AIDS MICROPROCESSOR LAB S21 BATCH (2023-24)

Experiment 11 Title: Assembly language programming to compute the factorial of a positive integer 'n' using procedure.

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Date of Performance: 01/04/2024

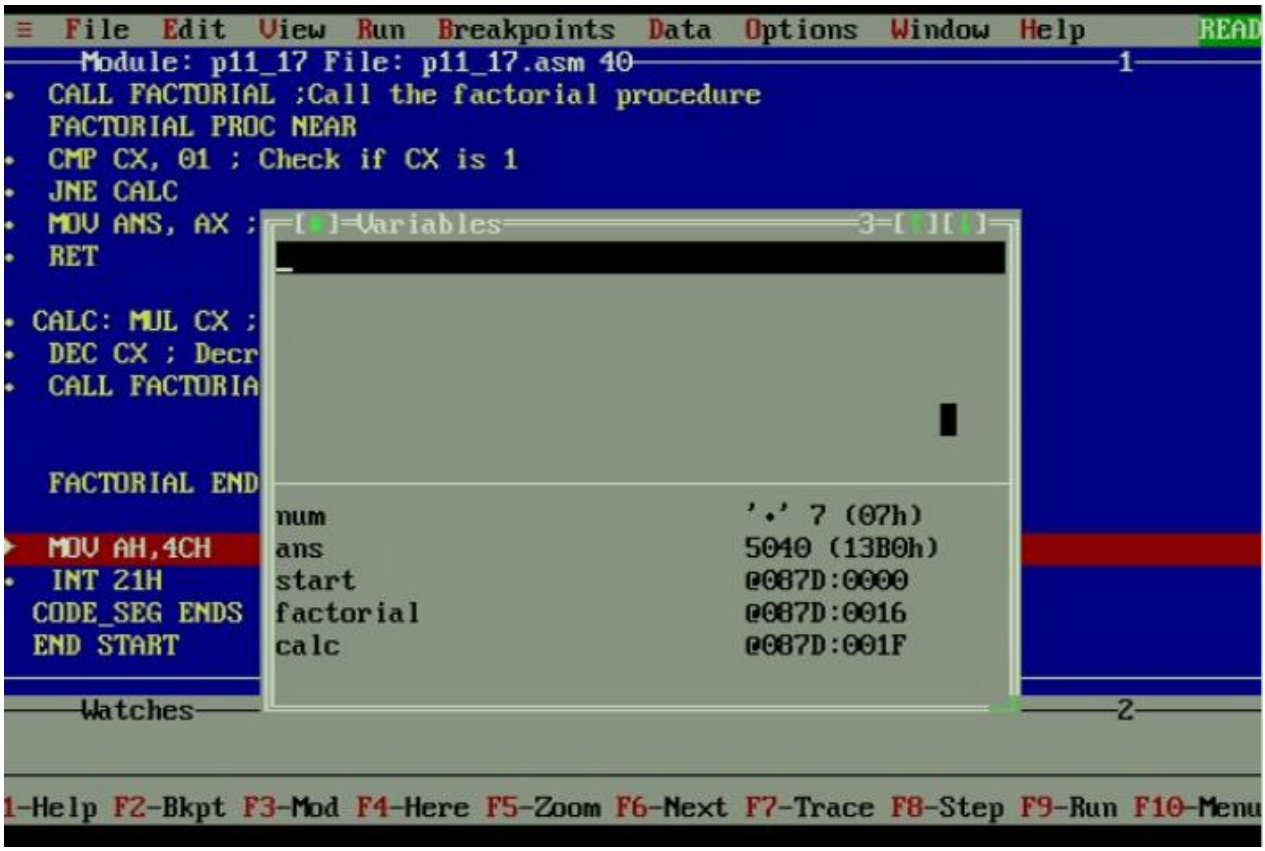
Batch: S2-1 Timing: 3:00-5:00 Date of Submission: -01/04/2024

Assembly language code

```
DATA_SEG SEGMENT
 NUM DB 07                    #Input positive integer
 ANS DW 00                    #Variable to store the factorial result
DATA_SEG ENDS

CODE_SEG SEGMENT
ASSUME CS:CODE_SEG, DS:DATA_SEG, ES:DATA_SEG
START:
MOV AX, DATA_SEG              #Initialize DS and ES with the address
MOV DS, AX                     of DATA_SEG
MOV ES, AX
MOV AH, 00                     # Clear AH register
MOV AL, NUM                    # Load the positive integer into AL
MOV CH, 00                     #Clear CH register
MOV CL, NUM                    #Load the positive integer into CL
DEC CX                        #Decrement CX for the initial computation

CALL FACTORIAL                 #Call the factorial procedure
 FACTORIAL PROC NEAR
CMP CX, 01                              #Check if CX is 1
```

```
JNE CALC
MOV ANS, AX                          # Store the result when CX is 1
RET
CALC: MUL CX                         #Multiply current value with CX
DEC CX                               #Decrement CX
CALL FACTORIAL                       #Recursive call to the factorial procedure
 FACTORIAL ENDP
MOV AH,4CH
INT 21H

CODE_SEG ENDS
END START
```

Result:



CONCLUSION: LO 2, LO 3 mapped.

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