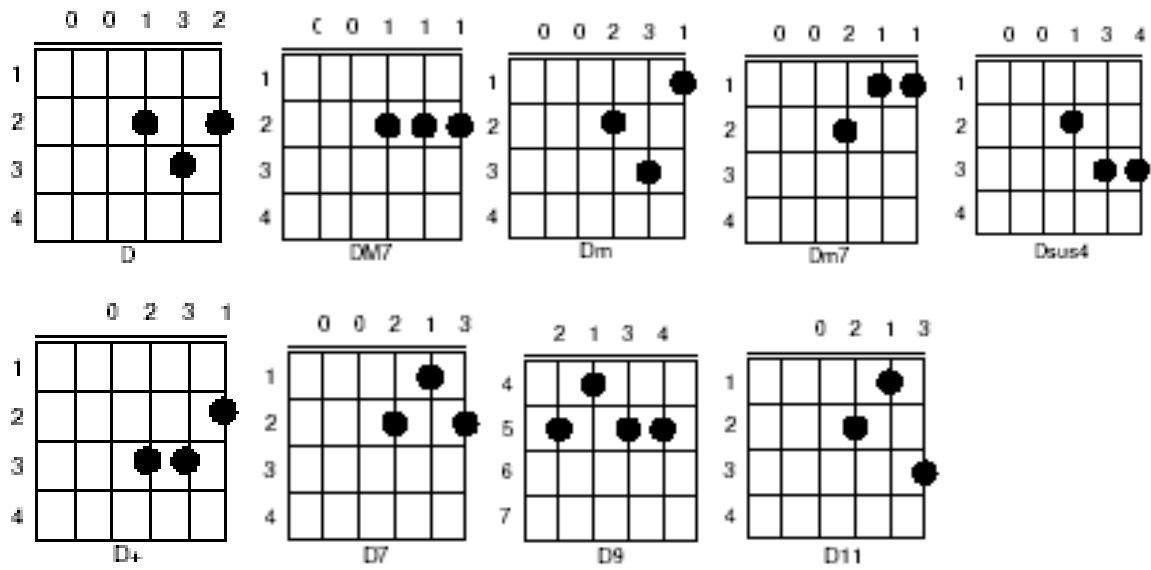
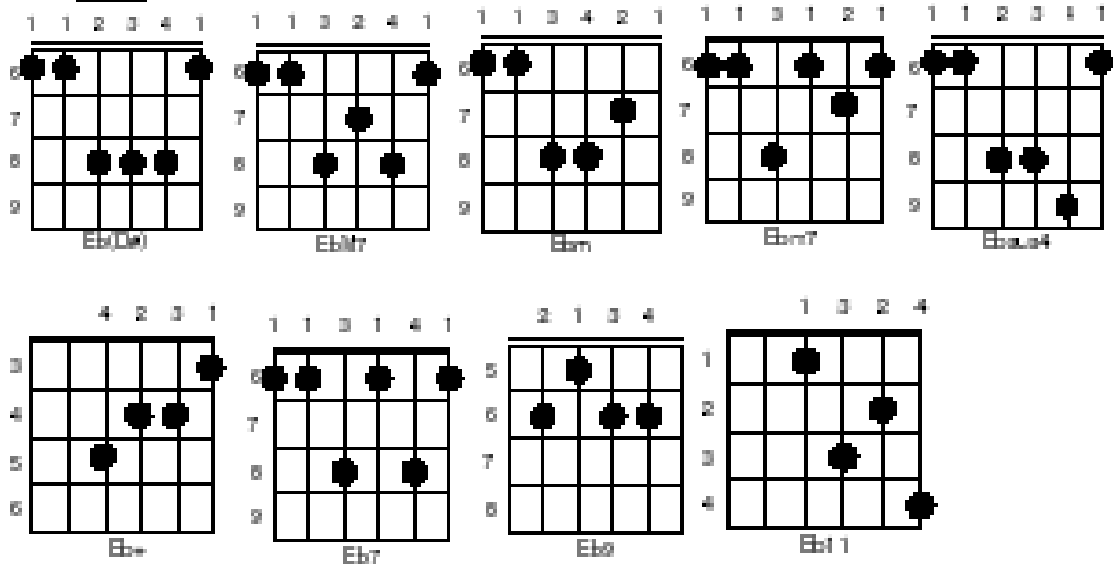


