Microprocessor and Interfacing (Assignment No. 1)

Question-1:

Execute the assembly program for the following two arrays, add first 4 numbers of array1 with array2 and subtract 5th to 8th elements and place all data in array3 Array1: 1 2 5 9 6 8 7 3 Array2: 2 3 9 2 5 7 9 1 Array3: 0 0 0 0 0 0 0 0 Solution

SOURCE CODE:

```
org 100h
MOV BP, offset Arr1
MOV SI , offset Arr2
MOV DI, offset Arr3
MOV CX,4
L1:
MOV BL,[BP]
MOV AL,[SI]
ADD BL,AL
MOV [DI],BL
INC SI
INC DI
INC BP
loop L1
MOV CX,4
L2:
MOV BL,[BP]
```

MOV AL,[SI]

SUB BL,AL

MOV [DI],BL

INC SI

INC DI

INC B

loop L2

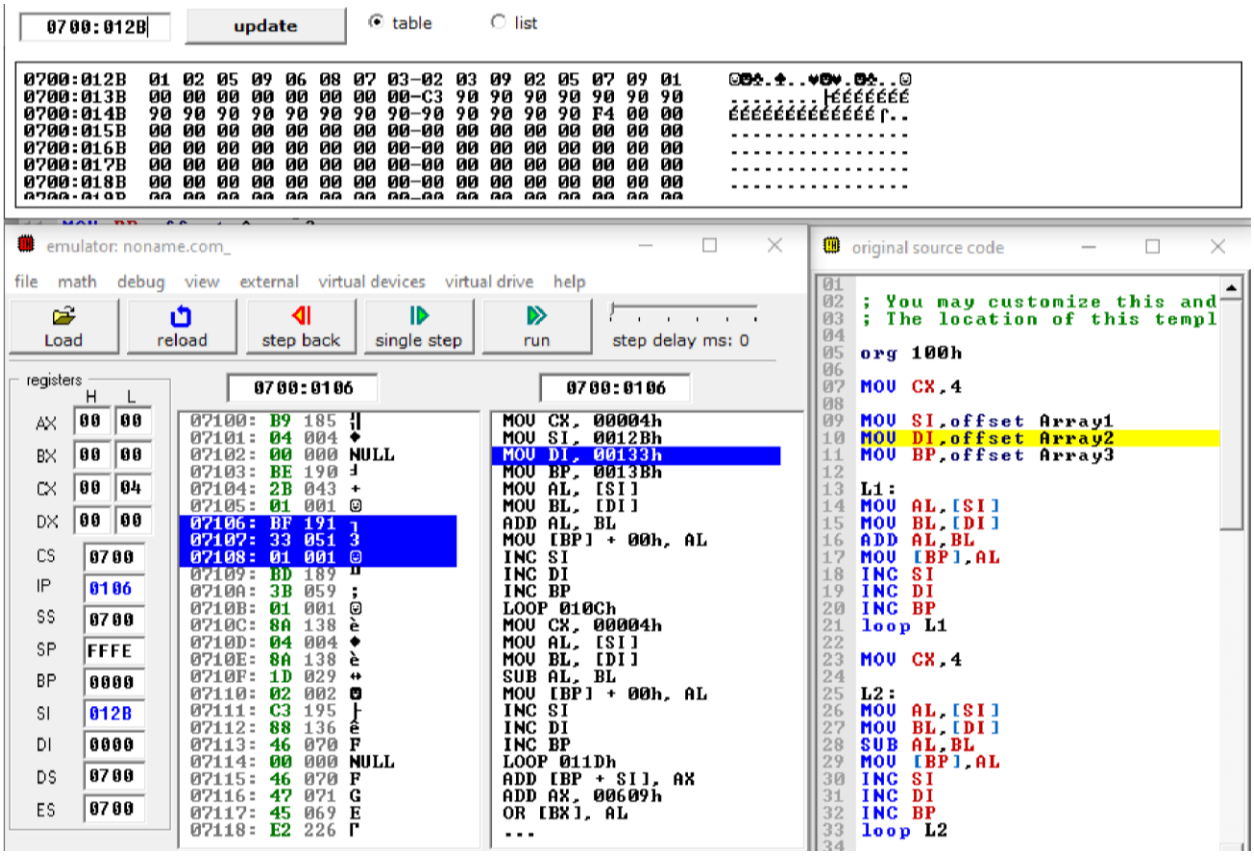
Arr1 DB 1,2,5,9,6,8,7,3

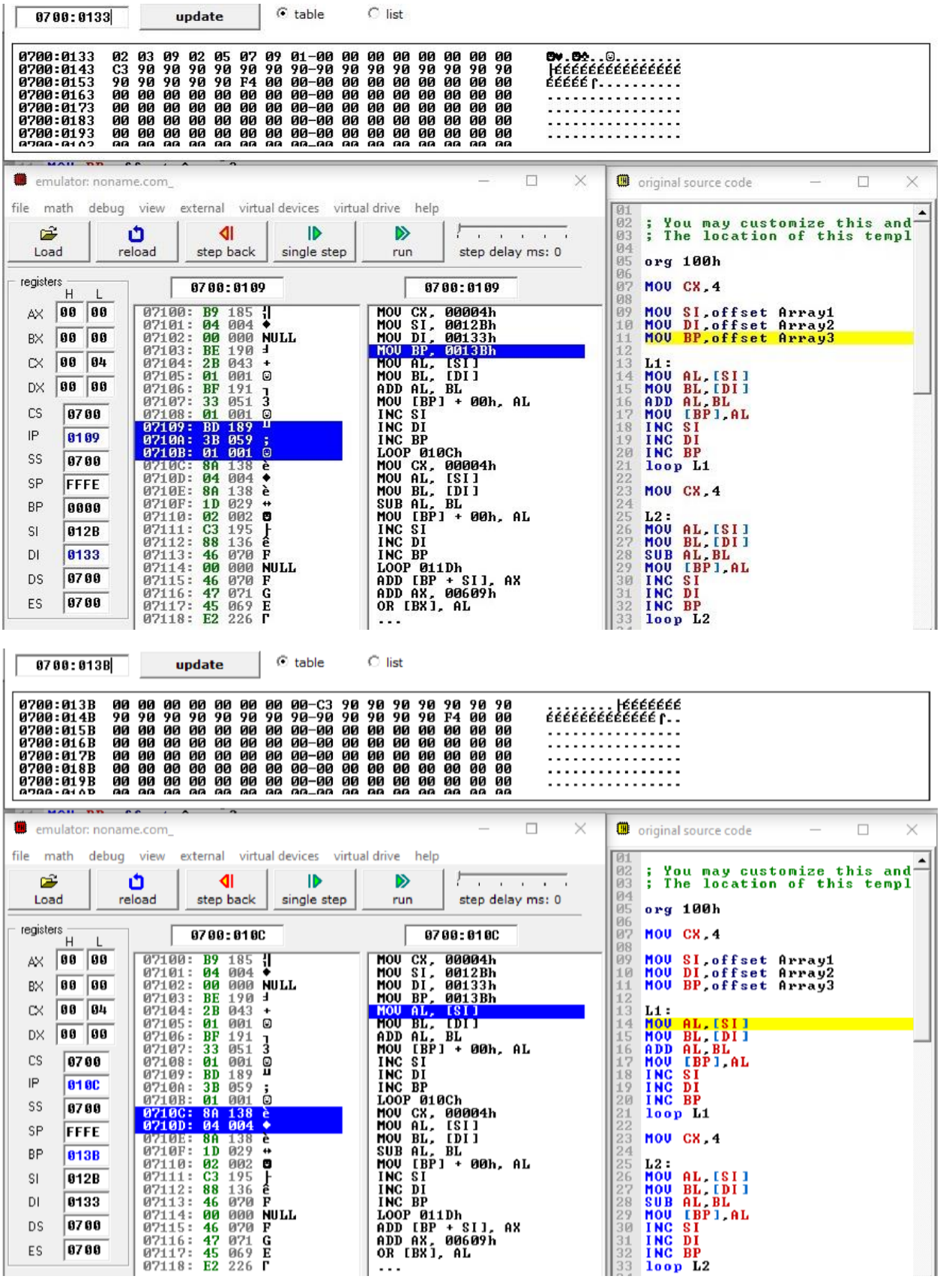
Arr2 DB 2,3,9,2,5,7,9,1

Arr3 DB 0,0,0,0,0,0,0,0

Ret

OUTPUT:




0700:0133
update
table
list
0700:0133 02 03 09 02 05 07 09 01-00 00 00 00 00 00 00 00
0700:0143 C3 90 90 90 90 90 90 90-90 90 90 90 90 90 90 90
0700:0153 90 90 90 90 90 F4 00 00-00 00 00 00 00 00 00 00
0700:0163 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0700:0173 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0700:0183 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0700:0193 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
emulator: noname.com_
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 00 00
BX 00 00
CX 00 04
DX 00 00
CS 0700
IP 0109
SS 0700
SP FFFE
BP 0000
SI 012B
DI 0133
DS 0700
ES 0700
0700:0109
0700:0109
07100: B9 185
07101: 04 004
07102: 00 000 NULL
07103: BE 190
07104: 2B 043 +
07105: 01 001
07106: BF 191
07107: 33 051 3
07108: 01 001
07109: BD 189
0710A: 3B 059 ;
0710B: 01 001
0710C: 8A 138
0710D: 04 004
0710E: 8A 138
0710F: 1D 029
07110: 02 002
07111: C3 195
07112: 88 136
07113: 46 070 F
07114: 00 000 NULL
07115: 46 070 F
07116: 47 071 G
07117: 45 069 E
07118: E2 226
MOV CX, 00004h
MOV SI, 0012Bh
MOV DI, 00133h
MOV BP, 0013Bh
MOV AL, [SI]
MOV BL, [DI]
ADD AL, BL
MOV [BP] + 00h, AL
INC SI
INC DI
INC BP
LOOP 010Ch
MOV CX, 00004h
MOV AL, [SI]
MOV BL, [DI]
SUB AL, BL
MOV [BP] + 00h, AL
INC SI
INC DI
INC BP
LOOP 011Dh
ADD [BP + SI], AX
ADD AX, 00609h
OR [BX], AL
...
original source code
; You may customize this and
; The location of this templ
org 100h
MOV CX,4
MOV SI,offset Array1
MOV DI,offset Array2
MOV BP,offset Array3
L1:
MOV AL,[SI]
MOV BL,[DI]
ADD AL,BL
MOV [BP],AL
INC SI
INC DI
INC BP
loop L1
MOV CX,4
L2:
MOV AL,[SI]
MOV BL,[DI]
SUB AL,BL
MOV [BP],AL
INC SI
INC DI
INC BP
loop L2
0700:013B
update
table
list
0700:013B 00 00 00 00 00 00 00 00-C3 90 90 90 90 90 90 90
0700:014B 90 90 90 90 90 90 90 90-90 90 90 90 90 F4 00 00
0700:015B 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0700:016B 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0700:017B 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0700:018B 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
0700:019B 00 00 00 00 00 00 00 00-00 00 00 00 00 00 00 00
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registers
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BX 00 00
CX 00 04
DX 00 00
CS 0700
IP 010C
SS 0700
SP FFFE
BP 013B
SI 012B
DI 0133
DS 0700
ES 0700
0700:010C
0700:010C
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07106: BF 191
07107: 33 051 3
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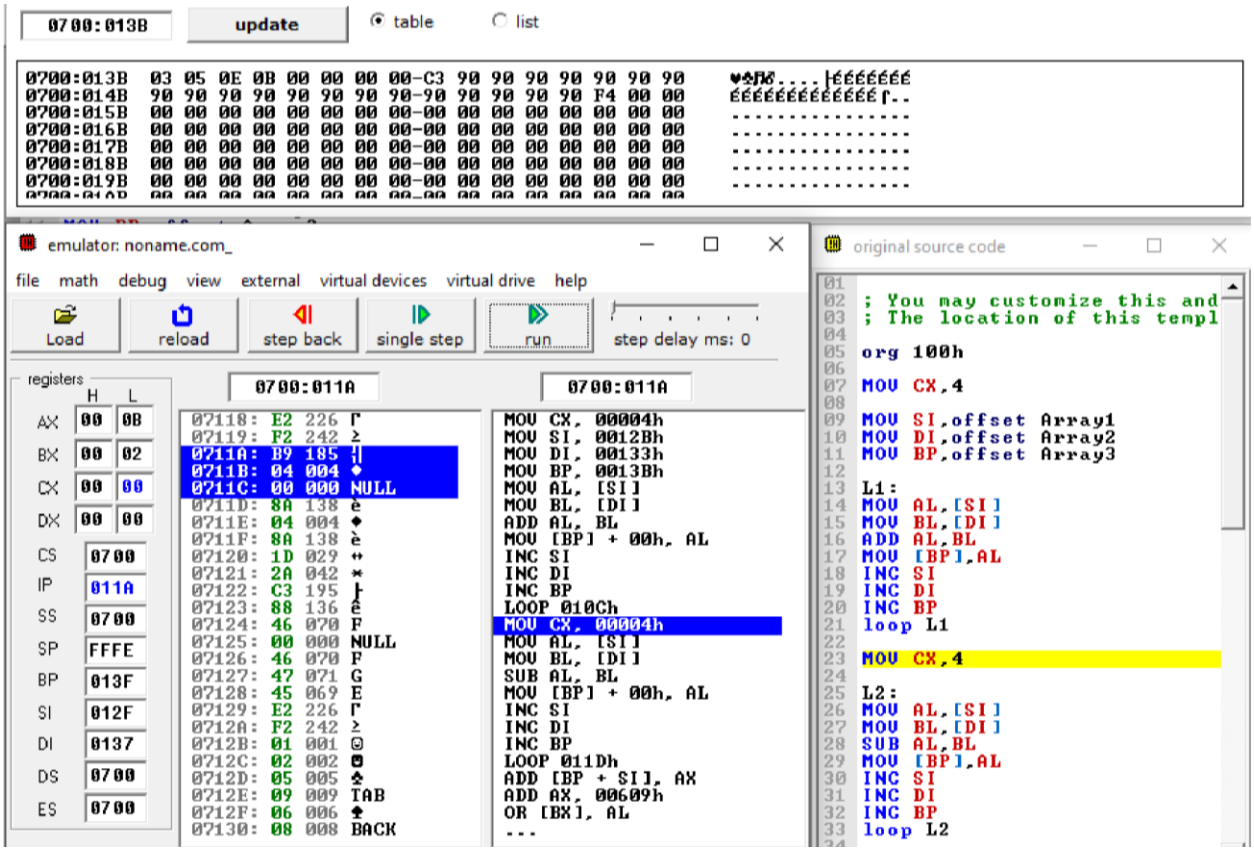
SUB AL,BL
MOV [BP],AL
INC SI
INC DI
INC BP
loop L2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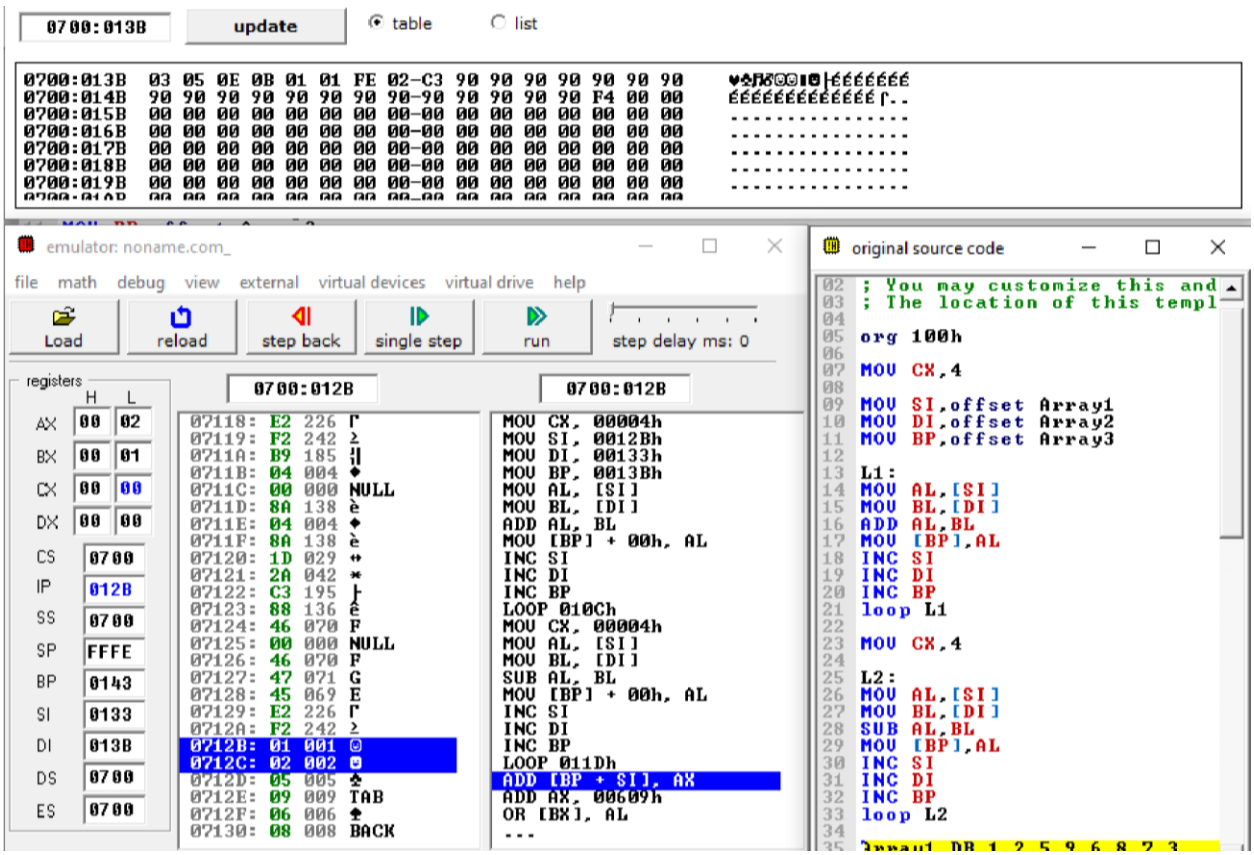
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