Answer – 01

Code:

```
INCLUDE 'EMU8086.INC'
.MODEL SMALL
.STACK 100H
.DATA
X DB ?

.CODE
MAIN PROC
MOV AX,@DATA
MOV DS,AX
MOV AH,1
INT 21H
MOV X,AL

CMP AL,'a'
JE VL
CMP AL,'e'
JE VL
CMP AL,'i'
JE VL
CMP AL,'o'
JE VL
CMP AL,'u'
JE VL
 CMP AL,'A'
JE VL
CMP AL,'E'
```

```
JE VL
CMP AL,'I'
JE VL
CMP AL,'O'
JE VL

CMP AL,'U'
JE VL
    MOV CL,6
    MOV BL,6
    MOV BH,9

    START1:
    CMP BL,BH
    JG SECOND
    PRINTN
    ADD CL,48
    MOV AH,2
    MOV DL,CL
    INT 21H
    SUB CL,48
    INC CL
    INC BL
    JMP START1
JMP SECOND

VL:
    MOV CL,1
    MOV BL,1
    MOV BH,5
```

```
        START2:
        CMP BL,BH
        JG SECOND
        PRINTN
        ADD CL,48
        MOV AH,2
        MOV DL,CL
        INT 21H
        SUB CL,48
        INC CL
        INC BL
        JMP START2
SECOND:
PRINTN
MOV AH,1
INT 21H

CMP AL,X
JE EXIT
        MOV CL,2

        MOV BL,2
        MOV BH,8

        START3:
        CMP BL, BH
        JG EXIT
        PRINTN
        ADD CL,48
        MOV AH,2
```
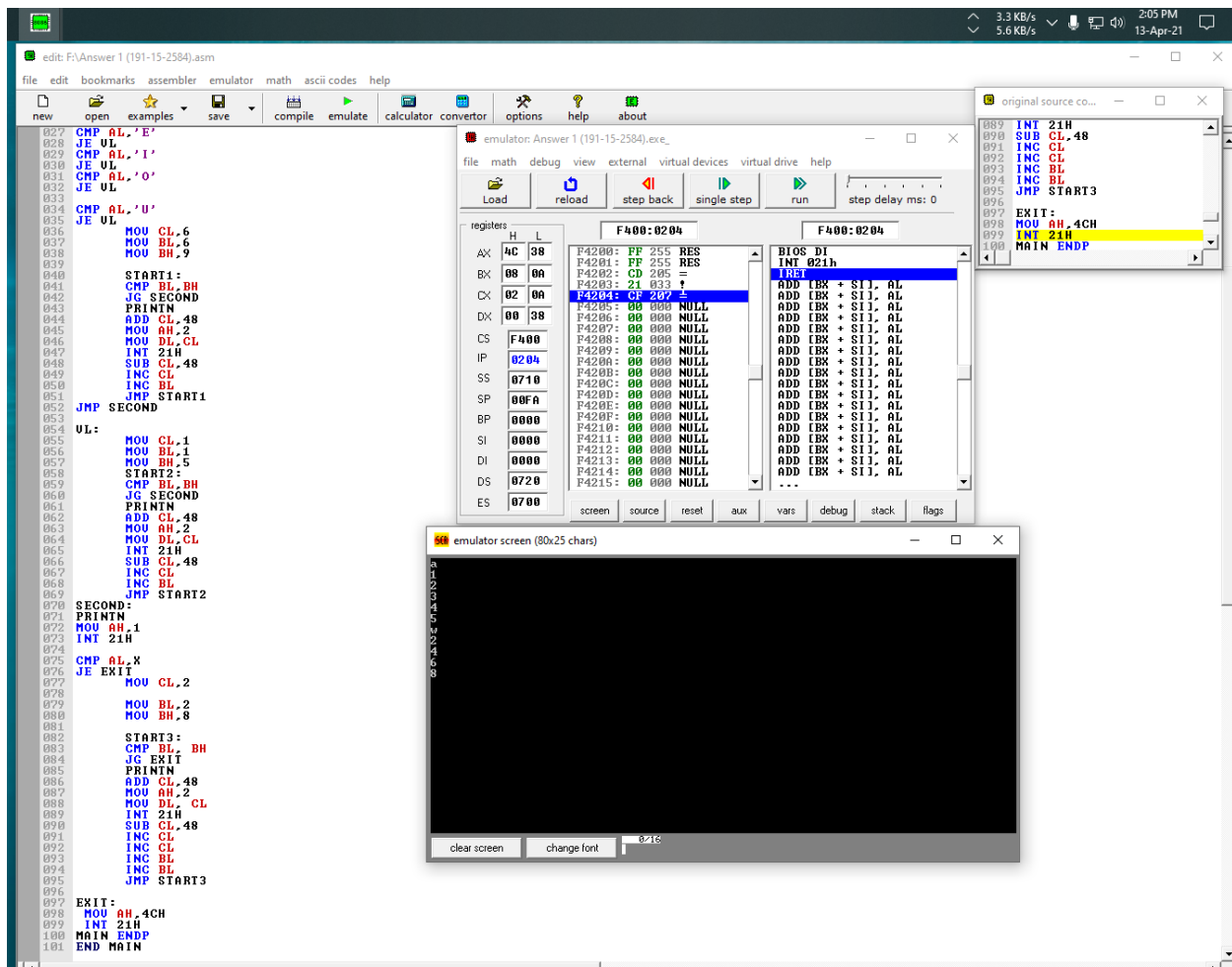
MOV DL, CL

