL WRITELINE3
MOV PO,#0D4H ;menulis karakter di baris 4
ACALL ENDCOMMANDLCD
LCALL WRITELINE4
LJMP JUMP42
CJNE A,#2,JUMP47
MOV PO,#80H ;menulis karakter di baris 1
ACALL ENDCOMMANDLCD
ACALL WRITELINE2
MOV PO,#0COH ;menulis karakter di baris 2
ACALL ENDCOMMANDLCD
LCALL WRITELINE3
MOV PO,#94H ;menulis karakter di baris 3
ACALL ENDCOMMANDLCD
LCALL WRITELINE4
MOV PO,#0D4H ;menulis karakter di baris 4
ACALL ENDCOMMANDLCD

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                LCALL  WRITELINE5
                LJMP   JUMP42
JUMP47:        CJNE   A,#3,JUMP49
                MOV    PO,#80H           ;menulis karakter di baris 1
                ACALL  ENDCOMMANDLCD
                ACALL  WRITELINE3
                MOV    PO,#0C0H         ;menulis karakter di baris 2
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE4
                MOV    PO,#94H           ;menulis karakter di baris 3
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE5
                MOV    PO,#0D4H         ;menulis karakter di baris 4
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE6
                LJMP   JUMP42
JUMP49:        CJNE   A,#4,JUMP53
                MOV    PO,#80H           ;menulis karakter di baris 1
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE4
                MOV    PO,#0C0H         ;menulis karakter di baris 2
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE5
                MOV    PO,#94H           ;menulis karakter di baris 3
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE6
                MOV    PO,#0D4H         ;menulis karakter di baris 4
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE7
                LJMP   JUMP42
JUMP53:        CJNE   A,#5,JUMP54
                MOV    PO,#80H           ;menulis karakter di baris 1
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE5
                MOV    PO,#0C0H         ;menulis karakter di baris 2
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE6
                MOV    PO,#94H           ;menulis karakter di baris 3
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE7
                MOV    PO,#0D4H         ;menulis karakter di baris 4
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE8
                SJMP   JUMP42
JUMP54:        CJNE   A,#6,JUMP55
                MOV    PO,#80H           ;menulis karakter di baris 1
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE6
                MOV    PO,#0C0H         ;menulis karakter di baris 2
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE7
                MOV    PO,#94H           ;menulis karakter di baris 3
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE8
                MOV    PO,#0D4H         ;menulis karakter di baris 4
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE1
                SJMP   JUMP42
JUMP55:        CJNE   A,#7,JUMP56
                MOV    PO,#80H           ;menulis karakter di baris 1
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE7
                MOV    PO,#0C0H         ;menulis karakter di baris 2
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE8
                MOV    PO,#94H           ;menulis karakter di baris 3
                ACALL  ENDCOMMANDLCD
                LCALL  WRITELINE1
                MOV    PO,#0D4H         ;menulis karakter di baris 4
                ACALL  ENDCOMMANDLCD

```



```

MOV      PO,#20H
ACALL   ENDCOMMANDCHAR
RET
JUMP43: MOV      A,MENIT1
MOV      B,#10
DIV      AB
ADD      A,#30H
MOV      PO,A
ACALL   ENDCOMMANDCHAR
MOV      A,B
ADD      A,#30H
MOV      PO,A
ACALL   ENDCOMMANDCHAR
MOV      PO,#3AH
ACALL   ENDCOMMANDCHAR
MOV      A,DETIK1
MOV      B,#10
DIV      AB
ADD      A,#30H
MOV      PO,A
ACALL   ENDCOMMANDCHAR
MOV      A,B
ADD      A,#30H
MOV      PO,A
ACALL   ENDCOMMANDCHAR
MOV      PO,#3AH
ACALL   ENDCOMMANDCHAR
MOV      A,PER1001
MOV      B,#10
DIV      AB
ADD      A,#30H
MOV      PO,A
ACALL   ENDCOMMANDCHAR
MOV      A,B
ADD      A,#30H
MOV      PO,A
ACALL   ENDCOMMANDCHAR
MOV      PO,#20H
LCALL   ENDCOMMANDCHAR
RET
WRITELINE2: MOV      PO,#4CH
LCALL   ENDCOMMANDCHAR
MOV      PO,#49H
LCALL   ENDCOMMANDCHAR
MOV      PO,#4DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#45H
LCALL   ENDCOMMANDCHAR
MOV      PO,#20H
LCALL   ENDCOMMANDCHAR
MOV      PO,#32H
LCALL   ENDCOMMANDCHAR
MOV      PO,#20H
LCALL   ENDCOMMANDCHAR
MOV      PO,#3DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#3DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#3EH
LCALL   ENDCOMMANDCHAR
MOV      PO,#20H
LCALL   ENDCOMMANDCHAR
MOV      A,FLAG1
JB       ACC.1,JUMP44
MOV      PO,#2DH
ACALL   ENDCOMMANDCHAR
MOV      PO,#2DH
ACALL   ENDCOMMANDCHAR
MOV      PO,#2DH

```



