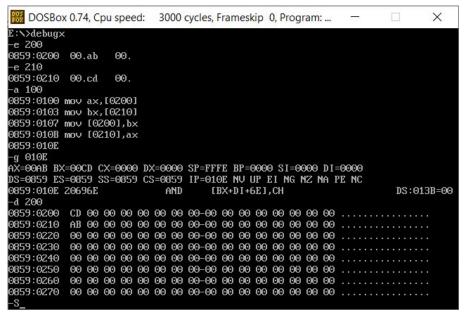
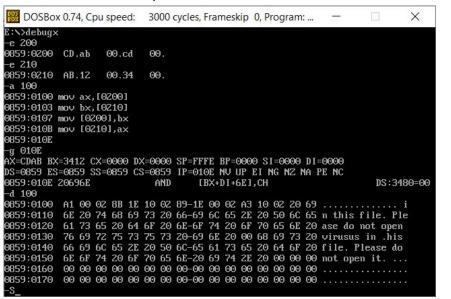
Question 1

Direct method - 8 bits



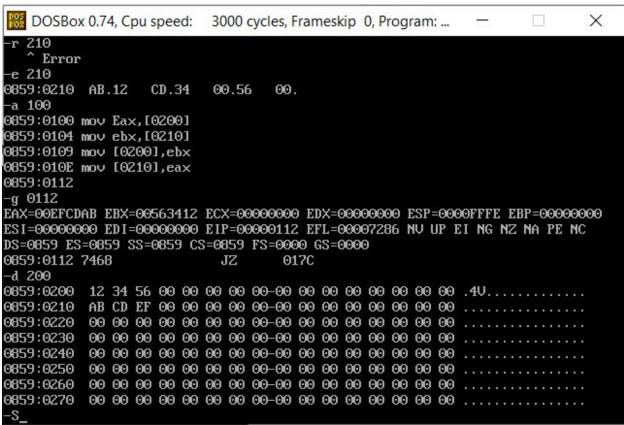
Direct method - 16 bits part 1



Part 2

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...
                                   X
0859:010B mov [0210],ax
0859:010E
g 010E
X=CDAB BX=3412 CX=0000 DX=0000 SP=FFFE BP=0000 SI=0000 DI=0000
DS=0859 ES=0859 SS=0859 CS=0859 IP=010E NV UP EI NG NZ NA PE NC
0859:010E 20696E
             AND
                 [BX+DI+6E1,CH
                                DS:3480=00
-d 100
0859:0140 66 69 6C 65 2E 20 50 6C-65 61 73 65 20 64 6F 20 file. Please do 0859:0150 6E 6F 74 20 6F 70 65 6E-20 69 74 2E 20 00 00 00 not open it. ...
0859:0160
     -d 200
0859:0210
     0859:0240
0859:0250
     0859:0260
```

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...
                                                                              X
E: \>debugx
-rx
386 regs on
-e 200
0859:0200 12.ab
                   34.cd
                            00.ef
                                    00.
-r 210
   Error
e 210
0859:0210 AB.12
                   CD.34
                            00.56
                                    ΘΘ.
-a 100
0859:0100 mov Eax,[0200]
0859:0104 mov ebx,[0210]
0859:0109 mov [0200],ebx
0859:010E mov [0210],eax
0859:0112
g 0112
EAX=00EFCDAB EBX=00563412 ECX=00000000 EDX=00000000 ESP=0000FFFE EBP=00000000
ESI=00000000 EDI=00000000 EIP=00000112 EFL=00007286 NV UP EI NG NZ NA PE NC
DS=0859 ES=0859 SS=0859 CS=0859 FS=0000 GS=0000
0859:0112 7468
                             JZ
                                     017C
-S
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...
                                                                              X
```



Register Relative addressing 8 bits

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...
                                                                                     X
E:\>debugx
-e 200
0859:0200 12.ab
                     34.
 e 210
0859:0210 AB.12
                     CD.
 mov bp,0200
^ Error
 a 100
0859:0100 mo∨ bp,200
0859:0103 mo∨ al,[bp]
0859:0106 mo∨ bl,[bp+10]
0859:0109 mov [bp],,bl
                       Error
0859:0109 mo∨ [bp],bl
9859:010C mov 10[bp],al
9859:010F
 g 010F
AX-600AB BX-6012 CX-6000 DX-6000 SP-FFFE BP-6200 SI-6000 DI-6000
DS-6659 ES-6659 SS-6659 CS-6659 IP-610F NU UP EI NG NZ NA PE NC
                               MOV
                                        [0210],AX
                                                                            DS:0210=CDAB
0859:010F A3100Z
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...
                                                                                     X
 mov bp,0200
^ Error
-a 100

-a 100

0859:0100 mov bp,200

0859:0103 mov al,[bp]

0859:0106 mov bl,[bp+10]
 0859:0109 mov [bp],,bl
                       Error
0859:0109 mo∨ [bp],bl
0859:010C mo∨ 10[bp],al
0859:010F
-y 010F
AX-90AB BX-9012 CX-9000 DX-9000 SP-FFFE BP-9200 SI-9000 DI-9000
DS-6859 ES-6859 SS-6859 CS-6859 IP-910F NU UP EI NG NZ NA PE NC
                                       [0210],AX
0859:010F A3100Z
                               MOV
                                                                           DS:0210=CDAB
-d 200
0859:0220
```

16 bits

```
BB DOSBox 0.74, Cpu speed:
           3000 cycles, Frameskip 0, Program: ...
                                  X
-e 200
0859:0200 00.12
        00.34
            00.
-e 210
0859:0210 00.ab
            00.
        00.cd
-a 100
0859:0100 mov bp,0200
0859:0103 mo∨ ax,[bp]
9859:0106 mo∨ b×,10[bp]
0859:0109 mo∨ [bp],b×
9859:010C mov 10[bp],ax
0859:010F
-g 010F
AX=341Z BX=CDAB CX=0000 DX=0000 SP=FFFE BP=0200 SI=0000 DI=0000
DS=0859 ES=0859 SS=0859 CS=0859 IP=010F NV UP EI NG NZ NA PE NC
                              DS:0210=3412
0859:010F A31002
            MOV
                [0210],AX
-d 200
0859:0210
```

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...
                                 X
-w 210
Cannot write: no file name given
e 210
0859:0210 12.09
        34.87
           00.76
               00.65
                   00.54
                      00.
-a 100
0859:0100 mo∨ bp,200
0859:0103 mov eax,[bp]
0859:0107 mov ebx,10[bp]
0859:010B mov [bp],ebx
9859:010F mov 10[bp],eax
0859:0113
g 0113
AX=3412 BX=8709 CX=0000 DX=0000 SP=FFFE BP=0200 SI=0000 DI=0000
DS=0859 ES=0859 SS=0859 CS=0859 IP=0113 NV UP EI NG NZ NA PE NC
0859:0113 686973
            PUSH
                WORD 7369
-d 200
-8
```

Base indexed:

32 bits

```
X
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...
-e 210
072A:0210 30.09
                01.87
                      2B.76
                             01.65
                                    ZA.
-a 100
072A:0100 mo∨ bp.200
              Error
072A:0100 mov si,0
072A:0103 mov al,10[bp+si]
972A:0106 mov bl,[bp+si]
972A:0108 mov [bp+sil,al
072A:010A mo∨ 10[bp+si],bl
072A:010D
g 0110
AX=0018 BX=00CD CX=0000 DX=0000 SP=FFFE BP=0000 SI=0000 DI=0000
DS-072A ES-072A SS-072A CS-072A IP-0110 NV UP EI PL NZ NA PE NC
072A:0110 0000
                       ADD
                              [BX+SI],AL
                                                          DS:00CD=00
-d 200
072A:0200
        12 34 56 78 ED 02 90 02-91 02 E1 02 31 01 E0 02 .4V×.....1...
972A:0210 09 87 76 65 2A 01 09 01-01 01 08 00 09 00 0B 01 ..∨e×......
972A:0220 03 01 18 00 19 00 0D 01-05 01 28 00 29 00 A0 02 .....(.)...
2D 3O 3Z 34 37 3A 3E 40-4Z 44 46 49 4B 4D 51 55 -0247:>@BDFIKMQU
072A:0250
         59 5D 60 63 65 67 69 6B-6D 70 73 76 79 7C 7F 83 Y1 cegikmpsvyl...
972A:0260
072A:0270 87 8A 8D 8F 92 95 98 9B-9E AO A2 A6 AA AD BO B2 ......
```