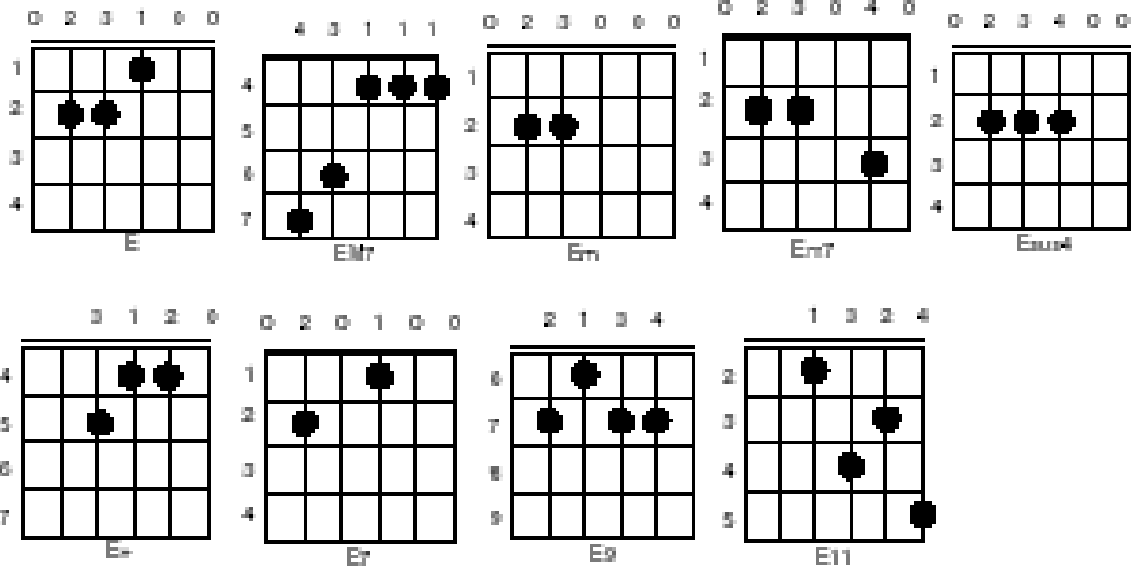
# D



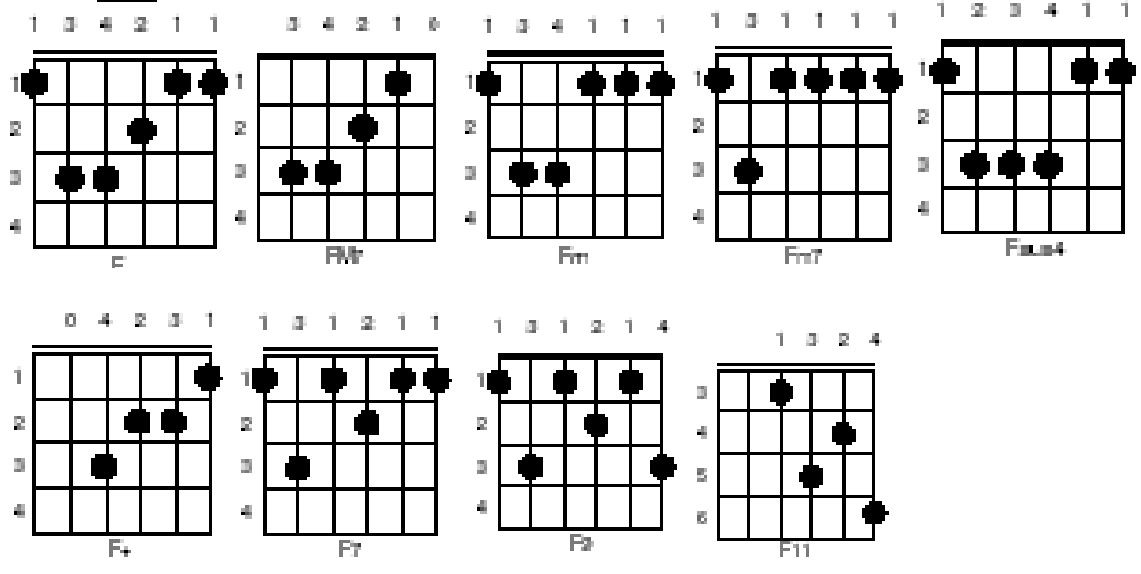
# E<sub>b</sub>



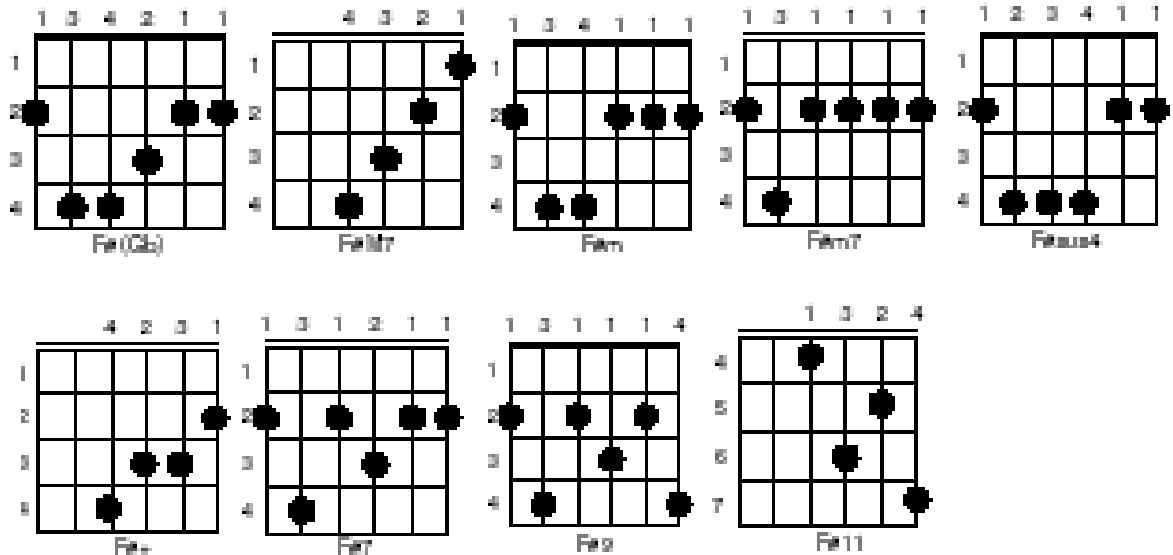
# E



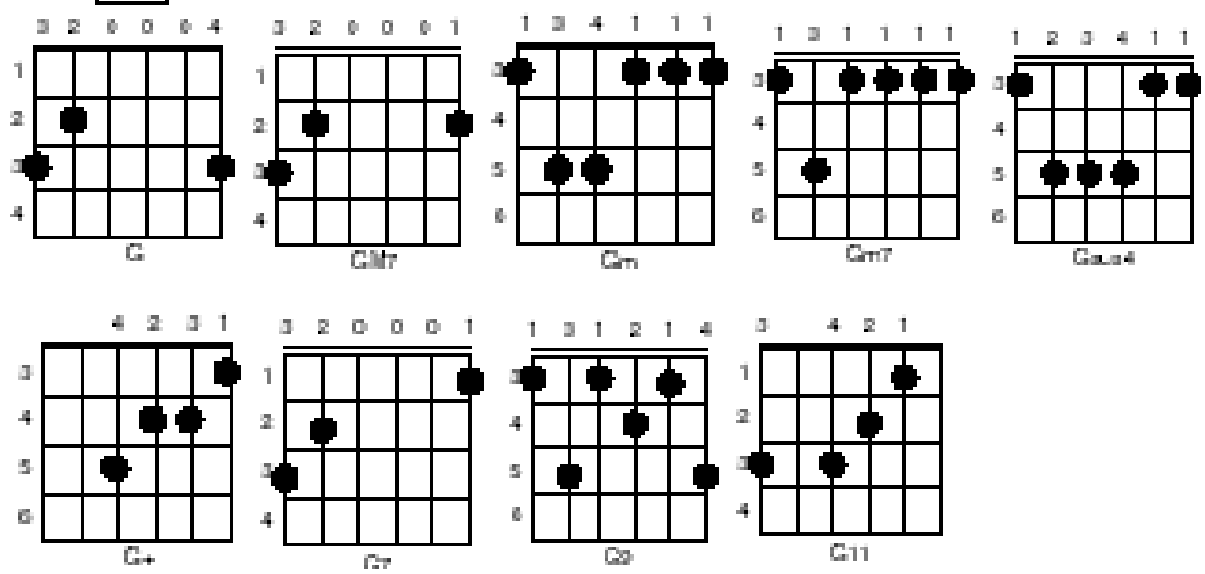
# F



**Gb**



**G**



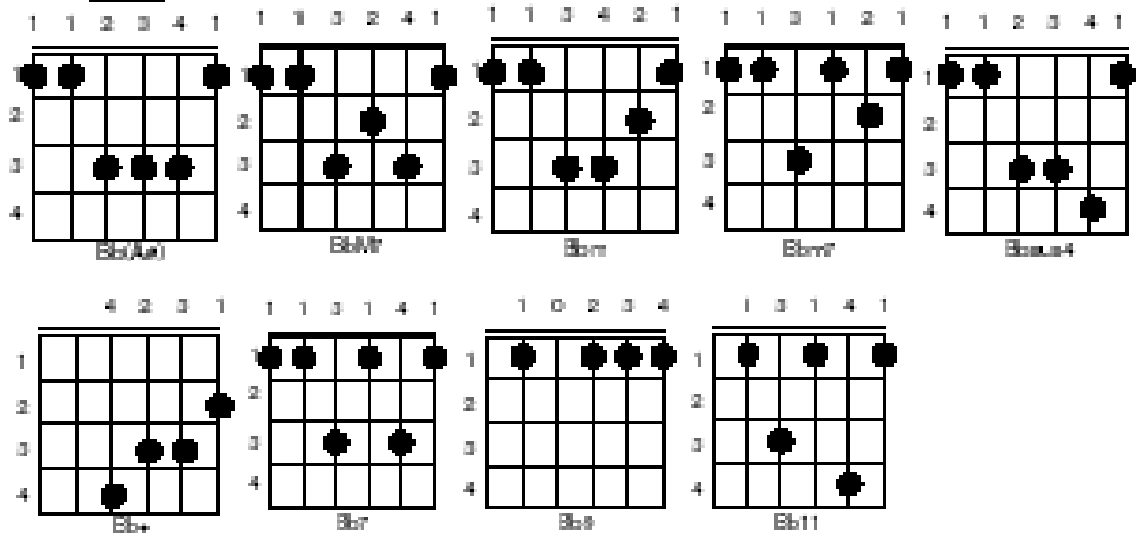
**Ab**

<p>1 3 4 2 1 1</p> <p>Ab(G6)</p>	<p>4 3 2 1</p> <p>Ab(b7)</p>	<p>1 3 4 1 1 1</p> <p>Ab(m)</p>	<p>1 3 1 1 1 1</p> <p>Ab(m7)</p>	<p>1 2 3 4 1 1</p> <p>Ab(m9)4</p>
<p>4 2 3 1</p> <p>Ab+</p>	<p>1 3 1 2 1 0</p> <p>Ab7</p>	<p>1 3 1 2 1 4</p> <p>Ab9</p>	<p>3 4 2 1</p> <p>Ab11</p>	

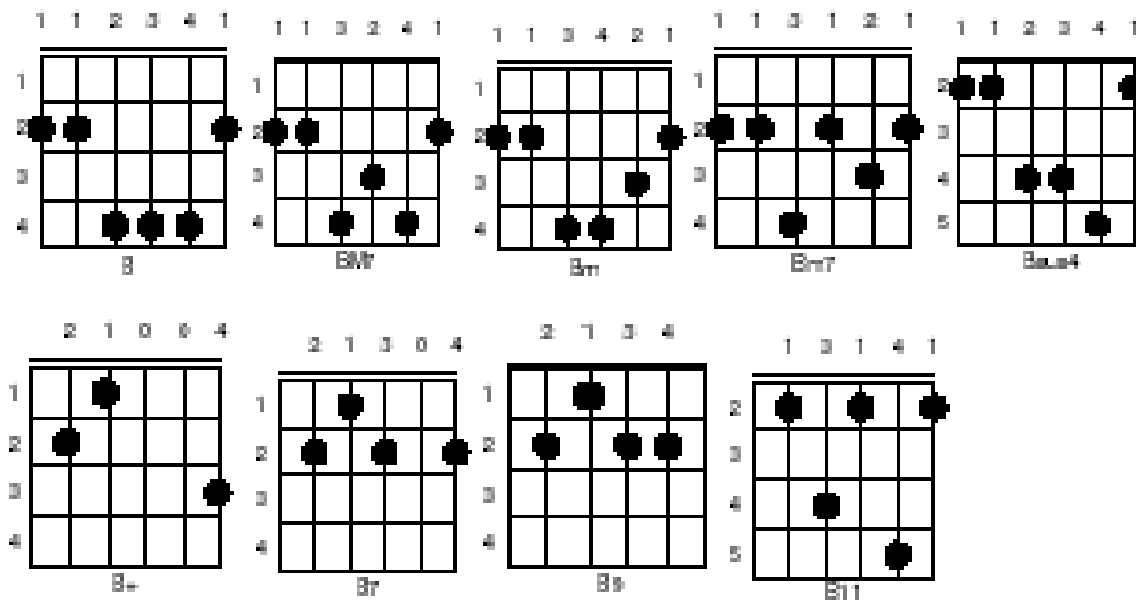
**A**

<p>0 0 2 3 4 0</p> <p>A</p>	<p>0 0 2 1 3 0</p> <p>A(b7)</p>	<p>0 0 2 3 1 0</p> <p>A(m)</p>	<p>0 2 0 1 0</p> <p>A(m7)</p>	<p>0 0 1 2 3 0</p> <p>A(m9)4</p>