```

ACALL ENDCOMMANDCHAR
MOV PO,#2DH
ACALL ENDCOMMANDCHAR
MOV PO,#2DH
ACALL ENDCOMMANDCHAR
MOV PO,#2DH
ACALL ENDCOMMANDCHAR
MOV PO,#2DH
ACALL ENDCOMMANDCHAR
MOV PO,#2DH
ACALL ENDCOMMANDCHAR
MOV PO,#20H
ACALL ENDCOMMANDCHAR
RET
JUMP44: MOV A,MENIT2
MOV B,#10
DIV AB
ADD A,#30H
MOV PO,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV PO,A
LCALL ENDCOMMANDCHAR
MOV PO,#3AH
LCALL ENDCOMMANDCHAR
MOV A,DETIK2
MOV B,#10
DIV AB
ADD A,#30H
MOV PO,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV PO,A
LCALL ENDCOMMANDCHAR
MOV PO,#3AH
LCALL ENDCOMMANDCHAR
MOV A,PER1002
MOV B,#10
DIV AB
ADD A,#30H
MOV PO,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV PO,A
LCALL ENDCOMMANDCHAR
MOV PO,#20H
LCALL ENDCOMMANDCHAR
RET
WRITELINE3: MOV PO,#4CH
LCALL ENDCOMMANDCHAR
MOV PO,#49H
LCALL ENDCOMMANDCHAR
MOV PO,#4DH
LCALL ENDCOMMANDCHAR
MOV PO,#45H
LCALL ENDCOMMANDCHAR
MOV PO,#20H
LCALL ENDCOMMANDCHAR
MOV PO,#33H
LCALL ENDCOMMANDCHAR
MOV PO,#20H
LCALL ENDCOMMANDCHAR
MOV PO,#3DH
LCALL ENDCOMMANDCHAR
MOV PO,#3DH
LCALL ENDCOMMANDCHAR

```



```

MOV      P0,#3EH
LCALL   ENDCOMMANDCHAR
MOV      P0,#20H
LCALL   ENDCOMMANDCHAR
MOV      A,FLAG1
JB       ACC.2,JUMP45
MOV      P0,#2DH
LCALL   ENDCOMMANDCHAR
MOV      P0,#2DH
LCALL   ENDCOMMANDCHAR
MOV      P0,#2DH
LCALL   ENDCOMMANDCHAR
MOV      P0,#2DH
LCALL   ENDCOMMANDCHAR
MOV      P0,#2DH
LCALL   ENDCOMMANDCHAR
MOV      P0,#2DH
LCALL   ENDCOMMANDCHAR
MOV      P0,#2DH
LCALL   ENDCOMMANDCHAR
MOV      P0,#2DH
LCALL   ENDCOMMANDCHAR
MOV      P0,#20H
LCALL   ENDCOMMANDCHAR
RET
JUMP45: MOV      A,MENIT3
MOV      B,#10
DIV      AB
ADD      A,#30H
MOV      P0,A
LCALL   ENDCOMMANDCHAR
MOV      A,B
ADD      A,#30H
MOV      P0,A
LCALL   ENDCOMMANDCHAR
MOV      P0,#3AH
LCALL   ENDCOMMANDCHAR
MOV      A,DETIK3
MOV      B,#10
DIV      AB
ADD      A,#30H
MOV      P0,A
LCALL   ENDCOMMANDCHAR
MOV      A,B
ADD      A,#30H
MOV      P0,A
LCALL   ENDCOMMANDCHAR
MOV      P0,#3AH
LCALL   ENDCOMMANDCHAR
MOV      A,PER1003
MOV      B,#10
DIV      AB
ADD      A,#30H
MOV      P0,A
LCALL   ENDCOMMANDCHAR
MOV      A,B
ADD      A,#30H
MOV      P0,A
LCALL   ENDCOMMANDCHAR
MOV      P0,#20H
LCALL   ENDCOMMANDCHAR
RET

```

