Experiment 5 Pseudo-instructions

Purpose:

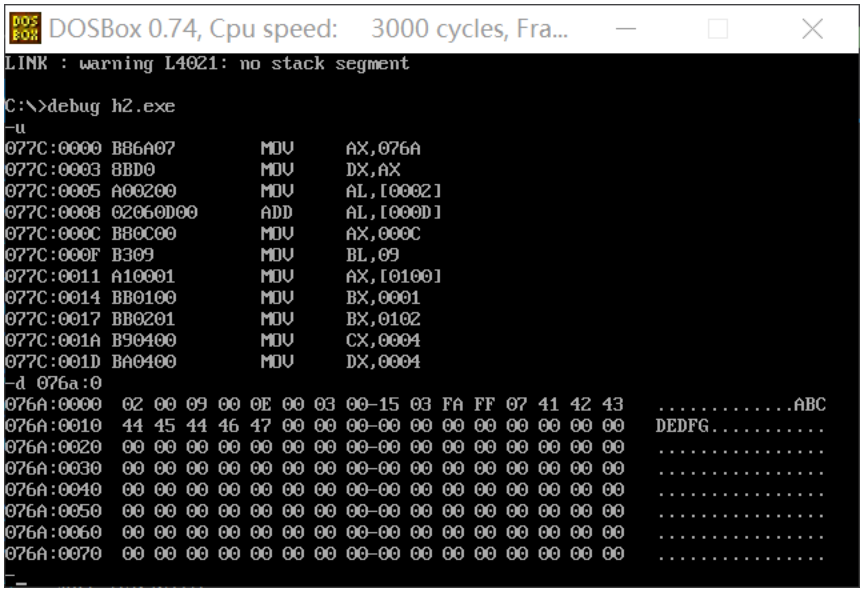
Master the common pseudo-instructions to write a complete program, implement the following data definition statements and related instructions, view the definition of memory data under Debug, and single-step trace to view the value of each register.

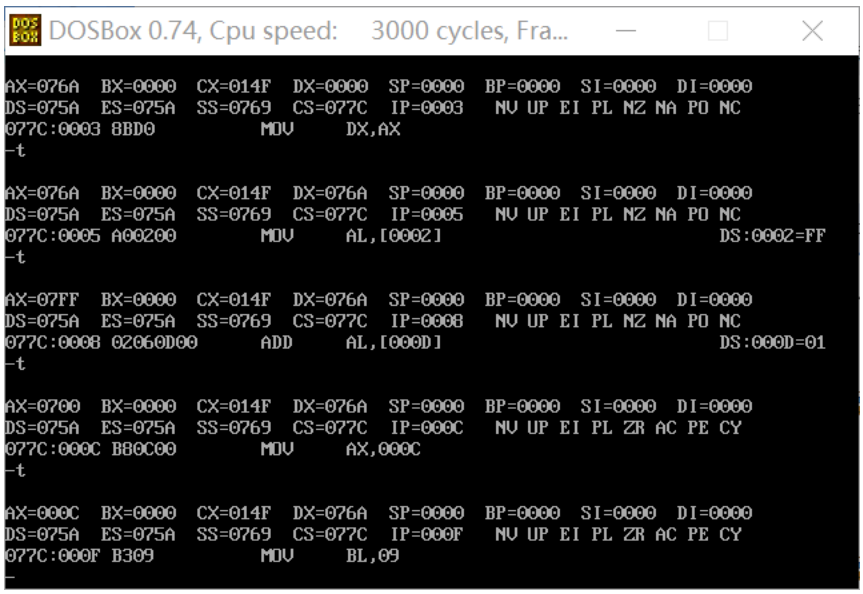
Experimental content:

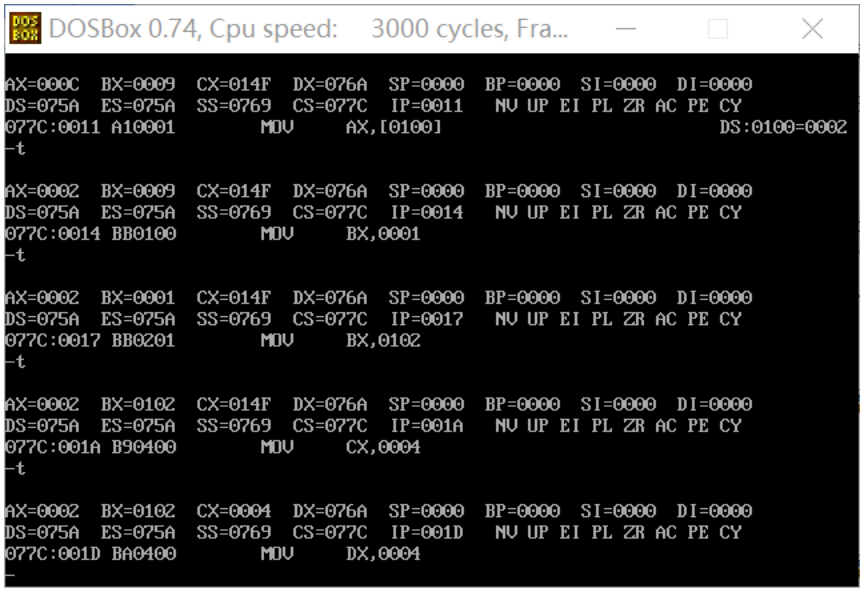
1. Write a complete program with 16-bit instructions, implement the following data definition statements and related instructions, check the definition of memory data under Debug, and check the values of each register with single-step tracking.

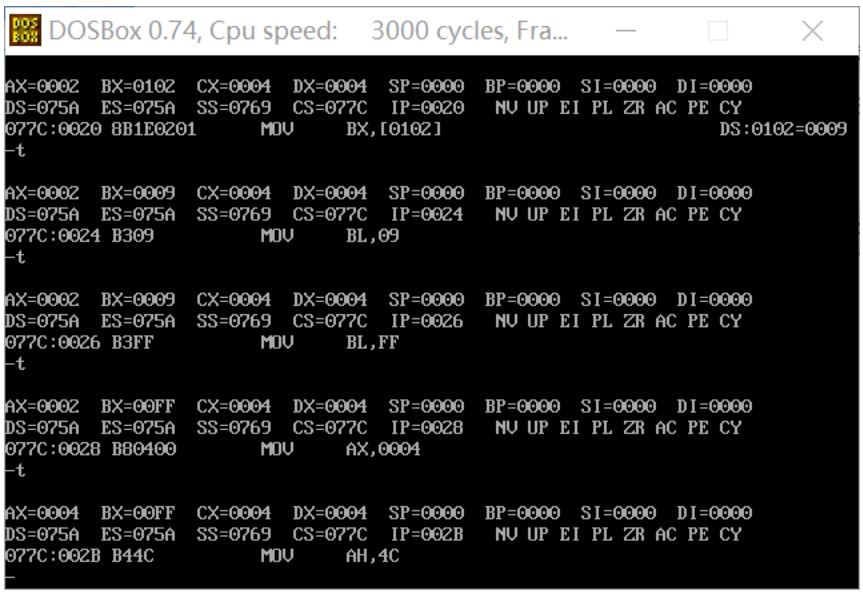
```
DATA SEGMENT
ORG 0
ARRAY LABEL BYTE
DA1 DW 2,9,14,3,315H,-6
DA2 DB 7,'ABCDEDFG'
LEN = $-DA2
ORG 100H
DA3 DW DA4
DA4 DB 4 DUP(2 DUP(1,2,3),4)
DATA ENDS

CODE SEGMENT
ASSUME CS:CODE,DS:DATA
START:
MOV AX, DATA
MOV DX,AX
MOV AL,ARRAY+2
ADD AL,DA2+1
MOV AX,DA2-DA1
MOV BL,LEN
MOV AX,DA3
MOV BX, TYPE DA4
MOV BX,OFFSET DA4
MOV CX, SIZE DA4
MOV DX,LENGTH DA4
MOV BX,WORD PTR DA4
MOV BL,LEN AND 0FH
MOV BL,LEN GT 5
MOV AX,LEN MOD 5

MOV AH,4CH
INT 21H
```

```
CODE ENDS
END START
```