<p>4 2 3 1</p> <p>A+</p>	<p>0 0 2 0 3 0</p> <p>A7</p>	<p>1 3 1 2 1 4</p> <p>A9</p>	<p>0 1 0 3 0</p> <p>A11</p>	

### E♭



### B



Sumber : <http://www.traditionalmusic.co.uk/chords/>

## LISTING PROGRAM MIKROKONTROLER

```
Cacah          equ          -40000
Dly1MS equ      -10000
Dly50MS        equ          -50000
EnLcd          bit          p3.7
RSLcd          bit          p3.6
SwUp           bit          p1.4
SwDwn         bit          p1.5
```

```
idxscan        equ          08h
DAdcL          equ          09h
BtsUp          equ          0bh
BtsDw          equ          0ch
RDly           equ          0dh
BSndD          equ          0eh
Idxdsnd        equ          0fh
seg0           equ          10h
seg1           equ          11h
seg2           equ          12h
seg3           equ          13h
seg4           equ          14h
seg5           equ          15h
seg6           equ          16h
```

```
Dlykey         equ          1dh
DkyBlm         equ          1ch
DtLcd          equ          1eh
dtkey          equ          1fh
idxknc         equ          25h
```

```
keypres        bit          20h.2
SwUpDwn        bit          20h.1
```

cseg

```
org 00h
JMP start
```

```
org 30h
```

start:

;----- Initial Variabel -----

```
Call          InitLCD
mov           dlykey,#020
```

;----- Main Program -----

MLoop:

```
disp:      mov      R0,#Seg0
           Call     D7Seg

           Call     RdUpDwn
           jnb     keypres,NoVwKey
           clr     keypres
           call    VwAkord
```

```
NoVwKey:   jmp      Mloop
```

