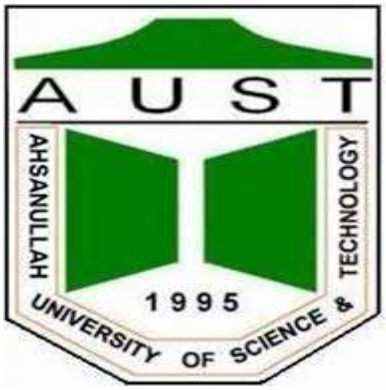

Ahsanullah University of Science and Technology (AUST)

Department of Computer Science and Engineering

Course No : CSE3108

Course Title: Microprocessor Lab

Assignment No: 4

Set No: 8

Submitted To:

Farzad Ahmed

Lecturer in CSE, AUST

Submitted By:

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Section : B2

Part 1:

```
DM SEGMENT PARA PUBLIC 'CODE'
        ASSUME CS: DM
        ORG 1000H
        START:
          MOV AL , 80H
          OUT 1FH, AL
          TOP1:
                MOV SI, OFFSET DATA
                MOV BX, 70H
          TOP:
                MOV AL, BYTE PTR CS: [SI]
                OUT 18H, AL   ; PORT A
                INC SI
                DEC BX

                MOV AL, BYTE PTR CS: [SI]
                OUT 1AH, AL   ; PORT B
                INC SI
                DEC BX

                MOV AL, BYTE PTR CS: [SI]
                OUT 1CH, AL  ; PORT C
                INC SI
                DEC BX
```

```
        MOV AL, BYTE PTR CS: [SI]
        OUT 19H, AL

        ; DELAY
        MOV DX,FFFFH
        L1:
        MOV CX,FFFFH
        L2:
        LOOP L2
        DEC DX
        JNZ L1

        INC SI
        DEC BX
        CMP BX, 0000H
        JE TOP1
        JMP TOP

DATA:
                DB 7FH
                DB FFH     ;1
                DB 01H
                DB F8H

                DB BFH
```

```
DB FFH     ;2
DB 01H
DB 82H

DB DFH
DB FFH     ;3
DB 01H
DB 92H

DB EFH
DB FFH     ;4
DB O1H
DB 99H

DB F7H
DB FFH     ;5
DB 01H
DB B0H

DB FBH
DB FFH     ;6
DB 01H
DB A4H

DB FDH
DB FFH     ;7
```

```
DB 01H
DB F9H

DB EFH
DB FFH     ;8
DB 01H
DB C0H

DB FEH
DB FFH     ;9
DB 02H
DB C0H

DB FEH
DB FFH     ;10
DB 04H
DB C0H

DB FEH
DB FFH     ;11
DB 08H
DB C0H

DB EFH
DB FFH    ;12
DB 10H
```

```
DB C0H

DB EFH
DB FFH     ;13
DB 20H
DB C0H

DB EFH
DB FFH     ;14
DB 40H
DB C0H

DB FEH
DB FFH     ;15
DB 80H
DB C0H

DB FDH
DB FFH     ;16
DB 80H
DB F9H

DB FBH
DB FFH     ;17
DB 80H
DB A4H
```

```
DB F7H
DB FFH     ;18
DB 80H
DB B0H

DB F7H
DB FFH     ;19
DB 40H
DB B0H

DB F7H
DB FFH     ;20
DB 20H
DB B0H

DB F7H
DB FFH     ;21
DB 10H
DB B0H

DB F7H
DB FFH     ;22
DB 08H
DB BOH
```

```
DB F7H
DB FFH     ;23
DB 04H
DB 0BH

DB EFH
DB FFH      ;24
DB 04H
DB 99H

DB DFH
DB FFH     ;25
DB 04H
DB 92H

DB BFH
DB FFH     ;26
DB 04H
DB 82H

DB 7FH
DB FFH      ;27
DB 04H
DB F8H

DB 7FH
```

```
                DB FFH      ;28
                DB 02H
                DB F8H
DM ENDS
        END START
```

Part 2:

```
DM SEGMENT PARA PUBLIC 'CODE'
        ASSUME CS: DM
        ORG 1000H
        START:
          MOV AL, 80H
          OUT 1FH, AL
          TOP1:
                MOV SI, OFFSET DATA
                MOV BX, 70H
          TOP:
                MOV AL, BYTE PTR CS: [SI]
                OUT 18H, AL    ; PORT A
                INC SI
                DEC BX

                MOV AL, BYTE PTR CS: [SI]
                OUT 1AH, AL    ; PORT B
                INC SI
                DEC BX
```

```
        MOV AL, BYTE PTR CS: [SI]
        OUT 1CH, AL     ; PORT C
        INC SI
        DEC BX

        MOV AL, BYTE PTR CS: [SI]
        OUT 1BH, AL

        ; DELAY
        MOV DX, FFFFH
        L1:
        MOV CX, FFFFH
        L2:
        LOOP L2
        DEC DX
        JNZ L1

        INC SI
        DEC BX
        CMP BX, 0000H
        JE TOP1
        JMP TOP

DATA:
                DB 7FH
                DB 7FH          ;1 ORANGE
                DB 01H
```

```
DB 0CH

DB BFH
DB BFH          ;2 ORANGE
DB 01H
DB 0CH

DB DFH
DB DFH        ;3 ORANGE
DB 01H
DB 0CH

DB EFH
DB EFH        ;4 ORANGE
DB 01H
DB 0CH

DB F7H
DB F7H       ;5 ORANGE
DB 01H
DB 0CH

DB FBH
DB FBH      ;6 ORANGE
DB 01H
DB 0CH

DB FDH
```

```
DB FDH      ;7 ORANGE
DB 01H
DB 0CH

DB FEH
DB FEH      ;8 ORANGE
DB 01H
DB 0CH

DB FEH
DB FEH      ;9 ORANGE
DB 02H
DB 0CH

DB FEH
DB FEH     ;10 ORANGE
DB 04H
DB 0CH

DB FFH
DB FEH     ;11 RED
DB 08H
DB 01H

DB FFH
DB FEH    ;12 RED
DB 10H
DB 01H
```

```
DB FFH
DB FEH     ;13 RED
DB 20H
DB 01H

DB FFH
DB FEH     ;14 RED
DB 40H
DB 01H

DB FFH
DB FEH    ;15 RED
DB 80H
DB 01H

DB FFH
DB FDH    ;16 RED
DB 80H
DB 01H

DB FFH
DB FBH    ;17 RED
DB 80H
DB 01H

DB FFH
DB F7H    ;18 RED
```

```
DB 80H
DB 01H

DB FFH
DB EFH    ;18 RED
DB 80H
DB 01H

DB EFH
DB FFH    ;19 GREEN
DB 40H
DB 02H

DB EFH
DB FFH    ;20 GREEN
DB 20H
DB 02H

DB EFH
DB FFH    ;21 GREEN
DB 10H
DB 02H

DB EFH
DB FFH    ;22 GREEN
DB 08H
DB 02H
```

```
DB EFH
DB FFH    ;23 GREEN
DB 04H
DB 02H

DB DFH
DB FFH    ;24 GREEN
DB 04H
DB 04H

DB BFH
DB FFH    ;25 GREEN
DB 04H
DB 02H

DB 7FH
DB FFH    ;26 GREEN
DB 04H
DB 02H

DB 7FH
DB FFH    ;27 GREEN
DB 02H
DB 02H

DB 7FH
DB FFH    ;28 GREEN
DB 01H
```

```
                DB 02H

        DM ENDS

END START
```