



Ahsanullah University of Science & Technology
Department of Computer Science & Engineering

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Section : B

Question No : 01

Question : Write a program that will prompt the user to enter a hex digit character (0-F), display it on the next line in decimal, and ask the user if he or she wants to do it again. If the user types "Y", the program repeats. If the user types "N" the program terminates. If the user enters an illegal character prompt the user to try again.

Answer :

. MODEL SMALL

. STACK 100H

. DATA

PROMPT DB 'Enter a HEX digit 0-9 or A-F : \$'

DECIMAL DB 'The equivalent Decimal digit is : \$'

CONT DB 'If you want to do it again the press Y else
press N : \$'

ILLEGAL DB 'Illegal Character - Enter 0..9 or A..F : \$'

NEXT_LINE DB 0DH, 0AH, "\$"

. CODE

MAIN PROC

MOV AX, @DATA

MOV DS, AX

START_1 :

MOV AH, 9

LEA DX, PROMPT

INT 21H

START_2 :

MOV AH, 1

INT 21H

MOV BL, AL

CMP BL, "A"

JB SINGLE_DIGIT ; jump to label if $BL < A$

CMP BL, "F"

JA ILLEGAL_CHARACTER ; jump to label if $BL > F$

JMP GREATER_THAN_NINE

SINGLE_DIGIT :

CMP BL, "0"

JB ILLEGAL_CHARACTER ; jump to label if $BL < 0$

CMP BL, "9"

JA ILLEGAL_CHARACTER ; Jump to label if BL > 9

JMP LESS-THAN-TEN

ILLEGAL_CHARACTER :

MOV AH, 9

LEA DX, NEXT_LINE

INT 21H

LEA DX, ILLEGAL

INT 21H

JMP START_2

LESS-THAN-TEN :

MOV AH, 9

LEA DX, NEXT_LINE

INT 21H

LEA DX, DECIMAL

INT 21H

MOV AH, 2

; print the contents of BL

MOV DL, BL

INT 21H

JMP CONTINUE

GREATER - THAN - NINE :

MOV AH, 9

LEA DX, NEXT_LINE

INT 21H

LEA DX, DECIMAL

INT 21H

MOV AH, 2

; display the digit 1

MOV DL, 31H

INT 21H

SUB BL, 11H

; subtract 11H from BL to find 2nd digit

MOV DL, BL

; display the 2nd digit

INT 21H

CONTINUE :

MOV AH, 9

LEA DX, NEXT_LINE

INT 21H

INT 21H

LEA DX, CONT

INT 21H

MOV AH, 1

INT 21H

CMP AL, "Y" ; compare AL with 'Y'

JE JUMP ; jump to label if AL = Y

JMP END

JUMP :

LEA DX, NEXT-LINE

MOV AH, 9

INT 21H

INT 21H

JMP START-1

END :

MOV AH, 4CH

INT 21H

MAIN ENDP

END MAIN

Question No : 02

Question : Write a program to read two capital letters and display them on the next line in alphabetical order.

Answer :

.MODEL SMALL

.STACK 100H

.CODE

.DATA

msg1 DB 'Enter the first character : \$'

msg2 DB 0DH, 0AH, 'Enter the second character : \$'

msg3 DB 0DH, 0AH, 'The letters in Alphabetical order is : \$'

MAIN PROC

MOV AX, @DATA

MOV DS, AX

MOV AH, 9

LEA DX, msg1

INT 21H

MOV AH, 1

INT 21H

MOV BL, AL

MOV AH, 9

LEA DX, msg2

INT 21H

MOV AH, 1

INT 21H

MOV BH, AL

CMP BL, BH

JG NEXT_ :

MOV CL, BL

MOV CH, BH

JMP NEXT_2 :

NEXT_:

MOV CL, BH

MOV CH, BL

NEXT_2 :

MOV AH, 9

LEA DX, msg3

INT 21H

MOV AH, 2

MOV DL, CL

INT 21H

MOV DL, CH

INT 21H

MOV AX, 4C00H

INT 21H

MAIN ENDP

END MAIN