Nested Loop in Assembly

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Non Nested Loop

Mov cx,value

L1:

    ;statements

Loop L1

Nested Loop

L1:

    ;statements

L2:

    ;statements

Loop L2

Loop L1

Nested Loop

- But wait we forgot the counter!

Nested Loop

MOV CX,Counter

L1:

  ;statements

MOV CX,Counter

L2:

  ;statements

Loop L2

Loop L1

Internal CX, will override the outer CX Value, so what should we do???

Nested Loop

```
MOV CX,Counter
L1:
PUSH CX
        ;statements
MOV CX,Counter
L2:
        ;statements
Loop L2
POP CX
Loop L1
```

Internal CX, will override the outer CX Value, so what should we do???

```asm
.MODEL SMALL
.STACK 100H
.DATA
.CODE
MAIN PROC
        MOV  BX,1
        MOV  CX,9

    L1:
    PUSH CX

    MOV  CX,BX
    L2:
        MOV  DL,'*'
        MOV  AH,02
        INT  21H

    LOOP L2

    MOV  DL,0AH
    INT  21H

    MOV  DL,0DH
    INT  21H

    INC  BX

    POP  CX

    LOOP L1

    MAIN ENDP

END MAIN
```

Print the following Pattern

Print it in both directions, one by one

1
2 2
3 3 3
4 4 4 4

Print the following pattern

```
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```