INNOVATION:

Aim:- To multiply an ASCII string of "N" numbers by a single ASCII digit stored in DL register, the data is stored at memory location 0000:1300 onwards the result is string of unpacked BCD digits at memory location 0000:7308 onwards

Software Used: EMU 8086

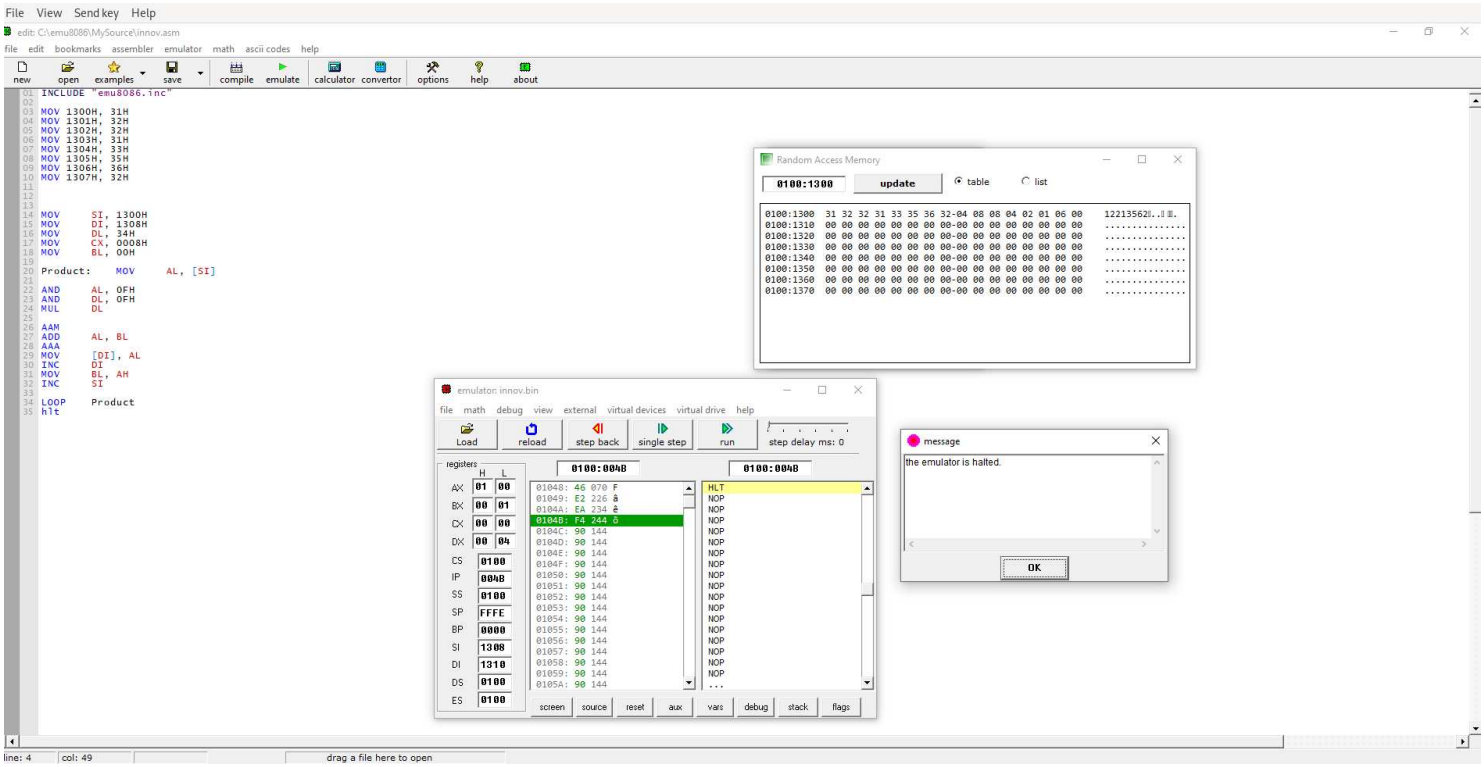
Algorithm:-

1. Load SI register with starting address of string
2. Load DI register with starting address of result location
3. Load DL with the multiplier ASCII digit
4. MS nibble of multiplier is zeroed.
5. Load counter register with the number of bytes in the string.
6. Mov 00 in BL register for carry purposes.
7. First ASCII no. of strings in AL.
8. MS Nibble in multiplier no gap and is also zeroed.
9. Perform the function AH = AL * DL
10. Perform the function AH = AL/0A, AL = remain.
11. The content of AL.
12. Added with 00, which are in 1st destination location. The content of AL are unpacked.
13. Decimal no. are stored in 1st destination location.
14. Point at the next destination location
15. Point at the next location in string.
16. Content of AH are moved on next best location
17. Decrement the counter register.
18. If not zero continue multiply & storing unpacked digits.
19. HALT

Source Code:

```
INCLUDE "emu8086.inc"

MOV 1300H, 3H
MOV 1301H, 32H
MOV 1302H, 32H
MOV 1303H, 31H.
MOV 1304H, 33H
MOV 1305H, 35H
MOV 1306H, 36H
MOV 1307H, 32H.

MOV SI , 1300H
MOV DI, 1308 H
MOV DL, 34H.
MOV CX, 0008H
MOV BL, 00H.

Product: MOV AL, [SI]

AND AL, 0FH.
AND DL, 0FH.
MUL DL.

AAM
ADD. AL, BL.
AAA
MOV [DI], AL.
INC DI
MOV BL, AH.
INC SI
LOOP Product
ret.
```

Output



Result

Successfully implemented the code on the simulator