INT 21H

SUB CL,48

INC CL

INC CL

INC BL

INC BL

JMP START3

EXIT:

 MOV AH,4CH

 INT 21H

MAIN ENDP

END MAIN

Code with Output:

Answer – 02

Code:

```
INCLUDE 'EMU8086.INC'
.MODEL SMALL
.STACK 100H
.DATA
 ARR DB 6 DUP
.CODE

MAIN PROC
   MOV CX,6
   MOV SI,OFFSET ARR

   L1:
   MOV AH,1
   INT 21H
   MOV [SI],AL
   INC SI
   LOOP L1



   MOV CX,6
   DEC CX
   OUTER:
   MOV BX,CX
   MOV SI,0

   COMPLOOP:
```

```
MOV AL,ARR[SI]
MOV DL,ARR[SI+1]
CMP AL,DL

JC NOSWAP

MOV ARR[SI],DL
MOV ARR[SI+1],AL

NOSWAP:
INC SI
DEC BX
JNZ COMPLOOP
LOOP OUTER

MOV SI,OFFSET ARR
MOV CX,6
PRINTN

L2:
MOV DL,[SI]
MOV AH,2
INT 21H
INC SI
LOOP L2

EXIT:
MOV AH,4CH
INT 21H
MAIN ENDP
```

