



ATHARVA YADAV

ROLL NO : 127

BATCH : S23

## MPL ASSIGNMENT NO.8

**AIM: TO COUNT NUMBER OF 1S AND NUMBER OF 0S IN A GIVEN 8-BIT NUMBER**

DATA\_SEG **SEGMENT**

NUM **DB** 89H  
ZEROES **DB** 0 ONES  
**DB** 0

DATA\_SEG **ENDS**

CODE\_SEG **SEGMENT**

**ASSUME** CS:CODE\_SEG , DS:DATA\_SEG

START:

**MOV** AX , DATA\_SEG ;INITIALIZE THE DATA SEG  
**MOV** DS,AX

**MOV** CX , 8

**MOV** AL , NUM ;SHIFT THE NUMBER TO AL

AGAIN :

**ROR** AL , 1 ;ROTATE AL

**JC** BIT1 ;JUMP TO BIT 1

**INC** ZEROES ;INCREASE THE ZEROES

**JMP** NEXT ;JUMP TO NEXT

BIT1: **INC** ONES ;INCREAMENT THE ONES

NEXT:

**LOOP** AGAIN ;LOOP TO AGAIN

**MOV** AH ,4CH ;EXIT TO DOS

**INT** 21H

CODE\_SEG **ENDS**

**END** START

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[ ]=Regs=3=[ ] G ;I I

ax	0089	c=1
bx	0000	z=0
cx	0000	s=0
dx	0000	o=0
si	0000	p=1 ;SHIF
di	0000	a=0
bp	0000	i=1 ;ROTA
sp	0000	d=0 ;JUMP
ds	007C	;INCR
es	006C	;JUMP
ss	007B	;INCR
cs	007D	
ip	001C	;LOO

IT TO DO

Variables

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num	'ë'	137 (89h)
zeroes	'♣'	5 (05h)
ones	'♥'	3 (03h)
start	@007D:	0000
again	@007D:	000B
bit1	@007D:	0016

CODE\_SEG ENDS

Watches

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