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1. Write an assembly language program to take a four digits hexadecimal number and convert that hexadecimal number to the binary number.

CODE:-

```
.model small
.stack 100h
.data
countOne db ?
countZero db ?
nln db 0ah,0dh,'$'
msg1 db 'Number of Ones: $'
msg2 db 0ah,0dh,'Number of Twos: $'
.code
main proc
mov ax,@data
mov ds,ax
mov countOne,30h
mov countZero,30h
mov ah,1
int 21h
mov bl,al
cmp bl,65
jge hex
sub bl,48
jmp doit:
hex:
sub bl,55
doit:
mov ah,9
lea dx,nln
int 21h
mov cl,0
rotate:
rol bl,1
jnc zero
jc one
zero:
inc countZero
cmp cl,4
jl do1
```

```
mov ah,2
mov dl,'0'
int 21h
do1:
jmp looper
one:
inc countOne
cmp cl,4
jl do2
mov ah,2
mov dl,'1'
int 21h
do2:
jmp looper
looper:
inc cl
cmp cl,8
jl rotate
finish:
mov ah,9
lea dx,nln
int 21h
mov ah,09
lea dx,msg1
int 21h
mov dl,countOne
mov ah,2
int 21h
mov ah,09
lea dx,msg2
int 21h
mov ah,2
mov dl,countZero
int 21h
main endp
end main
```