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1  ;EXPERIMENT_4A: LCD INTERFACING IN 8 BIT MODE FOR DISPLAYING 'WELCOME TO VIIT'
2  ;SUCH THAT 'WELCOME' ON FIRST LINE AND 'TO VIIT' ON SECOND LINE.
3  ;NAME - ANIL RAJPUROHIT
4  ;ROLL NO.312046, BATCH -B2
5  ;DATE OF PERFORMANCE - 25/7/18
6
7
8  ORG 000H
9  RS EQU P2.0
10 EN EQU P2.1
11 RW EQU P2.2
12 LCD EQU P0
13
14 MOV A,#38H ;TO INITIALIZE LCD AS 8 BIT,5*7 RESOLUTION, 2 LINE
15 ACALL COMMAND ;SEND COMMAND TO LCD
16
17 MOV A,#0EH ;TURN ON THE DISPLAY AND CURSOR
18 ACALL COMMAND ;SEND COMMAND TO LCD
19
20 MOV A,#01H ;CLEAR LCD DISPLAY,MEMORY AND CURSOR AT HOME POSITION
21 ACALL COMMAND ;SEND COMMAND TO LCD
22
23 MOV A,#06H ;TO SHIFT CURSOR TO LEFT FOR NEXT CHARACTER AND ENABLE DISABLE
24 ACALL COMMAND ;SEND COMMAND TO LCD
25
26 MOV A,#80H ;SELECT 1ST LINE AND POSITION TO DISPLAY MESSAGE
27 ACALL COMMAND ;SEND COMMAND TO LCD
28
29 MOV A,#'W' ;DISPLAY CHAR 'W'
30 ACALL DISPLAY ;DISPLAY SUBROUTINE
31 MOV A,#'E' ;DISPLAY CHAR 'E'
32 ACALL DISPLAY ;DISPLAY SUBROUTINE
33 MOV A,#'L' ;DISPLAY CHAR 'L'
34 ACALL DISPLAY ;DISPLAY SUBROUTINE
35 MOV A,#'C' ;DISPLAY CHAR 'C'
36 ACALL DISPLAY ;DISPLAY SUBROUTINE
37 MOV A,#'O' ;DISPLAY CHAR 'O'
38 ACALL DISPLAY ;DISPLAY SUBROUTINE
39 MOV A,#'M' ;DISPLAY CHAR 'M'
40 ACALL DISPLAY ;DISPLAY SUBROUTINE
41 MOV A,#'E' ;DISPLAY CHAR 'E'
42 ACALL DISPLAY ;DISPLAY SUBROUTINE
43
44 MOV A,#0C0H ;SELECT 2ND LINE AND 1ST POSITION TO DISPLAY MESSAGE
45 ACALL COMMAND ;SEND COMMAND TO LCD
46 MOV A,#'T' ;DISPLAY CHAR 'T'
47 ACALL DISPLAY ;DISPLAY SUBROUTINE
48 MOV A,#'O' ;DISPLAY CHAR 'O'
49 ACALL DISPLAY ;DISPLAY SUBROUTINE
50 MOV A,#' ' ;DISPLAY CHAR ' '
51 ACALL DISPLAY ;DISPLAY SUBROUTINE
52 MOV A,#'V' ;DISPLAY CHAR 'V'
53 ACALL DISPLAY ;DISPLAY SUBROUTINE
54 MOV A,#'I' ;DISPLAY CHAR 'I'
55 ACALL DISPLAY ;DISPLAY SUBROUTINE
56 MOV A,#'I' ;DISPLAY CHAR 'I'
57 ACALL DISPLAY ;DISPLAY SUBROUTINE
58 MOV A,#'T' ;DISPLAY CHAR 'T'
59 ACALL DISPLAY ;DISPLAY SUBROUTINE
60
61 HERE: JMP HERE ;TO HOLD CHARACTERS
62
63 COMMAND: ;SUBROUTINE TO SEND COMMAND INSTRUCTION TO LCD
64 ACALL DELAY ;DELAY CALL
65 MOV P0,A ;MOVE COMMAND TO LCD THROUGH PORT
66 CLR RS ;SELECTING COMMAND REGISTER FOR COMMAND
67 CLR RW ;SELECTING WRITE MODE
68 SETB EN ;FOR WRITE GIVE HIGH TO LOW PULSE
69 NOP ;WAIT FOR TWO MACHINE CYCLES
70 NOP
71 CLR EN ;CLR EN PIN

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72         RET
73
74  DISPLAY:                ;SUBROUTINE TO DISPLAY INSTRUCTION TO LCD
75         ACALL DELAY      ;DELAY CALL
76         MOV  P0,A        ;MOVE DATA TO LCD THROUGH PORT
77         SETB RS          ;SELECTING DATA REGISTER FOR COMMAND
78         CLR  RW          ;SELECTING WRITING MODE
79         SETB EN          ;FOR WRITE GIVE HIGH TO LOW PULDE
80         NOP              ;WAIT FOR TWO MACHINE CYCLES
81         NOP
82         CLR  EN          ;CLR EN PIN
83         RET
84
85  DELAY:
86         MOV  TMOD,#01H    ;TIMER 0,MODE 1
87         MOV  TH0,#0F8H    ;LOAD HIGH BYTE
88         MOV  TL0,#0CCH    ;LOAD LOW BYTE
89         SETB TR0          ;START TIMER
90  L3:     JNB  TF0,L3       ;MONITOR FLAG UNTIL IT ROLL OVER
91         CLR  TR0          ;STOP TIMER
92         CLR  TF0          ;CLEAR FLAG
93         RET
94
95  END
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