;-----

```
RdUpDwn:  jnb     Swup,SwUpPrs
           jnb     SwDwn,SwDwnPrs
```

```
NoPrs:    ret
```

```
SwUpPrs:  jb      SwUp,NoPrs
           mov     a,idxknc
           cjne   a,#08,blm9
           mov     idxknc,#0
           ret
```

```
blm9:     inc     idxknc
           ret
```

```
SwDwnPrs: jb      SwDwn,NoPrs
           mov     a,idxknc
           cjne   a,#0,blm0
           mov     idxknc,#08
           ret
```

```
blm0:     dec     idxknc
           ret
```

;-----

```
VwAkord:  mov     a,dtkey
           cjne   a,#01,BknKncC
           mov     30h,#'C'
           mov     R1,#01
           mov     dptr,#Kc
           Call    GetDt
           Call    InclKnc
           Ret
```



```
BknKncC:    cjne    a,#02,BknKncDb
            mov     30h,#'D'
            mov     31h,#'b'
            mov     R1,#02
            mov     dptr,#KDb
            Call   GetDt
            Call   InClDknc
            ret
```

```
BknKncDb:   cjne    a,#03,BknKncD
            mov     30h,#'D'
            mov     R1,#01
            mov     dptr,#KD
            Call   GetDt
            Call   InClDknc
            Ret
```

```
BknKncD:    cjne    a,#04,BknKncEb
            mov     30h,#'E'
            mov     31h,#'b'
            mov     R1,#02
            mov     dptr,#KEb
            Call   GetDt
            Call   InClDknc
```

ret

```
BknKncEb:   cjne    a,#05,BknKncE
            mov     30h,#'E'
            mov     R1,#01
            mov     dptr,#KE
            Call   GetDt
            Call   InClDknc
```

ret

```
BknKncE:    cjne    a,#06,BknKncF
            mov     30h,#'F'
            mov     R1,#01
            mov     dptr,#KF
            Call   GetDt
            Call   InClDknc
```

ret

```
BknKncF:    cjne    a,#07,BknKncGb
            mov     30h,#'G'
            mov     31h,#'b'
            mov     R1,#02
            mov     dptr,#KGb
            Call   GetDt
            Call   InClDknc
```

ret

```
BknKncGb:  cjne      a,#08,BknKncG
            mov      30h,#'G'
            mov      R1,#01
            mov      dptr,#KG
            Call     GetDt
            Call     InldKnc
```

ret

```
BknKncG:   cjne      a,#09,BknKncAb
            mov      30h,#'A'
            mov      31h,#'b'
            mov      R1,#02
            mov      dptr,#KAb
            Call     GetDt
            Call     InldKnc
```

ret

```
BknKncAb:  cjne      a,#010,BknKncA
            mov      30h,#'A'
            mov      R1,#01
            mov      dptr,#KA
            Call     GetDt
            Call     InldKnc
```

ret

```
BknKncA:   cjne      a,#011,BknKncBb
            mov      30h,#'B'
            mov      31h,#'b'
            mov      R1,#02
            mov      dptr,#KBb
            Call     GetDt
            Call     InldKnc
```

ret

```
BknKncBb:  cjne      a,#012,BknKncB
            mov      30h,#'B'
            mov      R1,#01
            mov      dptr,#KB
            Call     GetDt
            Call     InldKnc
```

```
BknKncB:   ret
```

```

;-----
InclKnc:    jb      swupdwn,noincid
            inc      idxknc
            mov      a,idxknc
            cjne     a,#09,blmmax
            mov      idxknc,#0
blmmax:     ret
noincid:clr swupdwn
            ret
;-----

```

```

GetDt:      mov      dtlcd,#080h
            mov      dptr,#Hapus
            Call     writeln

            mov      dtlcd,#0c0h
            mov      dptr,#Hapus
            Call     writeln

            mov      dtlcd,#087h
            call     writeir

            mov      r0,#030h
            Call     WrtKarRam

```

```

;----- get kunci -----
            mov      dptr,#Major
            mov      a,idxknc
            mov      b,#016
            mul      ab
            add      a,dpl
            mov      dpl,a
            mov      a,#0
            jnc      noincdp
            inc      dph

```

```

noincdp:   mov      dtlcd,#0c0h
            call     writeln

```

```

;----- get matrix&7 seg -----
            mov      r0,#018h

```

```

        mov     a,idxknc
        mov     b,#011
        mul    ab
        add    a,dpl
        mov    dpl,a
        mov    a,#0
        jnc   notmbhdp
        inc    dph

notmbhdp:  push   acc
          movc  a,@a+dptr
          cpl  a
          mov  @r0,a
          pop  acc
          inc  a
          inc  r0
          cjne a,#04,notmbhdp
          mov  r0,#seg6

Nxsvseg:  movc  a,@a+dptr
          mov  @r0,a
          inc  a
          dec  r0
          cjne a,#011,Nxsvseg
          ret

