Rajshahi University of Engineering & Technology

Course No.: CSE 3110
Course Title: Sessional Based on CSE 3109

Submitted To:

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Problem No: 2

Problem Description:

Write a program to display a "?", read two capital letters, and display them on the next line in alphabetical order.

Theory:

Registers used:

i) Accumulator (AX): For arithmetic and logical instructions.
ii) Base (BX): To hold the address of data. Here BL is used for holding the address of the first alphabet & BH is used for holding the address of second alphabet.
iii) Data (DX): To hold data for output.

Instructions used:

i)   MOV
ii) ADD
iii) CMP

Here, two JMP instructions were used. One was JNL (JUMP NOT LESS) which is a conditional jump and the other one was an unconditional jump.

Source Code:

```
.MODEL SMALL                    ADD BH, 32
.STACK 100H                     ADD BL, 32
.DATA
.CODE                           MOV AH,2
MAIN PROC                       MOV DL,BL
                                INT 21H
   MOV AH,2                     MOV DL,BH
   MOV DL, '?'                  INT 21H
   INT 21H                      JMP FINISH

   MOV AH,1                     IF:
   INT 21H                      ADD BL, 32
   MOV BL,AL                    ADD BH, 32
   INT 21H
   MOV BH,AL                    MOV AH,2
                                MOV DL,BH
   MOV AH,2                     INT 21H
   MOV DL,0AH                   MOV DL,BL
   INT 21H                      INT 21H
   MOV DL,0DH
   INT 21H                      FINISH:
                                MOV AH,4CH
   CMP BL,BH                    INT 21H
   JNL IF
                                   MAIN ENDP
                                END MAIN
```

Output:

Discussion:

Here, CMP was used to compare between the two alphabets. If one's ASCII value was greater than the other, it was shown later after converting it to lowercase by adding 32.