EXPERIMENT-10B

HARDWARE INTERFACING – TRAFFIC LIGHT

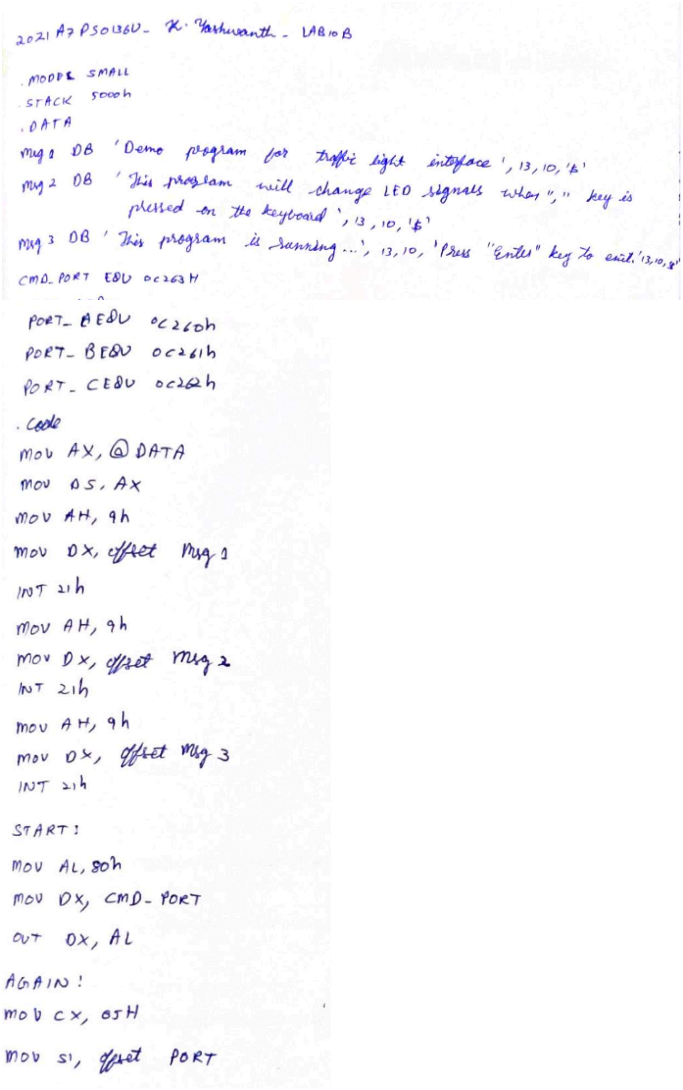
Aim: To Interface a traffic light to 8086 Microprocessor through 8255 Programmable Peripheral Interface (PPI).

Equipment's: PC, 8255 Interfacing card (PCI Card) Traffic Light Interface

Video recording of demonstration:

[lab10B_op_2021A7PS0136U.mp4]

Assembly code for TRAFFIC LIGHT Interface program uses DOS Interrupts:



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.MODEL SMALL
.STACK 5000h
.DATA
msg1 DB 'Demo program for traffic light interface', 13, 10, '$'
msg2 DB 'This program will change LED signals when "," key is
        pressed on the keyboard', 13, 10, '$'
msg3 DB 'This program is running...', 13, 10, 'Press "Enter" key to exit.', 13, 10, '$'
CMD_PORT EQU 0C263H
PORT_AEQU 0C260h
PORT_BEQU 0C261h
PORT_CEQU 0C262h
.code
MOV AX, @DATA
MOV DS, AX
MOV AH, 9h
MOV DX, offset msg1
INT 21h
MOV AH, 9h
MOV DX, offset msg2
INT 21h
MOV AH, 9h
MOV DX, offset msg3
INT 21h
START:
MOV AL, 80h
MOV DX, CMD_PORT
OUT DX, AL
AGAIN:
MOV CX, 05H
MOV SI, offset PORT
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NEXTST:
 MOV AL, CS:[SI]
 MOV DX, PORT_A
 OUT DX, AL
 INC SI
 INC DX
 MOV AL,CS:[SI]
 OUT DX,AL
 INC SI
 INC DX
 MOV AL, CS:[SI]
 OUT DX, AL
 INC SI
 PUSH SI
 PUSH CX
 WSER:
 NOP ;  keyboard mode
 PUSH AX
 MOV AH,0H
 INT 16H  ; for intrpt for keyboard i/p
 CMP AL,0DH
 JNE L1
  MOV AX, 4C00H
  INT 21H

  L1:
    POP AX
    LOOP NEXTST
    JMP AGAIN
  $
 DELAY:
      MOV BL,0Fh
 PUSH CX
  DLY5:
   MOV CX, 1FFFH
DLY10:
   NOP
   LOOP DLY10
   DEC BL
   JNZ DLY5
   POP CX
   RET

PORTS:
   DB 88H, 83H, 0F2H
   DB 88H, 87H, 0F2H
   DB 38H, 88H, 0F4H
   DB 78H, 88H, 0F4H
   DB 83H, 88H, 0F8H
   DB 87H, 88H, 0F8H
   DB 88H, 38H, 0F1H
   DB 88H, 78H, 0F1H
   DB 88H, 88H, 00H
   DB 88H, 88H, 00H
   END
```