END MAIN

MOV AH,4CH

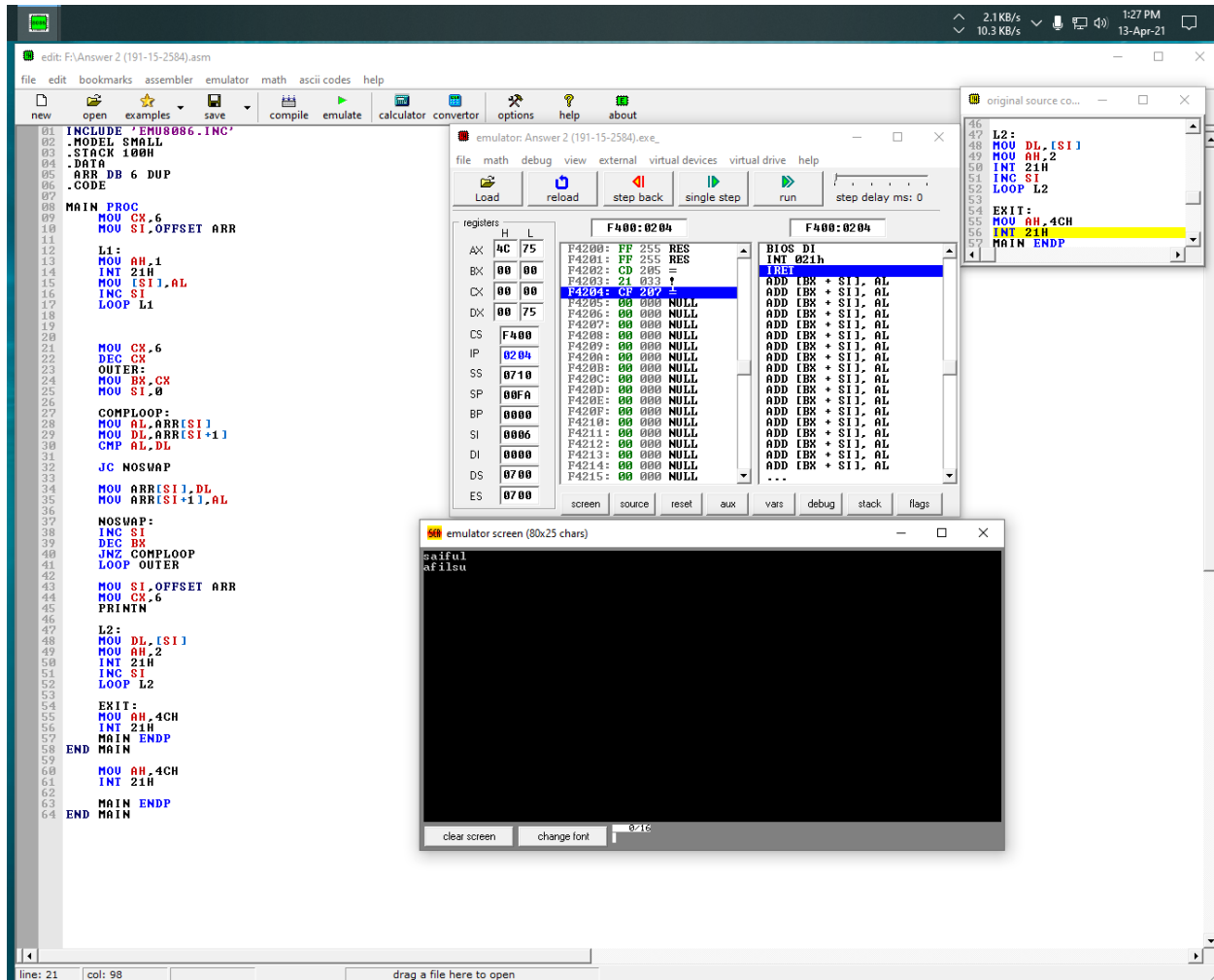INT 21H

MAIN ENDP

END MAIN

Output with Code:

