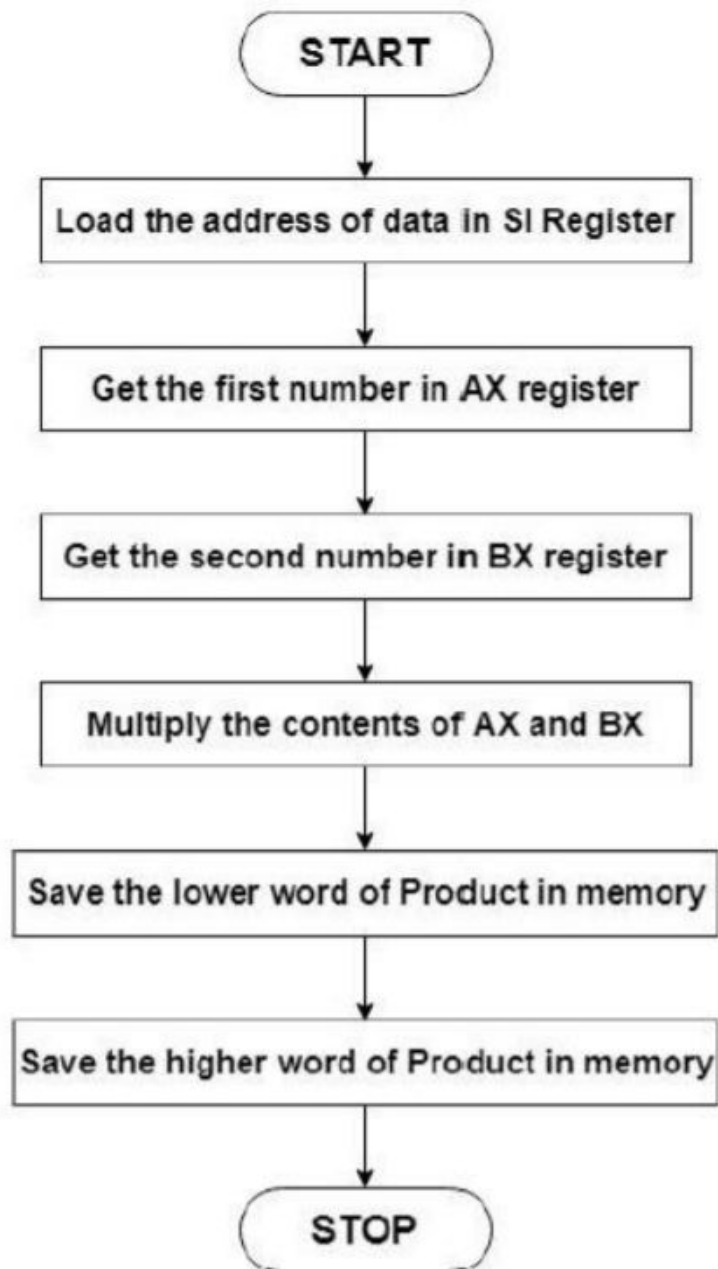


Experiment-2

Aim: Multiplication of two 16-bit numbers.

Algorithm:



Program:

```
; You may customize this and other start-up templates;  
; The location of this template is c:\emu8086\inc\0_com_template.txt  
  
org 100h  
  
; add your code here  
mov si, 1000h  
mov ax, [si]  
mov bx, [si+2]  
mul bx  
mov [si+4], ax  
mov [si+6], dx  
hlt
```

Observation:

Random Access Memory

0700:0100 update table list

Address	Hex	ASCII
0700:0100	BE 00 10 8B 04 8B 5C 02-F7 E3 89 44 04 89 54 06	JMP 02-F7
0700:0110	F4 C3 90 90 90 90 90 90 90 90 90 90 90 90 90	CCCCCCCCCCCC
0700:0120	90 90 90 90 90 90 F4 00-00 00 00 00 00 00 00	CCCCCCCC
0700:0130	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....
0700:0140	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....
0700:0150	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....
0700:0160	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....
0700:0170	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....