```

;----- Scanning 7 segment -----

```

D7seg:   mov    a,@r0
          anl   a,#0fh
          swap a
          push  acc
          mov  a,idxscan
          pop  b
          orl  a,b
          mov  p2,a

```

;-----

```

          push  00h
          mov  a,#018h
          clr  c
          add  a,idxscan
          cjne a,#01ch,NFScanLed

ScanLedOvr:  mov  p3,#0ffh
            jmp  NeScanLed

NFScanLed:  jnc  ScanLedOvr
            mov  r0,a
            mov  a,@R0
            mov  p3,a

```

```
NeScanLed:   pop           00h
;-----
```

```
Call RdKeypd
```

```
                mov       R5,#08
                call      delay
inc             idxscan
                inc       r0
                cjne      r0,#018h,D7seg
mov            r0,#010h
                mov       08h,#0
                mov       p2,#00

                ret
```

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

```
RdKeypd:       mov       a,p1
                cpl       a
                anl       a,#07
                jz        nokeyprs
                cjne      a,dkyblm,newkey
                dec       dlykey
                mov       a,dlykey
                jz        ambldtkey
nokeyprs:      ret
```

```
newkey:        mov       dkyblm,a
                mov       dlykey,#020
                mov       idxknc,#0
                ret
```

```
ambldtkey:     mov       dlykey,#020
                mov       a,p1
                cpl       a
                anl       a,#07
                push      acc
                mov       a,idxscan
                anl       a,#03
                swap      a
                pop       b
                orl       a,b
                setb      keypres
                mov       dtkey,a
                ret
```

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

```
;Tundaan
```

```
Delay:         mov       r6,#0ffh;
wait:          djnz      r6,$      ;
                djnz      r5,wait  ;
                ret
```

```

;-----
IniTLCD:    Mov        DtLcd,#038H
            Call       WriteIR
            Mov        DtLcd,#08h
            Call       WriteIR
            Mov        DtLcd,#01
            Call       WriteIR
            Mov        DtLcd,#06
            Call       WriteIR

            Mov        DtLcd,#038H
            Call       WriteIR
            Mov        DtLcd,#0eh
            Call       WriteIR
            Mov        DtLcd,#06h
            Call       WriteIR

            mov        dptr,#Hdr1
            mov        dtlcd,#080h
            Call       WriteLn

            mov        dptr,#Hdr2
            mov        dtlcd,#0c0h
            Call       WriteLn

            Ret

```

```

;-----

WrtKarRam:  Call       WriteIR

nextkarRam: Mov        a,@r0
            mov        dtlcd,a
            Call       WriteDt
            inc        r0
            djnz       r1,nextkarRam
            ret

```

```

;-----
WriteKarDPTR:
Call        WriteIR
            mov        a,#0

nextkarDPTR: Movc       a,@a+dptr
            mov        dtlcd,a

```

```

Call      WriteDt
inc       a
djnz     r0,nextkarDPTR
ret

```

-----

;Tuliskan data ke baris 1

```

WriteLn:  Call      WriteIR
          mov      r0,#016
          mov      r1,#0

ndtkar:  mov      a,r1
          Movc     a,@a+dptr
          mov      dtlcd,a
          Call     WriteDt
          inc      r1
          djnz     r0,ndtkar
          ret

```

-----

;Kirimkan Instruksi Ke LCD

```

WriteIR:  clr      RsLcd
          Mov      P0,DtLcd
          Call     ClockE
          Ret

```

-----

;Kirimkan Data Ke LCD

```

WriteDt:  setb     RsLcd
          Mov      P0,DtLcd
          Call     ClockE
          Mov      r5,#010
          Call     Delay
          Ret

```

-----

;Memberikan sinyal clock pd pin E-LCD di P3.0

```

ClockE:  clr      EnLcd
          setb     EnLcd
          clr      EnLcd
          ret

```

```

Hdr1:    Db ' Akord Gitar '
Hdr2:    Db ' Oleh : Dimas '
Hapus:   Db ' '
Major:   Db ' Major '
Major7:  Db ' Major 7th '
Minor:   Db ' Minor '
Minor7:  Db ' Minor 7th '
Suspend: Db ' Suspended 4th'
Augment: Db ' Augment '
K7th:    Db ' 7th '

```

K9th: Db ' 9th '  
K11th: Db ' 11th '

Kc: Db 111111b,101111b,110111b,111101b,1,0,3,2,0,1,0 ;major  
Db 111111b,101111b,110111b,111111b,1,0,3,2,0,0,0 ;major 7th  
Db 111111b,110011b,111101b,001110b,3,1,1,3,4,2,1 ;minor  
Db 111111b,110111b,111101b,001010b,3,1,1,3,1,2,1 ;minor7  
Db 111101b,110011b,111111b,001110b,3,1,1,2,3,4,1 ;suspended  
Db 111111b,101110b,110111b,111001b,1,0,3,2,1,1,4 ;augment  
Db 111111b,101011b,110111b,111101b,1,0,3,2,4,1,0 ;7th  
Db 111111b,101001b,110111b,111111b,1,0,2,1,3,4,0 ;9th  
Db 111111b,101001b,111111b,111110b,1,0,2,0,3,4,1 ;11th