Answer – 03

Code:

```
.MODEL SMALL
  .STACK 100H

  .DATA
  PROMPT_1   DB   'Enter The First Letter : $'
  PROMPT_2   DB   'Enter The Second Letter : $'
  PROMPT_3   DB   'Your Name is : $'
  NEXT_LINE  DB   0DH,0AH,"$"

  .CODE
  MAIN PROC

  MOV AX, @DATA
  MOV DS, AX

  MOV AH, 2
  MOV DL, "?"
  INT 21H

  MOV AH, 9

  LEA DX, NEXT_LINE
  INT 21H

  LEA DX, PROMPT_1
  INT 21H
```

```
MOV AH, 1
INT 21H

MOV BL, AL

MOV AH, 9

LEA DX, NEXT_LINE
INT 21H

LEA DX, PROMPT_2
INT 21H

MOV AH, 1
INT 21H

MOV BH, AL

MOV AH, 9

LEA DX, NEXT_LINE
INT 21H

LEA DX, PROMPT_3
INT 21H

MOV AH, 2

CMP BL, BH
```

```
JAE @GREATER
  MOV DL, BL
  INT 21H


  MOV DL, BH
  INT 21H


  JMP @END


@GREATER:
  MOV DL, BH
  INT 21H


  MOV DL, BL
  INT 21H


@END:


MOV AH, 4CH
INT 21H
MAIN ENDP
END MAIN
```
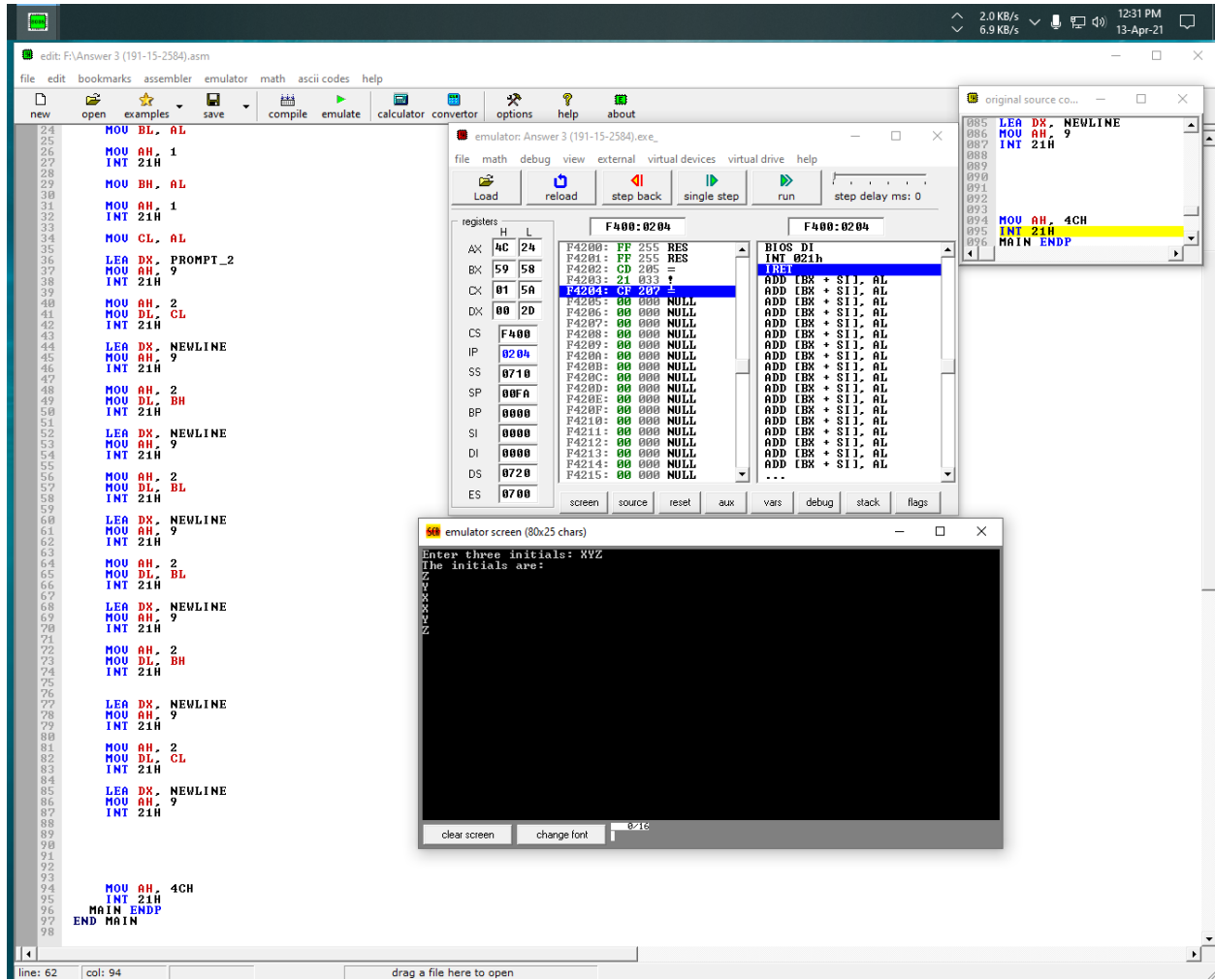
Code with Output:

Answer – 04

Code:

```
include emu8086.inc


org 100h



    GOTOXY  4,0

    PUTC '*'


    GOTOXY 4,1

    PUTC '*'

    GOTOXY 3,1

    PUTC '*'

    GOTOXY 2,1

    PUTC '*'



    GOTOXY 4,2

    PUTC '*'

    GOTOXY 3,2

    PUTC '*'

    GOTOXY 2,2

    PUTC '*'

    GOTOXY 1,2

    PUTC '*'

    GOTOXY 0,2

    PUTC '*'
```

GOTOXY 4,3

PUTC '*'

GOTOXY 3,3

PUTC '*'

GOTOXY 2,3

PUTC '*'

GOTOXY 4,4

PUTC '*'

Code with Output: