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| **FT\_Task-2** |
| **Code:**  .MODEL small  .STACK 100h  .DATA  msg1 db "Type a Character: $"  msg2 db "The ASCII code of $"  msg3 db " in hex is: $"  .CODE  MAIN PROC  mov ax, @DATA  mov ds, ax  start:  ; Display prompt  mov ah, 09h  lea dx, msg1  int 21h  ; Read a character  mov ah, 01h  int 21h  mov bl, al ; store character in BL  ; Check for Enter key  cmp al, 0Dh  je end\_program  ; Newline  mov ah, 02h  mov dl, 0Dh  int 21h  mov dl, 0Ah  int 21h  ; Print: The ASCII code of  mov ah, 09h  lea dx, msg2  int 21h  ; Print the character itself  mov ah, 02h  mov dl, bl  int 21h  ; Print: in hex is:  mov ah, 09h  lea dx, msg3  int 21h    ; Correct Hex Output Logic    ; HIGH nibble  mov cl, bl  shr cl, 4 ; move high nibble to low  and cl, 0Fh ; mask upper bits  cmp cl, 9  jbe hex\_high\_digit  add cl, 37h ; A-F  jmp show\_hex\_high  hex\_high\_digit:  add cl, 30h ; 0-9  show\_hex\_high:  mov dl, cl  mov ah, 02h  int 21h  ; LOW nibble  mov cl, bl  and cl, 0Fh  cmp cl, 9  jbe hex\_low\_digit  add cl, 37h  jmp show\_hex\_low  hex\_low\_digit:  add cl, 30h  show\_hex\_low:  mov dl, cl  mov ah, 02h  int 21h  ; Newline  mov ah, 02h  mov dl, 0Dh  int 21h  mov dl, 0Ah  int 21h  jmp start  end\_program:  mov ah, 4Ch  int 21h  MAIN ENDP  END MAIN |
| **Output:** |