```

WRITELINE4: MOV      P0,#4CH
LCALL   ENDCOMMANDCHAR
MOV      P0,#49H
LCALL   ENDCOMMANDCHAR
MOV      P0,#4DH
LCALL   ENDCOMMANDCHAR
MOV      P0,#45H

```



```

LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
MOV P0,#34H
LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
MOV P0,#3DH
LCALL ENDCOMMANDCHAR
MOV P0,#3DH
LCALL ENDCOMMANDCHAR
MOV P0,#3EH
LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
MOV A,FLAG1
JB ACC.3,JUMP46
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
RET
MOV A,MENIT4
MOV B,#10
DIV AB
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV P0,#3AH
LCALL ENDCOMMANDCHAR
MOV A,DETIK4
MOV B,#10
DIV AB
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV P0,#3AH
LCALL ENDCOMMANDCHAR
MOV A,PER1004
MOV B,#10
DIV AB
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR

```

JUMP46:



```
MOV    P0,#20H
LCALL  ENDCOMMANDCHAR
RET
```

WRITELINE5:

```
MOV    P0,#4CH
LCALL  ENDCOMMANDCHAR
MOV    P0,#49H
LCALL  ENDCOMMANDCHAR
MOV    P0,#4DH
LCALL  ENDCOMMANDCHAR
MOV    P0,#45H
LCALL  ENDCOMMANDCHAR
MOV    P0,#20H
LCALL  ENDCOMMANDCHAR
MOV    P0,#35H
LCALL  ENDCOMMANDCHAR
MOV    P0,#20H
LCALL  ENDCOMMANDCHAR
MOV    P0,#3DH
LCALL  ENDCOMMANDCHAR
MOV    P0,#3DH
LCALL  ENDCOMMANDCHAR
MOV    P0,#3EH
LCALL  ENDCOMMANDCHAR
MOV    P0,#20H
LCALL  ENDCOMMANDCHAR
MOV    A,FLAG1
JB     ACC.4,JUMP48
MOV    P0,#2DH
LCALL  ENDCOMMANDCHAR
MOV    P0,#2DH
LCALL  ENDCOMMANDCHAR
MOV    P0,#2DH
LCALL  ENDCOMMANDCHAR
MOV    P0,#2DH
LCALL  ENDCOMMANDCHAR
MOV    P0,#2DH
LCALL  ENDCOMMANDCHAR
MOV    P0,#2DH
LCALL  ENDCOMMANDCHAR
MOV    P0,#2DH
LCALL  ENDCOMMANDCHAR
MOV    P0,#20H
LCALL  ENDCOMMANDCHAR
RET
```

JUMP48:

```
MOV    A,MENIT5
MOV    B,#10
DIV    AB
ADD    A,#30H
MOV    P0,A
LCALL  ENDCOMMANDCHAR
MOV    A,B
ADD    A,#30H
MOV    P0,A
LCALL  ENDCOMMANDCHAR
MOV    P0,#3AH
LCALL  ENDCOMMANDCHAR
MOV    A,DETIK5
MOV    B,#10
DIV    AB
ADD    A,#30H
MOV    P0,A
LCALL  ENDCOMMANDCHAR
MOV    A,B
ADD    A,#30H
MOV    P0,A
LCALL  ENDCOMMANDCHAR
MOV    P0,#3AH
```





```

LCALL ENDCOMMANDCHAR
MOV A,PER1005
MOV B,#10
DIV AB
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
RET

```

WRITELINE6:

```

MOV P0,#4CH
LCALL ENDCOMMANDCHAR
MOV P0,#49H
LCALL ENDCOMMANDCHAR
MOV P0,#4DH
LCALL ENDCOMMANDCHAR
MOV P0,#45H
LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
MOV P0,#36H
LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
MOV P0,#3DH
LCALL ENDCOMMANDCHAR
MOV P0,#3DH
LCALL ENDCOMMANDCHAR
MOV P0,#3EH
LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
MOV A,FLAG1
JB ACC.5,JUMP50
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
RET

```

JUMP50:

```

MOV A,MENIT6
MOV B,#10
DIV AB
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV P0,#3AH
LCALL ENDCOMMANDCHAR

```





```

MOV      B,#10
DIV      AB
ADD      A,#30H
MOV      PO,A
LCALL   ENDCOMMANDCHAR
MOV      A,B
ADD      A,#30H
MOV      PO,A
LCALL   ENDCOMMANDCHAR
MOV      PO,#3AH
LCALL   ENDCOMMANDCHAR
MOV      A,DETIK7
MOV      B,#10
DIV      AB
ADD      A,#30H
MOV      PO,A
LCALL   ENDCOMMANDCHAR
MOV      A,B
ADD      A,#30H
MOV      PO,A
LCALL   ENDCOMMANDCHAR
MOV      PO,#3AH
LCALL   ENDCOMMANDCHAR
MOV      A,PER1007
MOV      B,#10
DIV      AB
ADD      A,#30H
MOV      PO,A
LCALL   ENDCOMMANDCHAR
MOV      A,B
ADD      A,#30H
MOV      PO,A
LCALL   ENDCOMMANDCHAR
MOV      PO,#20H
LCALL   ENDCOMMANDCHAR
RET

WRITELINE8:
MOV      PO,#4CH
LCALL   ENDCOMMANDCHAR
MOV      PO,#49H
LCALL   ENDCOMMANDCHAR
MOV      PO,#4DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#45H
LCALL   ENDCOMMANDCHAR
MOV      PO,#20H
LCALL   ENDCOMMANDCHAR
MOV      PO,#38H
LCALL   ENDCOMMANDCHAR
MOV      PO,#20H
LCALL   ENDCOMMANDCHAR
MOV      PO,#3DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#3DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#3EH
LCALL   ENDCOMMANDCHAR
MOV      PO,#20H
LCALL   ENDCOMMANDCHAR
MOV      A,FLAG1
JB       ACC.7,JUMP52
MOV      PO,#2DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#2DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#2DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#2DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#2DH
LCALL   ENDCOMMANDCHAR
MOV      PO,#2DH

```



```

LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#2DH
LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
RET
JUMP52: MOV A,MENIT8
MOV B,#10
DIV AB
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV P0,#3AH
LCALL ENDCOMMANDCHAR
MOV A,DETIK8
MOV B,#10
DIV AB
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV P0,#3AH
LCALL ENDCOMMANDCHAR
MOV A,PER1008
MOV B,#10
DIV AB
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV A,B
ADD A,#30H
MOV P0,A
LCALL ENDCOMMANDCHAR
MOV P0,#20H
LCALL ENDCOMMANDCHAR
RET
SAVETIME1: MOV MENIT1,MENIT
MOV DETIK1,DETIK
MOV PER1001,PER100
ORL FLAG2,#1
RET
SAVETIME2: MOV MENIT2,MENIT
MOV DETIK2,DETIK
MOV PER1002,PER100
ORL FLAG2,#2
RET
SAVETIME3: MOV MENIT3,MENIT
MOV DETIK3,DETIK
MOV PER1003,PER100
ORL FLAG2,#4
RET
SAVETIME4: MOV MENIT4,MENIT
MOV DETIK4,DETIK
MOV PER1004,PER100
ORL FLAG2,#8

```



RET  
SAVETIME5: MOV MENIT5,MENIT  
MOV DETIK5,DETIK  
MOV PER1005,PER100  
ORL FLAG2,#10H  
RET  
SAVETIME6: MOV MENIT6,MENIT  
MOV DETIK6,DETIK  
MOV PER1006,PER100  
ORL FLAG2,#20H  
RET  
SAVETIME7: MOV MENIT7,MENIT  
MOV DETIK7,DETIK  
MOV PER1007,PER100  
ORL FLAG2,#40H  
RET  
SAVETIME8: MOV MENIT8,MENIT  
MOV DETIK8,DETIK  
MOV PER1008,PER100  
ORL FLAG2,#80H  
RET  
END

