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: