Ahsanullah University of Science & Technology

Department of Computer Science & Engineering

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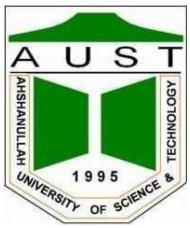

Lab Assignment
Microprocessors lab
CSE 3108

Assignment No: 02
Date of submission: 01/02/2021

Submitted To:

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Section: A1

Set Number :21
Question 01: Write an assembly code to display BC2 in Seven Segment Display Using Array.

Assembly Code:

```
S SEGMENT PARA PUBLIC 'CODE'

ASSUME CS: L
ORG 1000H

START:

        ;Control Register turn on
        MOV AL,80H
        OUT 1FH,AL
        MOV SI,OFFSET DATA
        MOV BX,12H
        TOP:
        MOV AL,BYTE PTR CS:[SI]
        OUT 19H,AL

        ;Delay
        MOV CX,0FFH
        L1: LOOP L1
        MOV CX,0FFH
        L2: LOOP L2
        MOV CX,0FFH

        L3: LOOP L3
        MOV CX,0FFH
        L4: LOOP L4
        INC SI
        DEC BX
        CMP BX, 0000H
        JE EXIT
        JMP TOP

      DATA:
            DB 0DFH ; B
            DB 0DEH
            DB 0DCH
            DB 09CH
            DB 098H
            DB 090H
```

```
                DB 080H
                DB 0FFH ; blank

                DB 0FEH ; C
                DB 0DEH
                DB 0CEH
                DB 0C6H
                DB 0FFH ; blank

                DB 0FEH ; 2
                DB 0FCH
                DB 0BCH
                DB 0ACH
                DB 0A4H

            EXIT:
S ENDS

    END START
```

Question 02: R1(ON)-R1(OFF)-(Y+G(ON))-R2(ON)

```
LA SEGMENT PARA PUBLIC 'CODE'
ASSUME CS: LA
ORG 1000H

        START:
                ;control register turn on
                MOV AL,80H
                OUT 1FH,AL

                ;segment address forcefully off
                MOV AL,0FFH
                OUT 19H,AL
                MOV SI,OFFSET DATA
                MOV BX,04H

                L1:
                MOV AL,BYTE PTR CS:[SI]
                OUT 1BH,AL
                ;for delay
                MOV CX,0FFFFH
```

```
L2: LOOP L2
MOV CX, FFFFH

L3: LOOP L3
MOV CX, FFFFH

L4: LOOP L4
MOV CX, FFFFH

L5: LOOP L5
INC SI
DEC BX
CMP BX, 00H
JE EXIT
JMP L1

DATA:
    DB 01H ;R1 ON
    DB 00H ;R1 OFF
    DB 06H ;Y+G ON
    DB 0EH ;Y+G+R2

EXIT:
LA ENDS
    END START
```

Set Number:09
Question 03: **Write an assembly code to glow dots on Dot Matrix Display**

```
DM SEGMENT PARA PUBLIC 'CODE'
ASSUME CS: DM
ORG 1000H
START:
MOV AL,80H
OUT 1FH,AL

L1:
;R6C3
;PORT A
MOV AL,FFH
OUT 18H, AL
;PORTB
MOV AL,BFH
OUT 1AH,AL
;PORT C
MOV AL,8H
OUT 1CH,AL
;for delay
MOV CX, FFFFH
L0: LOOP L0
MOV CX, FFFFH
L1: LOOP L1
;R5C2C4

;PORT A
MOV AL,FFH
OUT 18H, AL
;PORTB

MOV AL,DFH
OUT 1AH,AL
;PORT C

MOV AL,14H
OUT 1CH,AL
;for delay
MOV CX, FFFFH
```

```
L2: LOOP L2
MOV CX, FFFFH
L3: LOOP L3
;R4C1C5
;PORT A

MOV AL,FFH
OUT 18H, AL

;PORTB

MOV AL,EFH
OUT 1AH,AL
;PORT C
MOV AL,22H
OUT 1CH,AL
;for delay
MOV CX, FFFFH

L4: LOOP L4
MOV CX, FFFFH
L5: LOOP L5
;R3C2C3C4
;PORT A

MOV AL,FFH
OUT 18H, AL
;PORTB

MOV AL,F7H
OUT 1AH,AL
;PORT C

MOV AL,1CH


OUT 1CH,AL
;for delay

MOV CX, FFFFH

L6: LOOP L6
MOV CX, FFFFH
```

```
L7: LOOP L7
DM ENDS
END START
```