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Thread: [\[emu8086\] Hex to dec](#)

pr0gr4mer - February 26, 2011, 11:17 am

I'm using emu8086 emulator and trying to convert 2 digit hex number to dec but can't figure out how to print it.

For example I have hex = AB, so $A * 16 + B$ ($A=10$, $B=11$). But the result is in hex. Any example how can I print it in dec ?

Here is what I've done already:

Code #MAKE_EXE#

```
DSEG  SEGMENT 'DATA'
```

```
    MSG DB 'Insert 2 digit HEX number: $'
```

```
    MSG2 DB 'Wrong number $'
```

```
    MSG3 DB 'Hex Number = $'
```

```
    MSG4 DB 'Dec number = $'
```

```
DSEG  ENDS
```

```
SSEG  SEGMENT STACK 'STACK'
```

```
    DW  100h DUP(?) ;stack segmentas
```

```
SSEG  ENDS
```

```
CSEG  SEGMENT 'CODE' ;kodo segmento pradzia
```

```
*****
```

```
START PROC FAR ;proceduros START pradzia
```

```
; issaugome grizimo adresa OS:
```

```
    PUSH DS
```

```
    MOV AX, 0
```

```
    PUSH AX
```

```
; set segment registers:
```

```
    MOV AX, DSEG
```

```
    MOV DS, AX ;inicializuojame segmento registra DS
```

```
    MOV AH, 09h
```

```
    MOV DX, OFFSET MSG
```

```
    INT 21h
```

```
    XOR AX, AX ;isvalome registra ax
```

```
    MOV AH, 1H ;irasome 1h i ah
```

```
    INT 21H ;21h pertraukimo generavimas
```

```
    MOV DL, AL ;al turini kopijuojame i dl
```

```
    CMP DL, 47H
```

```
    JGE M3
```

```

SUB DL,30H      ;apskaiciuojame skirtuma (dl)=(dl)-30h
CMP DL,9H       ;lyginame (dl) su 9h
JLE M1          ;jeigu dl<=9h, persukti prie zymes M1
SUB DL,7H       ;apskaiciuojame skirtuma (dl)=(dl)-7h
M1:             ;zymes M1 paskelbimas
MOV CL,4H       ;4h irasome i registra cl
SHL DL,CL       ;registro dl turini perstumiamo per 4 bitus i kaire
INT 21H
CMP AL,47H
JGE M5
SUB AL,30H      ;apskaiciuojame skirtuma (al)=(al)-30h
CMP AL,9H       ;lyginame (al) su 9h
JLE RESULT     ;jeigu al<=9h, persukti prie zymes M2
SUB AL,7H       ;apskaiciuojame skirtuma (al)=(al)-7h
RESULT:         ;zymes M2 paskelbima
ADD DL,AL       ;sudedame (dl)=(dl)+(al)
MOV BL,DL
MOV DH,2H       ;perkeliam kursoriu i kita eilute
XOR DL,DL       ;
MOV AH,02H      ;
INT 10H

```

```

MOV AX, DSEG      ;
MOV DS, AX        ;
MOV AH,09h        ; isspausdinu MSG3
MOV DX, OFFSET MSG3 ;
INT 21h           ;

```

```

MOV DL,BL         ;
MOV CL,4H         ;
SHR DL,CL         ;
CMP DL,0AH        ; Pirmas skaicius
JGE RAIDE         ;
ADD DL,30H        ;
MOV AH,02H        ;
INT 21h           ;

```

```

SK2:
MOV BH,1H
MOV DL,BL         ;
MOV CL,4H         ;
SHL DL,CL         ;
SHR DL,CL         ;
CMP DL,0AH        ;
JGE RAIDE         ; Antras skaicius
ADD DL,30H        ;
MOV AH,02H        ;
INT 21h           ;
JMP DEC

```

```

RAIDE:
ADD DL,37H
MOV AH,02H
INT 21h

```

```
CMP BH,1H
JNE SK2
```

DEC:

```
MOV DH,4H ;perkeliam kursoriu i kita eilute
XOR DL,DL ;
MOV AH,02H
DEC BH ;
INT 10H
```

```
MOV AX, DSEG ;
MOV DS, AX ;
MOV AH,09h ; isspausdinu MSG4
MOV DX, OFFSET MSG4 ;
INT 21h
```

```
MOV DL,BL ;
MOV CL,4H ;
SHR DL,CL ;
CMP DL,0AH ; Pirmas skaicius
JGE RAIDE2
```

```
.....
;
; Here must be the code
;
```

```
ret
```

RAIDE2:

```
ADD DL,37H
MOV AH,02H
INT 21h
ret
```

M3:

```
CMP DL,60H
JLE M4
CMP DL,67H
JGE M4
SUB DL,50H ;apskaiciuojame skirtuma (dl)=(dl)-50h
CMP DL,9H ;lyginame (dl) su 9h
JLE M1 ;jeigu dl<=9h, persukti prie zymes M1
SUB DL,7H ;apskaiciuojame skirtuma (dl)=(dl)-7h
JMP M1
```

M4: ;ERROR spausdinimas

```
;perkeliu kursoriu per 2 eilutes
MOV DH,2H
XOR DL,DL
MOV AH,02H
```

```

INT 10H
; Isspausdinu teksta
MOV AX, DSEG
MOV DS, AX ;inicializuojame segmento regsitra DS
MOV AH,09h
MOV DX, OFFSET MSG2
INT 21h
RET
M5:
CMP AL,61H
JLE M4
CMP AL,67H
JGE M4
SUB AL,50H ;apskaiciuojame skirtuma (al)=(al)-30h
CMP AL,9H ;lyginame (al) su 9h
JLE RESULT ;jeigu al<=9h, persokti prie zymes M2
SUB AL,7H ;apskaiciuojame skirtuma (al)=(al)-7h
JMP RESULT

```

```

START ENDP ;proceduros START pabaiga

```

```

;*****
,

```

```

CSEG ENDS ;kodo segmento pabaiga

```

```

END START

```

Sorry for messed code and for comments (its in lithuania language)