8 bits

Part 1

Part 2

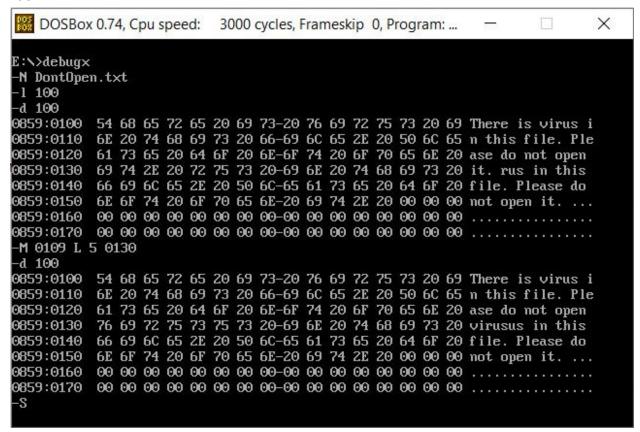
```
X
BOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...
   a 100
072A:0100 mo∨ bp,200
072A:0103 mov si,0
072A:0106 mov al,[bp+si]
072A:0108 mo∨ bl,10[bp+si]
072A:010B mov 10[bp+sil,al
072A:010E mo∨ [bp+si],bl
072A:0110
AX-0201 BX-0403 CX-0000 DX-0000 SP-FFFE BP-0200 SI-0000 DI-0000
DS=072A ES=072A SS=072A CS=072A IP=0110 NV UP EI NG NZ NA PO NC
072A:0110 0000
         ADD
            [BX+SI],AL
                       DS:0403=00
-d 200
072A:0200
```

Task 2

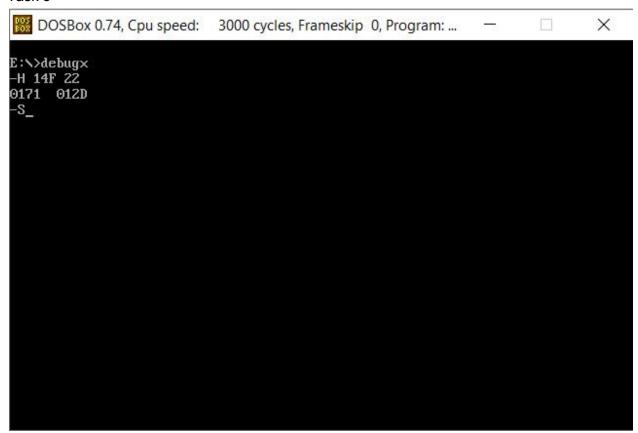
Task 3

```
DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...
                                                                              X
D:\BIN>debugx
-e 200
0859:0200 00.ab
                   00.cd
                            00.
-a 100
0859:0100 mov ax,[0200]
0859:0103 mov bx,[0200]
0859:0107 mov cx,[0200]
0859:010B mov dx,[0200]
0859:010F mov si,[0200]
0859:0113 mov di,[0200]
0859:0117
-N d;\new file.com
r bx 0
r cx 100
-w 100
Writing 0100 bytes
```

Task 4



Task 5



Task 6

