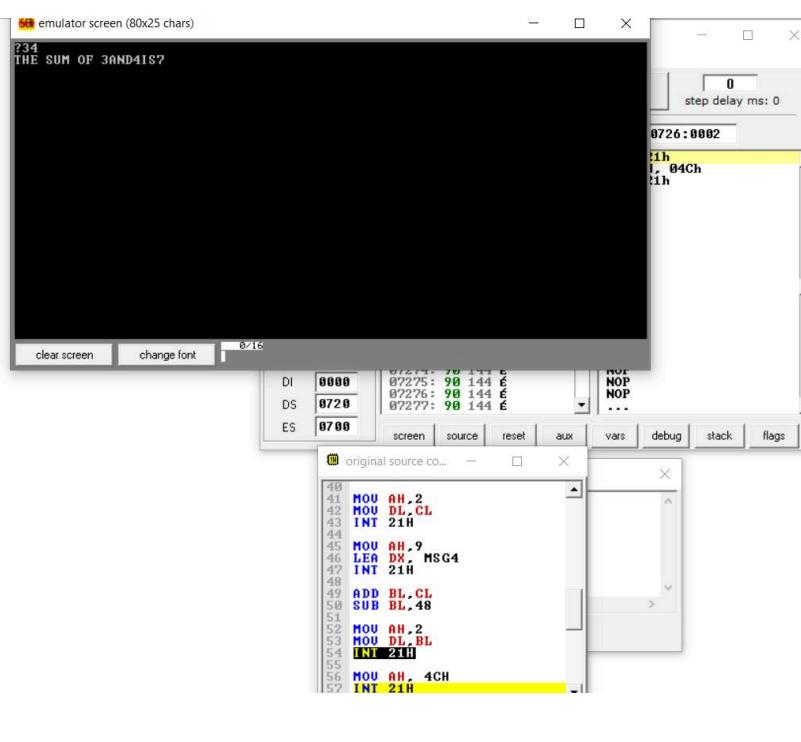


Program#1

```

01 .MODEL SMALL
02 .STACK 100H
03 .DATA
04
05 MSG1 DB "?$"
06 MSG2 DB 10,13, "THE SUM OF $"
07 MSG3 DB "AND$"
08 MSG4 DB "IS$"
09
10 .CODE
11 MAIN PROC
12 MOU AX, EDATA
13 MOU DS, AX
14
15 MOU AH, 9
16 LEA DX, MSG1
17 INT 21H
18
19 MOU AH, 1
20 INT 21H
21 MOU BL, AL
22
23 MOU AH, 1
24 INT 21H
25
26 MOU CL, AL
27
28 MOU AH, 9
29 LEA DX, MSG2
30 INT 21H
31
32 MOU AH, 2
33 MOU DL, BL
34 INT 21H
35
36 MOU AH, 9
37 LEA DX, MSG3
38 INT 21H
39
40 MOU AH, 2
41 MOU DL, CL
42 INT 21H
43
44 MOU AH, 9
45 LEA DX, MSG4
46 INT 21H
47
48
49 ADD BL, CL
50 SUB BL, 48
51
52 MOU AH, 2
53 MOU DL, BL
54 INT 21H
55
56 MOU AH, 4CH
57 INT 21H

```



Program#2

Single-Digit Decimal Adder with ASCII Conversion

=====
; PURPOSE:
; This program takes two single-digit inputs from the user, calculates their sum, and prints the result. It includes logic to correctly handle both single-digit results (0-9) and two-digit results (10-18).
;