KDb: Db 111111b,110001b,111111b,101110b,4,0,1,2,3,4,1 ;major  
Db 110101b,111011b,001110b,111111b,3,1,1,3,2,4,1 ;major 7th  
Db 111111b,110011b,111101b,101110b,3,0,1,3,4,2,1 ;minor  
Db 111111b,110111b,111101b,101010b,4,0,1,3,1,2,1 ;minor7  
Db 111101b,110011b,111111b,001110b,4,1,1,2,3,4,1 ;suspended  
Db 111111b,110111b,111001b,111110b,1,0,0,4,2,3,1 ;augment  
Db 101011b,110111b,111101b,111111b,1,0,3,2,4,1,0 ;7th  
Db 101001b,110111b,111111b,111111b,1,0,2,1,3,4,0 ;9th  
Db 101001b,111111b,111110b,111111b,1,0,2,0,3,4,1 ;11th

KD: Db 111111b,111101b,111010b,111111b,1,0,0,0,1,3,2 ;major  
Db 111111b,111111b,111000b,111111b,1,0,0,0,1,1,1 ;major 7th  
Db 111111b,111101b,111011b,111110b,1,0,0,0,2,3,1 ;minor  
Db 111111b,111111b,111011b,111100b,1,0,0,0,2,1,1 ;minor7  
Db 111111b,111100b,111011b,111111b,1,0,0,0,1,3,4 ;suspended  
Db 111111b,111001b,111110b,111111b,1,0,0,0,2,3,1 ;augment  
Db 111111b,111111b,111010b,111101b,1,0,0,0,2,1,3 ;7th  
Db 111111b,111111b,101001b,110111b,4,0,2,1,3,4,0 ;9th  
Db 111111b,111110b,111011b,111101b,1,0,0,0,2,1,3 ;11<sup>th</sup>

;------  
KEb: Db 111111b,110001b,111111b,001110b,6,1,1,2,3,4,1 ;major  
Db 111111b,110101b,111011b,001110b,6,1,1,3,2,4,1 ;major 7th  
Db 111111b,110011b,111101b,001111b,6,1,1,3,4,2,1 ;minor  
Db 111111b,110111b,111101b,001010b,6,1,1,3,1,2,1 ;minor7  
Db 111101b,110011b,111111b,001110b,6,1,1,2,3,4,1 ;suspended  
Db 111111b,110111b,111001b,111110b,3,0,0,4,2,3,1 ;augment  
Db 111111b,110101b,111111b,001010b,6,1,1,3,1,4,1 ;7th  
Db 111111b,111111b,101001b,110111b,5,0,2,1,3,4,0 ;9th  
Db 111110b,111011b,111101b,110111b,1,0,0,1,3,2,4 ;11th

KE: Db 111111b,111111b,100111b,111011b,1,0,2,3,1,0,0 ;major  
Db 101111b,110111b,111111b,111000b,4,0,4,3,1,1,1 ;major 7th  
Db 111111b,111111b,100111b,111111b,1,0,2,3,0,0,0 ;minor  
Db 111111b,111101b,100111b,111111b,1,0,2,3,0,4,0 ;minor7  
Db 111111b,111111b,100011b,111111b,1,0,2,3,4,0,0 ;suspended  
Db 111111b,111111b,110111b,111001b,4,0,0,3,1,2,0 ;augment



Db 111111b,111111b,101111b,111011b,1,0,2,0,1,0,0 ;7th  
Db 111111b,111111b,101001b,110111b,6,0,2,1,3,4,0 ;9th  
Db 111110b,111011b,111101b,110111b,2,0,0,1,3,2,4 ;11th

KF: Db 111111b,100111b,111011b,011100b,1,1,3,4,2,1,1 ;major  
Db 111111b,100111b,111011b,111101b,1,0,3,4,2,1,0 ;major 7th  
Db 111111b,100111b,111111b,011000b,1,1,3,4,1,1,1 ;minor  
Db 111111b,101111b,111111b,010000b,1,1,3,1,1,1,1 ;minor7  
Db 111111b,100011b,111111b,011100b,1,1,2,3,4,1,1 ;suspended  
Db 111111b,110111b,111001b,111110b,1,0,0,4,2,3,1 ;augment  
Db 111111b,101111b,111011b,010100b,1,1,3,1,2,1,1 ;7th  
Db 111111b,101110b,111011b,010101b,1,1,3,1,2,1,4 ;9th  
Db 111110b,111011b,111101b,110111b,3,0,0,1,3,2,4 ;11th

;------

KGb: Db 100111b,111011b,011100b,111111b,1,1,3,4,2,1,1 ;major  
Db 110111b,111011b,111101b,111110b,1,0,0,4,3,2,1 ;major 7th  
Db 100111b,111111b,011000b,111111b,1,1,3,4,1,1,1 ;minor  
Db 101111b,111111b,010000b,111111b,1,1,3,1,1,1,1 ;minor7  
Db 100011b,111111b,011100b,111111b,1,1,2,3,4,1,1 ;suspended  
Db 110111b,111001b,111110b,111111b,1,0,0,4,2,3,1 ;augment  
Db 101111b,111011b,010100b,111111b,1,1,3,1,2,1,1 ;7th  
Db 101110b,111011b,010101b,111111b,1,1,3,1,1,1,4 ;9th  
Db 111110b,111011b,111101b,110111b,4,0,0,1,3,2,4 ;11th

KG: Db 111111b,011110b,101111b,111111b,1,3,2,0,0,0,4 ;major  
Db 111111b,011111b,101110b,111111b,1,3,2,0,0,0,1 ;major 7th  
Db 111111b,100111b,111111b,011000b,3,1,3,4,1,1,1 ;minor  
Db 111111b,101111b,111111b,010000b,3,1,3,1,1,1,1 ;minor7  
Db 111111b,100011b,111111b,011100b,3,1,2,3,4,1,1 ;suspended  
Db 111111b,110111b,111001b,111110b,3,0,0,4,2,3,1 ;augment  
Db 111111b,011111b,101111b,111110b,1,3,2,0,0,0,1 ;7th  
Db 111111b,101110b,111011b,010101b,3,1,3,1,2,1,4 ;9th  
Db 111111b,010111b,111011b,111101b,1,3,0,4,2,1,0 ;11<sup>th</sup>

KAb: Db 111111b,100111b,111011b,011100b,4,1,3,4,2,1,1 ;major  
Db 110111b,111011b,111101b,111110b,4,0,0,4,3,2,1 ;major 7th  
Db 111111b,100111b,111111b,011000b,4,1,3,4,1,1,1 ;minor  
Db 111111b,101111b,111111b,010000b,4,1,3,1,1,1,1 ;minor7  
Db 111111b,100011b,111111b,011100b,3,1,2,3,4,1,1 ;suspended  
Db 110111b,111001b,111110b,111111b,3,0,0,4,2,3,1 ;augment  
Db 111111b,101111b,111011b,010101b,4,1,3,1,2,1,0 ;7th  
Db 111111b,101110b,111011b,010101b,4,1,3,1,2,1,4 ;9th  
Db 010111b,111011b,111101b,111111b,1,3,0,4,2,1,0 ;11<sup>th</sup>

;------

KA: Db 111111b,111111b,110001b,111111b,1,0,0,2,3,4,0 ;major  
Db 111111b,111111b,110101b,111011b,1,0,0,2,1,3,0 ;major 7th  
Db 111111b,111111b,110011b,111101b,1,0,0,2,3,1,0 ;minor  
Db 111111b,111111b,110111b,111101b,1,0,0,2,0,1,0 ;minor7  
Db 111111b,111101b,110011b,111111b,1,0,0,1,2,3,0 ;suspended  
Db 111111b,110111b,111001b,111110b,1,0,0,4,2,3,1 ;augment  
Db 111111b,111111b,110101b,111111b,1,0,0,2,0,3,0 ;7th  
Db 111111b,101110b,111011b,010101b,5,1,3,1,2,1,4 ;9th  
Db 111111b,111101b,110111b,111111b,1,0,0,1,0,3,0 ;11th

KBb: Db 111111b,110001b,111111b,001110b,1,1,1,2,3,4,1 ;major  
Db 111111b,110101b,111011b,001110b,1,1,1,3,2,4,1 ;major 7th  
Db 111111b,110011b,111101b,001110b,1,1,1,3,4,2,1 ;minor  
Db 111111b,110111b,111101b,001010b,1,1,1,3,1,2,1 ;minor7  
Db 111101b,110011b,111111b,001110b,1,1,1,2,3,4,1 ;suspended  
Db 110111b,111001b,111110b,111111b,1,0,0,4,2,3,1 ;augment  
Db 111111b,110101b,111111b,001010b,1,1,1,3,1,4,1 ;7th  
Db 111111b,111111b,111111b,101000b,1,0,1,0,2,3,4 ;9th  
Db 111101b,110111b,111111b,101010b,1,0,1,3,1,4,1 ;11th

KB: Db 110001b,111111b,001110b,111111b,1,1,1,2,3,4,1 ;major  
Db 110101b,111011b,001110b,111111b,1,1,1,3,2,4,1 ;major 7th  
Db 110011b,111101b,001110b,111111b,1,1,1,3,4,2,1 ;minor  
Db 111111b,110111b,111101b,001010b,1,1,1,3,1,2,1 ;minor7  
Db 111101b,110011b,111111b,001110b,2,1,1,2,3,4,1 ;suspended  
Db 111111b,111110b,101111b,110111b,1,0,2,1,0,0,4 ;augment  
Db 111111b,111111b,101010b,110111b,1,0,2,1,3,0,4 ;7th  
Db 111111b,111111b,101001b,110111b,1,0,2,1,3,4,0 ;9th  
Db 111101b,110111b,111111b,101010b,2,0,1,3,1,4,1 ;11th

end