emulator: MPL_2.com

file math debug view external virtual devices virtual drive help

Load reload step back single step run step delay ms: 0

registers

Register	H	L
AX	00	00
BX	00	00
CX	00	12
DX	00	00
CS	0700	
IP	0100	
SS	0700	
SP	FFFE	
BP	0000	
SI	0000	
DI	0000	
DS	0700	
ES	0700	

0700:0100 0700:0100

Address	Hex	Disassembly
07100: BE 190	J	MOV SI, 01000h
07101: 00 000	NULL	MOV AX, [SI]
07102: 10 016		MOV BX, [SI] + 02h
07103: 8B 139	I	MUL BX
07104: 04 004	♦	MOV [SI] + 04h, AX
07105: 8B 139	I	MOV [SI] + 06h, DX
07106: 5C 092	\	HLT
07107: 02 002	0	RET
07108: F7 247	≈	NOP
07109: E3 227	Π	NOP
0710A: 89 137	ε	NOP
0710B: 44 068	D	NOP
0710C: 04 004	♦	NOP
0710D: 89 137	ε	NOP
0710E: 54 084	T	NOP
0710F: 06 006	♣	NOP
07110: F4 244	f	NOP
07111: C3 195	†	NOP
07112: 90 144	E	NOP
07113: 90 144	E	NOP
07114: 90 144	E	NOP
07115: 90 144	E	NOP

original source c...

```
01 ; You may customize this  
02 ; The location of this t  
03  
04  
05 org 100h  
06  
07 ; add your code here  
08 mov si, 1000h  
09 mov ax, [si]  
10 mov bx, [si+2]  
11 mul bx  
12 mov [si+4], ax  
13 mov [si+6], dx  
14 hlt  
15  
16  
17  
18  
19  
20
```

Random Access Memory

0100:1000

update

table

list

0100:1000	EF 3A 2F CD E1 34 3C 2F-00 00 00 00 00 00 00 00	n:=04</.....
0100:1010	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....
0100:1020	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....
0100:1030	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....
0100:1040	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....
0100:1050	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....
0100:1060	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....
0100:1070	00 00 00 00 00 00 00 00-00 00 00 00 00 00 00	.....

emulator: noname.bin_

file

math

debug

view

external

virtual devices

virtual drive

help

Load

reload

step back

single step

run

step delay ms: 0

registers

H	L
AX	34 E1
BX	CD 2F
CX	00 00
DX	2F 3C
CS	0100
IP	0010
SS	0100
SP	FFFE
BP	0000
SI	1000
DI	0000
DS	0100
ES	0100

0100:0010

01000: BE 190 J

01001: 00 000 NULL

01002: 10 016

01003: 8B 139 i

01004: 04 004

01005: 8B 139 i

01006: 5C 092 \

01007: 02 002

01008: F7 247 ≈

01009: E3 227 R

0100A: 89 137 e

0100B: 44 068 D

0100C: 04 004

0100D: 89 137 e

0100E: 54 084 I

0100F: 06 006 +

01010: F4 244 r

01011: 90 144 e

01012: 90 144 e

01013: 90 144 e

01014: 90 144 e

01015: 90 144 e

MOV SI, 01000h

MOV AX, [SI]

MOV BX, [SI] + 02h

MUL BX

MOV [SI] + 04h, AX

MOV [SI] + 06h, DX

HLT

NOP

NOP

NOP

NOP

NOP

NOP

NOP

NOP

NOP

NOP

NOP

NOP

...

original source co...

```

01 nov si, 1000h
02 nov ax, [si]
03 nov bx, [si+2]
04 mul bx
05 nov [si+4], ax
06 nov [si+6], dx
07 hlt
08
09

```

(Arkajyoti Chakraborty 2k19/EP/022)