Problem 1

```
01  ;214097
02  ORG 0100H
03  .DATA
04  input_string DB 'WE aRE DUET STuDeNTs',0Dh,0Ah,'$'
05  MSG DB 'No small letters$'
06  firstletter DB 0
07  lastletter DB 0
08  .CODE
09  MAIN PROC
10      MOV AX,@DATA
11      MOV DS,AX
12
13      MOV AH,9H
14      LEA DX,input_string
15      INT 21H
16
17      MOV SI,0
18      MOV CX,0
19      MOV AL,'$'
20
21  FIND_FIRST:
22      MOV AL,input_string[SI]
23      CMP AL,'$'
24      JE CHECK_LAST
25
26      CMP AL,'a'
27      JL SKIP_FIRST
28      CMP AL,'z'
29      JG SKIP_FIRST
30      MOV firstletter,AL
31      JMP FIND_LAST
32
33  SKIP_FIRST:
34      INC SI
35      JMP FIND_FIRST
36
37  FIND_LAST:
38      MOV AL,input_string[SI]
39      CMP AL,'$'
```

```
40      JE DISPLAY_RESULT
41      CMP AL,'a'
42      JL SKIP_LAST
43      CMP AL,'z'
44      JG SKIP_LAST
45      MOV lastletter,AL
46
47  SKIP_LAST:
48      INC SI
49      JMP FIND_LAST
50  CHECK_LAST:
51      CMP firstletter,0
52      JE NO_SMALL
53
54  DISPLAY_RESULT:
55      MOV AH,02H
56      MOV DL,firstletter
57      INT 21H
58
59      MOV DL,0AH
60      INT 21H
61      MOV DL,0DH
62      INT 21H
63
64      MOV DL,lastletter
65      INT 21H
66
67      JMP RETURN
68
69  NO_SMALL:
70      MOV AH,09H
71      LEA DX,MSG
72      INT 21H
73  RETURN:
74      MOV AH,4CH
75      INT 21H
76      MAIN ENDP
77  END MAIN
78  |
```

line: 80   col: 1   drag a file here to open

line: 78   col: 1

emulator screen (80x25 chars)   — □ ✕

```
WE aRE DUET STuDeNTs
a
s
```

clear screen   change font

Problem 2

file   edit   bookmarks   assembler   emulator   math

new   open   examples   save   compil

```
01  ;214097
02  ORG 0100H
03  .DATA
04  SERIES DB 1,2,3,4,5,6
05  N DW 6
06  RESULT DB 0
07  .CODE
08  MAIN PROC
09      MOV AX,@DATA
10      MOV DS,AX
11
12      MOV SI,0
13      XOR AX,AX
14      MOV CX,N
15  AGAIN:
16      MOV AL,SERIES[SI]
17      MUL AL
18      ADD RESULT,AL
19      INC SI
20      LOOP AGAIN
21
22
23  RETURN:
24      MOV AH,4CH
25      INT 21H
26      MAIN ENDP
27  END MAIN
28
```

variables

size: byte   elements: 1

edit   show as: signed

```
SERIES  1
N       6
RESULT  91
```

line: 28   col: 1

Problem 3

file   edit   bookmarks   assembler   emulator   math   ascii codes   help

new   open   examples   save   compile   emulate   ca

```
01  ;214097
02  ORG 0100H
03  .DATA
04  SERIES DB 5 DUP(?)
05  INMSG DW 'Enter your inputs:$'
06  OUTMSG DW 'The sorted list is:$'
07  .CODE
08  MAIN PROC
09      MOV AX,@DATA
10      MOV DS,AX
11
12      ;IN MSG
13      MOV AH,9
14      LEA DX,INMSG
15      INT 21H
16
17      MOV CX,5
18      MOV BX, OFFSET SERIES
19      MOV AH,1
20
21  INPUT:
22      INT 21H
23      MOV [BX],AL
24      INC BX
25      LOOP INPUT
26
27      MOV CX,5
28      DEC CX
29  OUTERLOOP:
30      MOV BX,CX
31      MOV SI,0
32
33  COMPLOOP:
34      MOV AL,SERIES[SI]
35      MOV DL,SERIES[SI+1]
36      CMP AL,DL
37
38      JC NO
39
```

line: 75   col: 1

file   edit   bookmarks   assembler   emulator   math   asc

new   open   examples   save   compile

```
40      MOV SERIES[SI],DL
41      MOV SERIES[SI+1],AL
42
43  NO:
44      INC SI
45      DEC BX
46
47      JNZ COMPLOOP
48      LOOP OUTERLOOP
49
50      ;NEWLINE
51      MOV AH,2
52      MOV DL,10
53      INT 21H
54      MOV DL,13
55      INT 21H
56
57      ;OUT MSG
58      MOV AH,9
59      LEA DX,OUTMSG
60      INT 21H
61
62      MOV CX,5
63      MOV BX,OFFSET SERIES
64  DISPLAY:
65      MOV DL,[BX]
66      MOV AH,2
67      INT 21H
68
69      INC BX
70      LOOP DISPLAY
71
72
73      MAIN ENDP
74  END MAIN
75
```

line: 53   col: 26

emulator screen (80x25 chars)

```
Enter your inputs:26194
The sorted list is:12469
```

clear screen   change font   13