

	Experiment Mo 1 Date:
	Roll No: S077
	Ain: To perform anithmetic operation on 8 bit data
	Theory:
A	
(Under arithmetic operation 8086 provider
	addition, subtraction, Multiplication and Division.
	There all operations are performed on the operand
	(clata)
,	
<u>J</u>	Addition
. 3	ADD - Add byte or word.
	- This instruction adds a number from source and.
6	puts the result to specific destination.
	Program 1: Addition of two 8-bit numbers
->	Algorithm:
,	Step 1 Initialize the data segment
	Step 2 Get the first number in Ax register
	Step 3 Get the second number in Bx register
	step 4 Add two numbers
	Step 5 Stop
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Arithmetic

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State of the state of the state of the	4 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 - 7 -	
	$\int_{\mathbb{R}^{n}} d_{k} f$	
Subtraction	Multiplication	Division
SUB	MUL	DIV
SBB	IMUL	IDIV
DEC TOTAL	AAM	MAD
moderally MEG	ilunation, ast	CBW
· Land CMP	ring y · W ·	CWD
DAS	4 7	
AAS		
	Subtraction Sub SBB DEC MP DAS	SUB MUL SBB IMUL DEC AND AAM COMP DAS

Flowchart :

Get the first number

Get the Second number

Add the two numbers

Stop

Otpot: C: >> tasm Filename . asm C: >> tlink Filename . obj

04

(2)

→	Program	Connects
	3	
*	· model small	
	·data	
	a db 02H	
	b db 02H	
	· code	
	Mov ax, @data	; Initialize data section
	Mov ds, ax	
	Mov al, a	; Load number 1 in al
	Mov 61, 6	
-	Mov ch, OzH	
	Mov C1, 04H	
	Mov bb, al	
	I2: 801 bh, cl	
	mor al, bh	
	and al, of H	
	comp d1, 09H	
	jbe 74	
	450 1/6 bbb	
	I4: add d1, 30H	
	Mov ah, DOH	
	int 21H	
	dec ch	
	jos Jz	
	Mov ah. 4CH	
	int 21H	
	end	
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-> flowchart

Start

V

Cot the First number

V

Cot the Second number

Subtract two numbers

Stop

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C:/> tasm filename asm C: /> tlink filename obj C: /> filename

111 : 12

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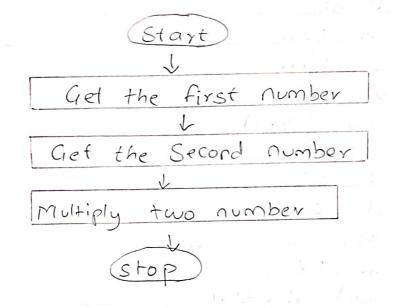
٦-	Subtraction
	OOBITACHON
	SUB - Sub byte or word
	- This instruction subtract a number from source
	to number from destination and puts the
	result to specific destination
7	Mnemonic: SUB Destination. Source
	SUB Operand 1. Operand 2
	Program 1: Subtraction of two 8 bit number
-)	Algorithm
	Stepl: Initialize the data segment
	Step 2: Get the First number in AL register
	Step 3: Get the second number in BL register
	Step 4: Subtract the two numbers
	step 5: Display the result
	step 6: Stop.
_\	
	· model small · data
	a db 02 H
	b ob 02 H
×	· Code
	Mou ax. @data
	mou ds. ax
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	Mou al, a
	Mou bl, b
	sub al, bl
	Mov ch, ozh
	Mov. cl, 04h
	mon pp al
	J2: rol bb, cl
	Mov al, bh
	and all, OFH
	cmp d1,09
	jbe 14
	add d1,07
	In: add d1, 30H
	Mou ah, ozh
	int 21H
	dec ch
	jaz Iz
3	Mou ab, 4CH
)	int 21H end
	EVIO.
27	Multiplication
9	TOTAL STATE OF THE
	- This instruction multiplies and unsigned byte
A	From source with an byte in AL register or
	an unsigned word from source with an unsigned
	word in Ax.
- 11	FOR FRUGATIONAL LIST

-> Flowchart



-> Out put

C: >> Éasm filename. asm C: >> Élink filename. Obj C: >> Filename

	- when a byte is multiplied by contents of AL.
	the result is stored in Ax.
	- The MBS of result is doved in AH register
	and the LSB of result is stored in AL
	register.
	DI 3
	Program: Multiplication of two Bbits number
(3)	Algorithm:
7	17190711117
	Stepl: Initialize the data segment
	step 2: Store First number in al register
	Step 3: Store Second number in bl register
	Step 4: Multiply truo number
	Step 5: Display result
	step 6: stop
	2-221
•	· model small
<u>フ</u>	a db OzH
	bdb 02H
	o Code
	Mov ax, @data
	mou de, ax
<u>^</u>	Mov ax, 0000H
	Mou al, a
	Mov bl, b
	MUI 61
4	
l l	

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Start

Get the first number

Cret the Second number

V

Divide two numbers

Stop

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- 1 12h 2 h 12h

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6

Mov ch, O2H
Movel, DHH
Mou bh, al
Tz: nol bhich
Mov d1, bh
And diroft
Cmp d1, 09
jbe 74
Add di, DTH
T4: add a1, 30H
Mor ah, O2H
int 21H
dec ch
jaz I2
mov ah, Heh 4ch
int 21H
end
Division
- This instruction divider an unsigned byte From
Source with an byte in the Az register or an
unsigned word from source with an unsigned
word in Ax.
- when a byte is divided the result is stored
in Ax.

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-> output

C: >> tasm filename. asm

C: >> tlink filename. obj

c: >> Filename

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1.12 / 10 1 2

B'- I- same

1.4

ng distinct a significant

\rightarrow	Mnemonic: Dw multiplier
	Program: Division of & bit numbers
	DIVISION DI ABOUT DE LA CONTRACTOR DE LA
->	Algorithm
	Step1: Initialise the data segment
	Step 2: Store First number in al register
	Step 3: Store Second number in bl register
	skp4: Pivide the two numbers
	Step 5: Display result
	Step 6: Stop
	5.00
_	-Model small
	· data
	a al 08 H
	b d1 02H
	· Code
	Mou ax, @ data
	Mov ds 1 ax
ii.	Mov ax, 0000H
	Mou alia
	mou bl, b
1	div bl
	MOV ch, 02 H
	MOV C1, 04 H
	Mov bh, al

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	Iz: rol bb, al
	Mov dl, bh
	and dl, OFH
	cmp 01,09
	ibe I4
	add dl, 07H
	14: add d1, 30H
D	Mov ah, O2H
	int 21H
	dec ch
	joz I2
	mov ah, uch
	int 21 H
	end
	Conclusion: Hence, we performed arithmetic
	Orperation on 8 bit data.
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