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;EXP NO.1(A):LCD INTERFACING IN 8 BIT MODE FOR DISPLAYING "WELCOME TO VIIT" SUCH THAT 'WELCOME'
;ON FIRST LINE AND 'TO VIIT' ON SECOND LINE
;NAME - AAADESH PISE
;ROLL NO.312041
;BATCH -B2
;DATE OF PERFORMANCE - 25/7/18

ORG 000H
RS EQU P2.0
EN EQU P2.1
RW EQU P2.2
LCD EQU P0

MOV A,#38H    ;TO INITIALIZE LCD AS 8 BIT,5*7 RESOLUTION, 2LINE
ACALL COMMAND ;CALL THE COMMAND SUBROUTINE

MOV A,#0EH    ;TURN ON THE DISPLAY AND CURSOR
ACALL COMMAND ;CALL THE COMMAND SUBROUTINE

MOV A,#01H    ;CLEAR LCD DISPLAY,MEMORY AND CURSOR AT HOME POSITION
ACALL COMMAND ;CALL THE COMMAND SUBROUTINE

MOV A,#06H    ;TO SHIFT CURSOR TO LEFT FOR NEXT HARACTER AND ENABLE DISABLE
ACALL COMMAND ;CALL THE COMMAND SUBROUTINE

MOV A,#80H    ;SELECT 1ST LINE AND POSITION TO DISPLAY MESSAGE
ACALL COMMAND ;CALL THE COMMAND SUBROUTINE

MOV A,#'W'    ; MOVE 'W' TO ACC
ACALL DISPLAY ;DISPLAY SUBROUTINE
MOV A,#'E'    ; MOVE 'E' TO ACC
ACALL DISPLAY ;DISPLAY SUBROUTINE
MOV A,#'L'    ; MOVE 'L' TO ACC
ACALL DISPLAY ;DISPLAY SUBROUTINE
MOV A,#'C'    ; MOVE 'C' TO ACC
ACALL DISPLAY ;DISPLAY SUBROUTINE
MOV A,#'O'    ; MOVE 'O' TO ACC
ACALL DISPLAY ;DISPLAY SUBROUTINE
MOV A,#'M'    ; MOVE 'M' TO ACC
ACALL DISPLAY ;DISPLAY SUBROUTINE
MOV A,#'E'    ; MOVE 'E' TO ACC
ACALL DISPLAY ;DISPLAY SUBROUTINE

MOV A,#0C0H   ;SELECT 2ND LINE AND POSITION TO DISPLAY MESSAGE
ACALL COMMAND ;DISPLAY SUBROUTINE
MOV A,#'T'    ; MOVE 'T' TO ACC
ACALL DISPLAY ;DISPLAY SUBROUTINE
MOV A,#'O'    ; MOVE 'O' TO ACC
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   ACALL DISPLAY ;DISPLAY SUBROUTINE
   MOV A,#' '    ; MOVE '' TO ACC
   ACALL DISPLAY ;DISPLAY SUBROUTINE
   MOV A,#'V'    ; MOVE 'V' TO ACC
   ACALL DISPLAY ;DISPLAY SUBROUTINE
   MOV A,#'I'    ; MOVE 'I' TO ACC
   ACALL DISPLAY ;DISPLAY SUBROUTINE
   MOV A,#'I'    ; MOVE 'I' TO ACC
   ACALL DISPLAY ;DISPLAY SUBROUTINE
   MOV A,#'T'    ; MOVE 'T' TO ACC
   ACALL DISPLAY ;DISPLAY SUBROUTINE

   HERE:SJMP HERE; TO HOLD CHARACTERS

   COMMAND:       ;SUBROUTINE TO COMMND INSTRUCTION TO LCD
   ACALL DELAY    ;DELAY CALL
   MOV P0,A       ;MOVE COMMAND TO LCD THROUGH PORT
   CLR RS         ;SELECTING COMMAND REGISTER FOR COMMAND
   CLR RW         ;SELECTING WRITING MODE
   SETB EN        ;FOR WRITE GIVE HIGH TO LOW PULSE
   NOP
   NOP
   CLR EN         ;CLR EN PIN
   RET

   DISPLAY:       ;SUBROUTINE TO DISPLAY INSTRUCTION TO LCD
   ACALL DELAY    ;DELAY CALL
   MOV P0,A       ;MOVE DATA TO LCD THROUGH PORT
   SETB RS        ;SELECTING DATA REGISTER FOR COMMAND
   CLR RW         ;SELECTING WRITING MODE
   SETB EN        ;FOR WRITE GIVE HIGH TO LOW PULDE
   NOP
   NOP
   CLR EN         ;CLR EN PIN
   RET

   DELAY:
      MOV TMOD,#01H  ;TIMER 0,MODE 1
      MOV TH0,#0F8H  ;LOAD HIGH BYTE
      MOV TL0,#0CCH  ;LOAD LOW BYTE
      SETB TR0       ;START TIMER
   L3:JNB TF0,L3     ;MONITOR FLAG UNTILL IT ROLL OVER
      CLR TR0        ;STOP TIMER
      CLR TF0        ;CLEAR FLAG
      RET
      END
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