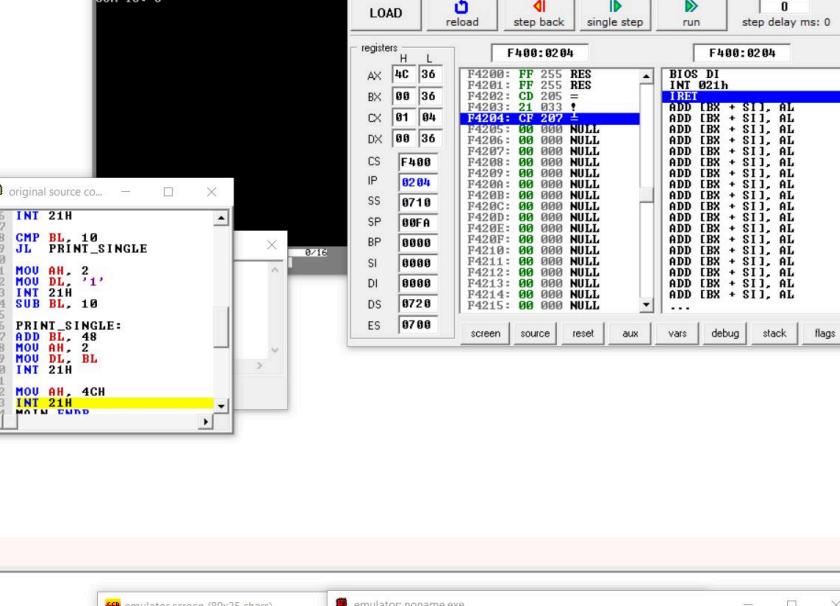
; WORKING STEPS:

1. Initialization: Setup the Data Segment so the CPU can access messages.
 2. Input Phase: Prompt user for two digits, read them (INT 21H, AH=1), and subtract 48 (ASCII conversion) to treat them as actual integers.
 3. Processing: Perform addition (ADD) of the two values.
 4. Output Phase: Compare the sum. If >= 10, print '1' manually and adjust the remaining value, then print the final digit as an ASCII character.
- =====

```

01 .MODEL SMALL
02 .STACK 100H
03 .DATA
04
05 MSG1 DB "ENTER DIGIT <1>: $"
06 MSG2 DB 13, 10, "DIGIT <2>: $"
07 MSG3 DB 13, 10, "SUM IS: $"
08
09 .CODE
10 MAIN PROC
11 MOU AX, EDATA
12 MOU DS, AX
13
14 MOU AH, 9
15 LEA DX, MSG1
16 INT 21H
17
18 MOU AH, 1
19 INT 21H
20 SUB AL, 48
21 MOU BL, AL
22
23 MOU AH, 9
24 LEA DX, MSG2
25 INT 21H
26
27 MOU AH, 1
28 INT 21H
29 SUB AL, 48
30 MOU CL, AL
31
32 ADD BL, CL
33
34 MOU AH, 9
35 LEA DX, MSG3
36 INT 21H
37
38 CMP BL, 10
39 JL PRINT_SINGLE
40
41 MOU AH, 2
42 MOU DL, 2
43 INT 21H
44 SUB BL, 10
45
46 PRINT_SINGLE:
47 ADD BL, 48
48 MOU AH, 2
49 MOU DL, BL
50 INT 21H
51
52 MOU AH, 4CH
53 INT 21H
54 MAIN ENDP
55 END MAIN

```



```

01 .MODEL SMALL
02 .STACK 100H
03 .DATA
04
05 MSG1 DB "ENTER DIGIT <1>: $"
06 MSG2 DB 13, 10, "DIGIT <2>: $"
07 MSG3 DB 13, 10, "SUM IS: $"
08
09 .CODE
10 MAIN PROC
11 MOU AX, EDATA
12 MOU DS, AX
13
14 MOU AH, 9
15 LEA DX, MSG1
16 INT 21H
17
18 MOU AH, 1
19 INT 21H
20 SUB AL, 48
21 MOU BL, AL
22
23 MOU AH, 9
24 LEA DX, MSG2
25 INT 21H
26
27 MOU AH, 1
28 INT 21H
29 SUB AL, 48
30 MOU CL, AL
31
32 ADD BL, CL
33
34 MOU AH, 9
35 LEA DX, MSG3
36 INT 21H
37
38 CMP BL, 10
39 JL PRINT_SINGLE
40
41 MOU AH, 2
42 MOU DL, 2
43 INT 21H
44 SUB BL, 10
45
46 PRINT_SINGLE:
47 ADD BL, 48
48 MOU AH, 2
49 MOU DL, BL
50 INT 21H
51
52 MOU AH, 4CH
53 INT 21H
54 MAIN ENDP
55 END MAIN

```