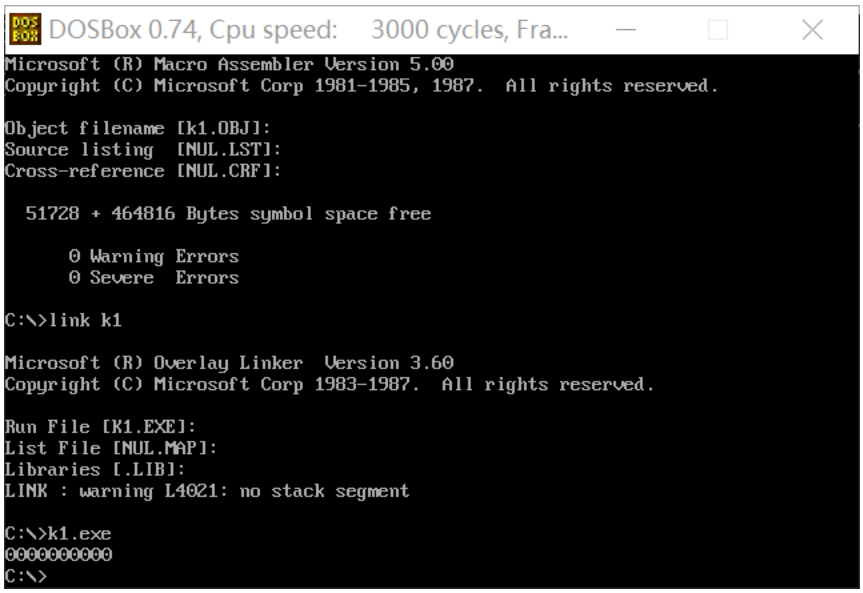




2、Can the following program output 0~9? If not, how should it be modified?

```
CODE SEGMENT
    ASSUME CS:CODE
    K=30H
    J DW 0
START:MOV DL,K
     MOV AH,2
```

```
        INT 21H
        K=K+1
        INC J
        CMP J,10
        JNZ START
        MOV AH,4CH
        INT 21H
CODE ENDS
        END START
```



answer:

As shown in the picture, no .

The following modifications should be made:

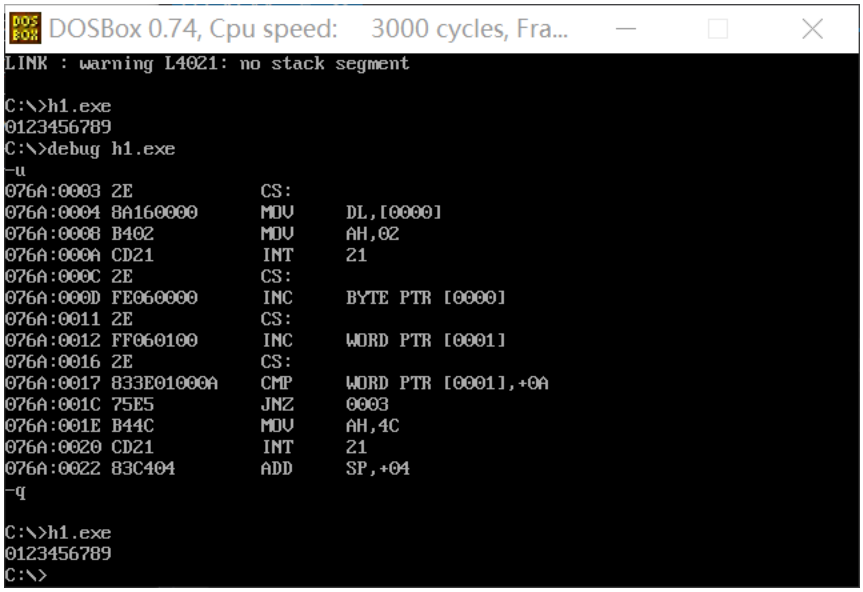
Change the third line [K=30H] to [K DB 30H]

Change line 8 [K=K+1] to [INC K]

The modified code is as follows:

```
CODE SEGMENT
    ASSUME CS:CODE
    K DB 30H
    J DW 0
START:MOV DL,K
```

```
MOV AH,2
INT 21H
INC K
INC J
CMP J,10
JNZ START
MOV AH,4CH
INT 21H
CODE ENDS
    END START
```



As shown in the figure, the display outputs 0~9.