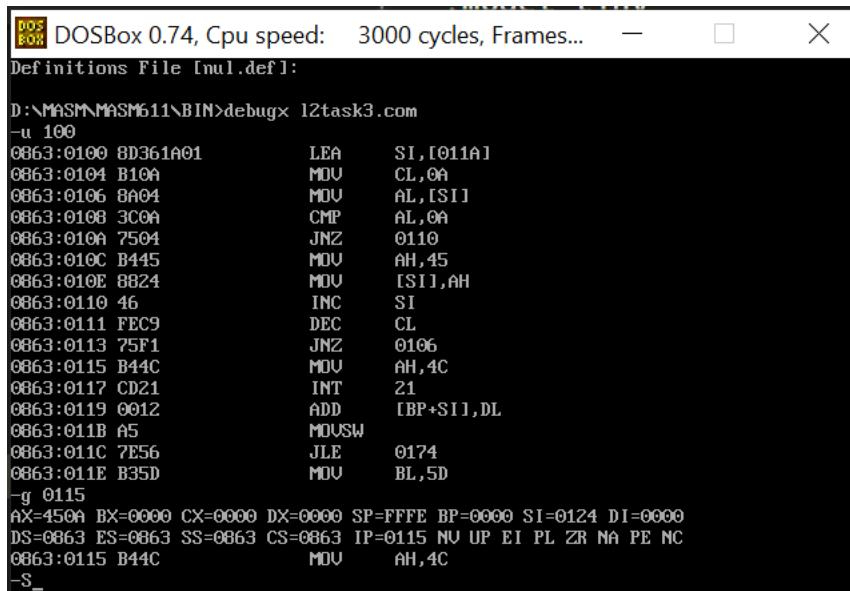


TASK 3

```
[19] l2task3.asm
1 .model tiny
2 .data
3 array1 db 12h, 0a5h, 7eh, 56h, 0b3h, 5dh, 90h, 1fh, 85h, 0ah
4 .code
5 .startup
6     lea si, array1
7     mov cl, 10
8 x2: mov al, [si]
9     cmp al, 0ah
10    jne x1
11    mov ah, 'E'
12    mov [si], ah
13 x1: inc si
14    dec cl
15    jnz x2
16 .exit
17 end
```

ARRAY IS STORED IN LOCATION DS:011AH



DOSBox 0.74, Cpu speed: 3000 cycles, Frames...

Definitions File [nul.def]:

```
D:\MASM\MASM611\BIN>debugx l2task3.com
-u 100
0863:0100 8D361A01      LEA     SI,[011AH]
0863:0104 B10A          MOV     CL,0A
0863:0106 8A04          MOV     AL,SI
0863:0108 3C0A          CMP     AL,0A
0863:010A 7504          JNZ    0110
0863:010C B445          MOV     AH,45
0863:010E 8824          MOV     [SI],AH
0863:0110 46             INC    SI
0863:0111 FEC9          DEC    CL
0863:0113 75F1          JNZ    0106
0863:0115 B44C          MOV     AH,4C
0863:0117 CD21          INT    21
0863:0119 0012          ADD    [BP+SI],DL
0863:011B A5             MOVSW
0863:011C 7E56          JLE    0174
0863:011E B35D          MOV    BL,5D
-g 0115
AX=450A BX=0000 CX=0000 DX=0000 SP=FFF E BP=0000 SI=0124 DI=0000
DS=0863 ES=0863 SS=0863 CS=0863 IP=0115 NV UP EI PL ZR NA PE NC
0863:0115 B44C          MOV    AH,4C
-S-
```

DATA AFTER '85H' HAS BEEN RELPACED BY '45H' (= E) WHICH WAS '0AH' EARLIER

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frames... — □ ×  
0863:010E 8824    MOU    [SI],AH  
0863:0110 46    INC    SI  
0863:0111 FEC9    DEC    CL  
0863:0113 75F1    JNZ    0106  
0863:0115 B44C    MOU    AH,4C  
0863:0117 CD21    INT    21  
0863:0119 0012    ADD    [BP+SI],DL  
0863:011B A5    MOUSW  
0863:011C 7E56    JLE    0174  
0863:011E B35D    MOU    BL,5D  
-g 0115  
AX=450A BX=0000 CX=0000 DX=0000 SP=FFFF BP=0000 SI=0124 DI=0000  
DS=0863 ES=0863 SS=0863 CS=0863 IP=0115 NV UP EI PL ZR NA PE NC  
0863:0115 B44C    MOU    AH,4C  
-d ds:011a  
0863:0110          -       12 A5 ?E 56 B3 5D    ..~U.]  
0863:0120 90 1F 85 45 2C 50 FF 76-06 B8 F9 09 BA 2D 15 52 ...E,P.v.....-R  
0863:0130 50 1E 07 9A 42 07 5A 02-8B E5 5D CB 55 8B EC FF P...B.Z...I.U...  
0863:0140 76 06 9A 2D 14 EF 06 8B-E5 5D CB 55 8B EC 83 3E v..-....I.U...>  
0863:0150 06 57 02 73 13 8A 46 08-2A E4 50 FF 76 06 9A 0E .W.s..F.*.P.v...  
0863:0160 00 DB 09 83 C4 04 EB 30-8B 76 06 8A 04 22 C0 74 .....0.v...".t  
0863:0170 25 2A E4 50 0E E8 F4 00-83 C4 02 23 C0 74 05 FF 2*P.....#.t..  
0863:0180 46 06 EB 0D 8B 76 06 8A-04 3A 46 08 75 03 96 EB F....v...:F.u...  
0863:0190 07 FF 46 06 EB D2 2B C0-5D CB    ..F....+..l.  
-S
```

TASK 4

```
[10] l2task4.asm
1   .model tiny
2   .data
3   array1 dw 5e7fh, 1234h, 95abh, 0f437h, 3a89h
4   count db 5
5   neg1 db ?
6   .code
7   .startup
8       lea si,array1
9       mov cl,count
10      mov ch,00
11  x2: mov ax,[si]
12      rol ax,1
13      jnc x1
14      inc ch
15  x1: inc si
16      dec cl
17      jnz x2
18      mov neg1,ch
19  .exit
20  end
```

ARRAY IS STORED IN LOCATION DS:0120H AND COUNT OF NEG. NOS IS STORED IN DS:012B

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frames... — ×
0863:013D BBEC      MOV     BP,SP
0863:013F FF7606    PUSH    WORD PTR [BP+06]
-q
0:NASM\MASM611\BIN>debugx l2task4.com
-u 100
0863:0100 8D362001  LEA     SI,[0120]
0863:0104 8A0E2A01  MOV     CL,[012A]
0863:0108 B500      MOV     CH,00
0863:010A 8B04      MOV     AX,[SI]
0863:010C D1C0      ROL     AX,1
0863:010E 7302      JAE     0112
0863:0110 FEC5      INC     CH
0863:0112 46       INC     SI
0863:0113 FEC9      DEC     CL
0863:0115 75F3      JNZ     010A
0863:0117 882E2B01  MOV     [012B],CH
0863:011B B44C      MOV     AH,4C
0863:011D CD21      INT     21
0863:011F 007F5E    ADD     [BX+5E],BH
-g 011b
AX=2B57 BX=0000 CX=0200 DX=0000 SP=FFFFE BP=0000 SI=0125 DI=0000
DS=0863 ES=0863 SS=0863 CS=0863 IP=011B NV UP EI PL ZR NA PE CY
0863:011B B44C      MOV     AH,4C
-S_
```

(DS:012BH) HAS COUNT OF 02H, AS ARRAY1 HAD 2 NEG. NOS

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frames... — ×
0863:010C D1C0      ROL     AX,1
0863:010E 7302      JAE     0112
0863:0110 FEC5      INC     CH
0863:0112 46       INC     SI
0863:0113 FEC9      DEC     CL
0863:0115 75F3      JNZ     010A
0863:0117 882E2B01  MOV     [012B],CH
0863:011B B44C      MOV     AH,4C
0863:011D CD21      INT     21
0863:011F 007F5E    ADD     [BX+5E],BH
-g 011b
AX=2B57 BX=0000 CX=0200 DX=0000 SP=FFFFE BP=0000 SI=0125 DI=0000
DS=0863 ES=0863 SS=0863 CS=0863 IP=011B NV UP EI PL ZR NA PE CY
0863:011B B44C      MOV     AH,4C
-d ds:012b
0863:0120          -      02 BA 2D 15 52 .....R
0863:0130 50 1E 07 9A 42 07 5A 02-8B E5 5D CB 55 8B EC FF P...B.Z...I.U...
0863:0140 76 06 9A 2D 14 EF 06 8B-E5 5D CB 55 8B EC 83 3E v.-.....I.U...>
0863:0150 06 57 02 73 13 8A 46 08-2A E4 50 FF 76 06 9A 0E .W.s..F.*.P.v...
0863:0160 00 DB 09 83 C4 04 EB 30-8B 76 06 8A 04 22 C0 74 .....0.v...".t
0863:0170 25 2A E4 50 0E EB F4 00-83 C4 02 23 C0 74 05 FF %*.P.....#.t..
0863:0180 46 06 EB 0D 8B 76 06 8A-04 3A 46 08 75 03 96 EB F....v...:F.u...
0863:0190 07 FF 46 06 EB D2 2B C0-5D CB 55 8B EC 83 3E 06 ..F...+.I.U...>.
0863:01A0 57 02 73 15 8A 46 0A 2A-E4 50 FF           W.s..F.*.P.
-SS
```

TASK 5

```
[18] I2task5.asm
1 .model tiny
2 .386
3 .data
4 org 0000h
5 array1 dd 11111111h, 22222222h, 33333333h, 44444444h, 55555555h, 66666666h, 77777777h,
88888888h, 99999999h, 0aaaaaaaaah
6 org 0014h
7 array2 dd ?
8 .code
9 .startup
10    lea si, array1
11    lea di, array2
12    add si, 36
13    add di, 36
14    mov cl, 10
15 x1: mov eax, [si]
16    mov [di], eax
17    sub si, 04
18    sub di, 04
19    dec cl
20    jnz x1
21 .exit
22 end
```

ARRAY1 DATA IS STORED AT DS:0124H AND ARRAY2 DATA IS STORED AT DS:0138H

(20d == 14h FROM ARRAY1)

```
D:\MASM\MASM611\BIN>debugx I2task5.com
-u 100
0863:0100 8D362401      LEA     SI,[0124]
0863:0104 8D3E3801      LEA     DI,[0138]
0863:0108 83C624        ADD    SI,+24
0863:010B 83C724        ADD    DI,+24
0863:010E B10A          MOV    CL,0A
0863:0110 668B04        MOV    EAX,[SI]
0863:0113 668905        MOV    [DI],EAX
0863:0116 83EE04        SUB    SI,+04
0863:0119 83EF04        SUB    DI,+04
0863:011C FEC9          DEC    CL
0863:011E 75F0          JNZ    0110
-S-
```

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frames... — □ ×
0863:0113 668905        MOV    [DI],EAX
0863:0116 83EE04        SUB    SI,+04
0863:0119 83EF04        SUB    DI,+04
0863:011C FEC9          DEC    CL
0863:011E 75F0          JNZ    0110
-u
0863:0120 B44C          MOU    AH,4C
0863:0122 CD21          INT    21
0863:0124 1111          ADC    [BX+DI],DX
0863:0126 1111          ADC    [BX+DI],DX
0863:0128 2222          AND    AH,[BP+SI]
0863:012A 2222          AND    AH,[BP+SI]
0863:012C 3333          XOR   SI,[BP+DI]
0863:012E 3333          XOR   SI,[BP+DI]
0863:0130 44             INC    SP
0863:0131 44             INC    SP
0863:0132 44             INC    SP
0863:0133 44             INC    SP
0863:0134 55             PUSH   BP
0863:0135 55             PUSH   BP
0863:0136 55             PUSH   BP
0863:0137 55             PUSH   BP
0863:0138 666666667777  JA    01B5
0863:013E 7777          JA    01B7
-S-
```

STARTING ADDRESS OF ARRAY2 = STARTING ADDRESS OF ARRAY1 + 14h (= 20d)

SOURCE (DS:0124H) DATA HAS BEEN COPIED TO DESTINATION (DS:0138H)

DOSBox 0.74, Cpu speed: 3000 cycles, Frames... — X

EAX=11111111 EBX=00000000 ECX=00000000 EDX=00000000 ESP=0000FFFF EBP=00000000
ESI=00000120 EDI=00000134 EIP=00000120 EFL=00007246 NU UP EI PL ZR MA PE NC
DS=0863 ES=0863 SS=0863 CS=0863 FS=0000 GS=0000
0863:0120 B4C MOV AH,4C
-d ds:0124
0863:0120 11 11 11 11-22 22 22 22 33 33 33 33 "3333
0863:0130 44 44 44 44 55 55 55-55-11 11 11 11 22 22 22 22 DDDDUUUU....."****
0863:0140 33 33 33 33 44 44 44-44-55 55 55 55 66 66 66 66 3333DDDDUUUUffff
0863:0150 77 77 77 77 88 88 88-99 99 99 99 AA AA AA AA wwww.....
0863:0160 00 DB 09 B3 C4 04 EB 30-BB 76 06 8A 04 22 C0 74 0.v....t
0863:0170 25 2A E4 50 0E EB F4 00-83 C4 02 23 C0 74 05 FF %*.P....#.t..
0863:0180 46 06 EB 0D BB 76 06 8A-04 3A 46 08 75 03 96 EB F....v....F.u...
0863:0190 07 FF 46 06 EB D2 2B C0-5D CB 55 8B EC B3 3E 06 ..F...+.J.U...>.
0863:01A0 57 02 73 15 - W.s.
-d ds:0138
0863:0130 -11 11 11 11 22 22 22 22"****
0863:0140 33 33 33 33 44 44 44 44-55 55 55 55 66 66 66 66 3333DDDDUUUUffff
0863:0150 77 77 77 77 88 88 88-99 99 99 99 AA AA AA AA wwww.....
0863:0160 00 DB 09 B3 C4 04 EB 30-BB 76 06 8A 04 22 C0 74 0.v....t
0863:0170 25 2A E4 50 0E EB F4 00-83 C4 02 23 C0 74 05 FF %*.P....#.t..
0863:0180 46 06 EB 0D BB 76 06 8A-04 3A 46 08 75 03 96 EB F....v....F.u...
0863:0190 07 FF 46 06 EB D2 2B C0-5D CB 55 8B EC B3 3E 06 ..F...+.J.U...>.
0863:01A0 57 02 73 15 8A 46 0A 2A-E4 50 FF 76 08 FF 76 06 W.s..F.*.P.v..v..
0863:01B0 0E E8 B2 FC B3 C4 06 EB-
-S