```asm
17    .model small
      .data
      a db    10h, 20h, 30h, 40h, 50h
      b db    11h, 22h, 33h, 44h, 55h


      .code
      mov   ax, @data
      mov   ds, ax
      lea   si, a
      lea   di, b.


      mov   cl, 05h


l1 : mov   al, [si]
     xchg  al, [di]
     mov   [si], al
     inc   di
     inc   di
     loop  l1
     mov   ah, 4ch
     int   21h
     end.
```

```
┌──────────────────────local──────────────────────┐  ┌─reg─┐
│──────────────source1 CS:IP (ACTIVE)──────────────│  │AX = 0000│
│052A:0000 B82B05      MOV      AX,052B             │  │BX = 0000│
│052A:0003 8EDB        MOV      DS,AX               │  │CX = 0000│
│052A:0005 8D360C00    LEA      SI,Word Ptr [000C]  │  │DX = 0000│
│052A:0009 8D3E1100    LEA      DI,Word Ptr [0011]  │  │SP = 0000│
│052A:000D B105        MOV      CL,05               │  │BP = 0000│
│052A:000F 8A04        MOV      AL,Byte Ptr [SI]    │  │SI = 0000│
│052A:0011 8605        XCHG     AL,Byte Ptr [DI]    │  │DI = 0000│
│052A:0013 47          INC      DI                  │  │DS = 051A│
│052A:0014 46          INC      SI                  │  │ES = 051A│
│052A:0015 E2F8        LOOP     000F                │  │SS = 0529│
│052A:0017 B44C        MOV      AH,4C               │  │CS = 052A│
│052A:0019 CD15        INT      15                  │  │IP = 0000│
│052A:001B 0010        ADD      Byte Ptr [BX+SI],DL │  │FL = 0200│
│052A:001D 2030        AND      Byte Ptr [BX+SI],DH │  │
│052A:001F 40          INC      AX                  │  │NV UP EI PL│
│052A:0020 50          PUSH     AX                  │  │NZ NA PO NC│
│──────────────────────command─────────────────────│
│CV1053 Warning:   TOOLS.INI not found             │
│CV0101 Warning:   No symbolic information for C:\MASM\change.EXE│
│>                                                  │
└───────────────────────────────────────────────────┘
<F8=Trace> <F10=Step> <F5=Go> <F6=Window> <F3=Display>
```

File   Edit   View   Search   Run   Watch   Options   Calls   Help

```
──────────────────────────local────────────────────────────            ┌─reg─┐
────────────────source1 CS:IP (ACTIVE)──────────────                    AX = 0000
052A:0000 B82B05        MOV      AX,052B                                 BX = 0000
052A:0003 8ED8          MOV      DS,AX                                   CX = 0000
052A:0005 8D360C00      LEA      SI,Word Ptr [000C]                      DX = 0000
052A:0009 8D3E1100      LEA      DI,Word Ptr [0011]                      SP = 0000
052A:000D B105          MOV      CL,05                                   BP = 0000
052A:000F 8A04          MOV      AL,Byte Ptr [SI]                        SI = 0000
052A:0011 8605          XCHG     AL,Byte Ptr [DI]                        DI = 0000
052A:0013 47            INC      DI                                      DS = 051A
052A:0014 46            INC      SI                                      ES = 051A
052A:0015 E2F8          LOOP     000F                                    SS = 0529
052A:0017 B44C          MOV      AH,4C                                   CS = 052A
052A:0019 CD15          INT      15                                      IP = 0000
052A:001B 0010          ADD      Byte Ptr [BX+SI],DL                     FL = 0200
052A:001D 2030          AND      Byte Ptr [BX+SI],DH
052A:001F 40            INC      AX                                      NV UP EI PL
052A:0020 50            PUSH     AX                                      NZ NA PO NC
──────────────────────────command────────────────────────────
051A:0000   CD 20 FF 9F 00 EA FF FF-AD DE 6C 02 CD 03 32 03   . ...↑
051A:0010   CD 03 4B 0A CD 03 FF 64-01 01 01 00 02 03 FF FF   ..K..
>
```

<F8=Trace> <F10=Step> <F5=Go> <F6=Window> <F3=Display>

2.
```
.model small
. data

. code
    mov   ax, @data
    mov   ds, ax
    mov   al, 63h
    add   al, 88h
    daa
    mov   ah, 4 ch
    int   21h
    end.
```

File   Edit   View   Search   Run   Watch   Options   Calls   Help

```
┌──────────────────────────local──────────────────────────┐          ┌─reg─┐
│───────────────source1 CS:IP (ACTIVE)──────────────────   │          AX ≈ 0000
│052A:0000 B82A05      MOV        AX,052A                 ' │          BX ≈ 0000
│052A:0003 8ED8        MOV        DS,AX                     │          CX ≈ 0000
│052A:0005 B063        MOV        AL,63                     │          DX ≈ 0000
│052A:0007 0488        ADD        AL,88                     │          SP ≈ 0000
│052A:0009 27          DAA                                  │          BP ≈ 0000
│052A:000A B44C        MOV        AH,4C                     │          SI ≈ 0000
│052A:000C CD21        INT        21                        │          DI ≈ 0000
│052A:000E B79A        MOV        BH,9A                     │          DS = 051A
│052A:0010 B9FFFF      MOV        CX,FFFF                   │          ES = 051A
│052A:0013 B85800      MOV        AX,0058                   │          SS = 0529
│052A:0016 E8B902      CALL       02D2                      │          CS = 052A
│052A:0019 8CDA        MOV        DX,DS                     │          IP = 0000
│052A:001B E8AB02      CALL       02C9                      │          FL = 0200
│052A:001E B792        MOV        BH,92                     │
│052A:0020 B9FFFF      MOV        CX,FFFF                   │          NV UP EI PL
│052A:0023 B84800      MOV        AX,0048                   │          NZ NA PO NC
└─────────────────────command──────────────────────────────┘
CV1053 Warning:   TOOLS.INI not found
CV0101 Warning:   No symbolic information for C:\MASM\axx.EXE
>
```

<F8=Trace> <F10=Step> <F5=Go> <F6=Window> <F3=Display>

```
 File   Edit   View   Search   Run   Watch   Options   Calls                    Help
┌─────────────────────────────local──────────────────────────────────┐   ┌─reg─┐
│                          source1 CS:IP (ACTIVE)                      │   │AX = 0000│
│052A:0000 B82A05      MOV        AX,052A                              │   │BX = 0000│
│052A:0003 8ED8        MOV        DS,AX                                │   │CX = 0000│
│052A:0005 B063        MOV        AL,63                                │   │DX = 0000│
│052A:0007 0488        ADD        AL,88                                │   │SP = 0000│
│052A:0009 27          DAA                                             │   │BP = 0000│
│052A:000A B44C        MOV        AH,4C                                │   │SI = 0000│
│052A:000C CD21        INT        21                                   │   │DI = 0000│
│052A:000E B79A        MOV        BH,9A                                │   │DS = 051A│
│052A:0010 B9FFFF      MOV        CX,FFFF                              │   │ES = 051A│
│052A:0013 B85800      MOV        AX,0058                              │   │SS = 0529│
│052A:0016 EBB902      CALL       02D2                                 │   │CS = 052A│
│052A:0019 8CDA        MOV        DX,DS                                │   │IP = 0000│
│052A:001B EBAB02      CALL       02C9                                 │   │FL = 0200│
│052A:001E B792        MOV        BH,92                                │   │         │
│052A:0020 B9FFFF      MOV        CX,FFFF                              │   │NV UP EI PL│
│052A:0023 B84800      MOV        AX,0048                              │   │MZ NA PO NC│
├──────────────────────────command───────────────────────────────────┤   │
│051A:0000  CD 20 FF 9F 00 EA FF FF-AD DE 6C 02 CD 03 32 03   . ...   │
│051A:0010  CD 03 4B 0A CD 03 FF 04-01 01 01 00 02 03 FF FF   ..K..   │
│>                                                                     │
└─────────────────────────────────────────────────────────────────────┘

<F8=Trace> <F10=Step> <F5=Go> <F6=Window> <F3=Display>
```

(3.) .model small
. data
num1 db 00h, 03h, 42h, 98h
num2, db 09h, 57h, 13h, 64h
res db 4 dup (?)

. code
mov ax, @data
mov ds, ax
mov si, 03h
mov cl, 04h
clc
degadd: mov al, num1[si]
        adc al, num2 [si]
        daa
        mov res [si], al

```
dec si
loop deciadd
mov ah,4ch
int  21
    end
```

```
 File   Edit   View   Search   Run   Watch   Options   Calls                      Help
```

```
                                    ─local─                                    ↑│    │•│reg│↑│
                              ─source1 CS:IP (ACTIVE)─                          ↑│    AX = 0000
052A:0000 B82C05       MOV          AX,052C                                         BX = 0000
052A:0003 8ED8         MOV          DS,AX                                           CX = 0000
052A:0005 BE0300       MOV          SI,0003                                         DX = 0000
052A:0008 B104         MOV          CL,04                                           SP = 0000
052A:000A F8           CLC                                                          BP = 0000
052A:000B 8A840000     MOV          AL,Byte Ptr [SI+0000]                           SI = 0000
052A:000F 12840400     ADC          AL,Byte Ptr [SI+0004]                           DI = 0000
052A:0013 27           DAA                                                          DS = 051A
052A:0014 88840800     MOV          Byte Ptr [SI+0008],AL                           ES = 051A
052A:0018 4E           DEC          SI                                              SS = 0529
052A:0019 E2F0         LOOP         000B                                            CS = 052A
052A:001B B44C         MOV          AH,4C                                           IP = 0000
052A:001D CD15         INT          15                                              FL = 0200
052A:001F 0000         ADD          Byte Ptr [BX+SI],AL
052A:0021 034298       ADD          AX,Word Ptr [BP+SI-68]                         NV UP EI PL
052A:0024 07           POP          ES                                            NZ NA PO NC
                                  ─command─                                    ↑│
CV1053 Warning:    TOOLS.INI not found                                         ↑
CV0101 Warning:    No symbolic information for C:\MASM\deci.EXE
>_
```

```
 <F8=Trace> <F10=Step> <F5=Go> <F6=Window> <F3=Display>
```

File Edit View Search Run Watch Options Calls   Help

```
                                local
                        source1 CS:IP (ACTIVE)
052A:0000 B82C05        MOV        AX,052C
052A:0003 8ED8          MOV        DS,AX
052A:0005 BE0300        MOV        SI,0003
052A:0008 B104          MOV        CL,04
052A:000A F8            CLC
052A:000B 8A840000      MOV        AL,Byte Ptr [SI+0000]
052A:000F 12840400      ADC        AL,Byte Ptr [SI+0004]
052A:0013 27            DAA
052A:0014 88840800      MOV        Byte Ptr [SI+0008],AL
052A:0018 4E            DEC        SI
052A:0019 E2F0          LOOP       000B
052A:001B B44C          MOV        AH,4C
052A:001D CD15          INT        15
052A:001F 0000          ADD        Byte Ptr [BX+SI],AL
052A:0021 034298        ADD        AX,Word Ptr [BP+SI-68]
052A:0024 07            POP        ES
```

```
AX = 0000
BX = 0000
CX = 0000
DX = 0000
SP = 0000
BP = 0000
SI = 0000
DI = 0000
DS = 051A
ES = 051A
SS = 0529
CS = 052A
IP = 0000
FL = 0200

NV UP EI PL
NZ NA PO NC
```

```
                                command
051A:0000  CD 20 FF 9F 00 EA FF FF-AD DE 6C 02 CD 03 32 03   . ...
051A:0010  CD 03 4B 0A CD 03 FF 04-01 01 01 00 02 03 FF FF   ..K..
>
```

<F8=Trace> <F10=Step> <F5=Go> <F6=Window> <F3=Display>