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001 ;=====
002 ASCII_TO_BRAILLE MACRO
003 LOCAL CHECK_CHAR,FOUND
004
005     PUSH SI
006     XOR SI,SI
007 CHECK_CHAR:
008     CMP AH,ASCII[SI]
009     JE FOUND
010     INC SI
011     JMP CHECK_CHAR
012 FOUND:
013     MOV AL,BRAILLE[SI]
014     POP SI
015
016 ENDM
017
018 ;=====
019 STACK SEGMENT STACK 'STACK'
020     DB     16 DUP('STACK')
021 STACK ENDS
022
023 ;=====
024 DATI SEGMENT
025
026 DATA_PORT      EQU 7AH
027 CTRL_PORT      EQU 7BH
028
029 BUSY            DB ?
030 CURRENT_ADDRESS DW ?
031 CURRENT_COUNT  DW ?
032 CURRENT_PRINTED DW ?
033 NUMBER_PREFIX_FLAG DB ?
034
035 STRINGA        DB "15 DICEMBRE 2011"
036 STRLEN         EQU $-STRINGA
037 ASCII          DB "ABCDEFGHIJKLMNOPQRSTUVWXYZ 1234567890"
038 BRAILLE        DB 01H,03H,21H,31H,11H,23H,33H,13H,22H,32H,05H,07H,25H,
039                35H,15H,27H,37H,17H,26H,36H,0DH,0FH,3AH,2DH,3DH,1DH,
040                00H,
041                01H,03H,21H,31H,11H,23H,33H,13H,22H,32H
042 DATI ENDS
043
044 ;=====
045 CODE SEGMENT
046
047 ;-----
048 ;Main program
049
050 MAIN PROC FAR
051
052 MOV BUSY,1
053
054 MOV BX,OFFSET STRINGA
055 MOV CURRENT_ADDRESS,BX
056 MOV CX,WORD PTR STRLEN
057 MOV CURRENT_COUNT,CX
058 MOV CURRENT_PRINTED,0
059
060 MOV NUMBER_PREFIX_FLAG,0
061
062 CALL FAR PTR CONVERT_AND_PRINT
063
064 MOV AL,1
065 OUT CTRL_PORT,AL
066
067 RET
068
069 MAIN ENDP
070
071 ;-----
072 ; subroutine
073
074 CONVERT_AND_PRINT PROC FAR
075
076 GET_CHAR:

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077     MOV AH,[BX]
078
079 CHECK_IF_SPACE:
080     CMP AH,20H ; 20H = SPACE IN ASCII
081     JNE CHECK_IF_DIGIT
082 SPACE:
083     MOV NUMBER_PREFIX_FLAG,0
084     MOV AL,00H ; 00H = SPACE IN BRAILLE
085     JMP PRINT
086
087 CHECK_IF_DIGIT:
088     CMP AH,'A'
089     JL DIGIT
090 ALPHA:
091     MOV NUMBER_PREFIX_FLAG,0
092     JMP CONVERT
093 DIGIT:
094     CMP NUMBER_PREFIX_FLAG,0 ; CHECK IF NUMBER PREFIX IS NEEDED
095     JE ATTACH_NUMBER_PREFIX
096     JMP CONVERT
097 ATTACH_NUMBER_PREFIX:
098     MOV NUMBER_PREFIX_FLAG,1
099     MOV AL,00111100B ; PREFIX FOR START OF NUMBER IN BRAILLE
100     JMP PRINT ; THERE WILL BE NO UPDATE OF BX AND CX IN THIS CASE
101
102 CONVERT: ;FOLLOWED BY PRINT
103     ASCII_TO_BRAILLE
104
105 PRINT:
106     OUT DATA_PORT,AL
107     INC CURRENT_PRINTED
108
109     RET
110
111 CONVERT_AND_PRINT ENDP
112
113 ;-----
114 ;Interrupt routine
115
116 BRAILLE_SERVICE_ROUTINE LABEL FAR
117 PUSH AX
118 PUSH BX
119 PUSH CX
120
121 MOV BX, CURRENT_ADDRESS
122 MOV CX, CURRENT_COUNT
123
124 CALL FAR PTR CONVERT_AND_PRINT
125
126 CMP NUMBER_PREFIX_FLAG,1 ; NO UPDATE OF BX AND CX
127 JE EXIT ; IF NUMBER PREFIX ATTACHED
128
129 UPDATE:
130     DEC CX
131     JZ FINISH
132     MOV CURRENT_COUNT,CX
133     INC BX
134     MOV CURRENT_ADDRESS,BX
135
136 EXIT:
137     POP CX
138     POP BX
139     POP AX
140     IRET
141
142 FINISH:
143     MOV BUSY,0
144     MOV AL,0
145     OUT CTRL_PORT,AL
146     JMP EXIT
147
148
149 CODE ENDS

```