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IBM19CS178

Binary Search

MODEL SMALL

macro to display arrays

DISPLAY MICRO MSG

LEA DX , MSG

MOV AH, 09H

INT 21H

ENDM

.DATA

LIST DB 01H, 05H, 07H, 10H, 12H, 14H

Number EQU ($-List); number is having value 6

KEY DB 10H

MSG1 DB, 0DH, 0AH "Element found in this list --- $"

MSG 2 DB 0DH, 0AH, "search failed. Element not in the list--$"

. CODE

START ; mov, AX, @DATA

mov DS, AX

mov CH, number-1 ; high value 6-1=5
mov CL, 00H ; low value.

AGAIN : mov SI, OFFSET; LIST ; LEA SI, LIST

XOR AX, AX ; MOV AX, 00H

CMP CL, CH ; SUBtraction of CL-CH

JE - NEXT

JNC FAILED.

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NEXT : MOV AL, CL ; AL =00H

      ADD AL, CH ; AL = 00 to5 = 05

          SHR , AL , 01H

      MOV  BL , AL

      XOR   AH, AH ; clear AH.

      MOV  BP , AX

      MOV  AL , DS : [BP][SI]

      CMP AL, KEY ; compare KEY and A[I]

       JE  SUCCESS ; If equal, Display success message

       JC  INCLOW

       MOV CH, BL

       DEC CH ;
                CH will have index of middle -1
                    element

          JMP  AGAIN

IN CLOW ;  MOV  CL, BL  ; IF key < A[I] shift law &
             INC  CL ; ch will have index middle +1 element
             JMP AGAIN.


SUCCESS : DISPLAY MSG 1
          JMP AGAIN FINAL

FAILED : DISPLAY MSG2

FINAL : MOV AH, LCH

         INT 21H

END START.
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