```
.model small
.stack 100h
.data
        menu db 10,13,'MENU'
            db 10,'1. Hex to BCD'
            db 10,'2. BCD to Hex'
            db 10,'3. Exit'
            db 10,'Enter your choice:- $'
        m1      db 10,'Enter 4 Digit Hex Number:- $'
        m2      db 10,'Equivalent BCD Number:- $'
        num  dw 0000h
        arr  db 5 dup(0)
        count db 00h
        m3      db 10,'Enter 5 Digit BCD Number:- $'
        m4      db 10,'Equivalent Hex Number:- $'
        num1  dw 10000D
        num2  dw 10d
        num3  dw ?

.code
        mov    ax,@data
        mov    ds,ax

     main:lea   dx,menu
        mov    ah,09H
        int    21h

        mov    ah,01h
        int    21h
        cmp    al,'1'
        je     case1
        cmp    al,'2'
        je     case2
        jmp    exit

     exit:mov   ah,4Ch
        int    21h

    case1:call HEXTOBCD
        jmp    main

    case2:call BCDTOHEX
        jmp    main

      HEXTOBCD PROC

        lea    dx,m1
        mov    ah,09h
        int    21h

        mov    ch,04h

    loop1:mov ah,01h
        int    21h
        cmp    al,39h
        jbe    skip1
        sub    al,07h

    skip1:sub  al,30h
        mov    ah,00h
```

```
        add     num,ax
        mov     cl,04
        rol     num,cl
        dec     ch
        jnz     loop1
        mov     cl,04
        rol     num,cl

        mov     ax,num
        mov     dx,0000h
        mov     bx,000Ah
        lea     si,arr

loop2:div   bx
        mov     [si],dx
        inc     si
        inc     count
        mov     dx,0000h
        cmp     ax,0000h
        jnz     loop2

        lea     dx,m2
        mov     ah,09h
        int     21h
        dec     si
        mov     ch,05h

loop3:mov dl,[si]
        cmp     dl,09h
        jbe     skip2
        add     dl,07h

skip2:add   dl,30h

        mov     ah,02h
        int     21h
        dec     si
        dec     ch
        jnz     loop3

        ret
    ENDP

    BCDTOHEX PROC

        lea     dx,m3
        mov     ah,09h
        int     21h
        mov     bx,0000h
        lea     si,count
        mov     dl,05h
        mov     [si],dl

loop4:mov ah,01h
        int 21h

        cmp     al,39h
        jbe     skip3
        sub     al,07h
```

```
    skip3:sub  al,30h
        mov    ah,00h
        mul    num1
        add    bx,ax
        mov    dx,0000h
        mov    ax,num1
        div    num2
        mov    num1,ax
        dec    count
        jnz    loop4

        lea    dx,m4
        mov    ah,09h
        int    21h
        mov    ch,04h

    loop5:mov cl,04h
        rol    bx,cl
        mov    num3,bx
        and    bx,000Fh
        cmp    bl,09h
        jbe    skip4
        add    bl,07h

    skip4:add  bl,30h
        mov    dl,bl
        mov    ah,02h
        int    21h
        mov    bx,num3
        dec    ch
        jnz    loop5

        ret
      ENDP
END
```