



Ahsanullah University of Science and Technology (AUST)
Department of Computer Science and Engineering

LAB REPORT

Course No : CSE3108
Course Title : Microprocessors Sessional
Assignment No : 06
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Submitted By:

Assignment Group: 01

Group : B1
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Question:

Show, "AHZMYZMS" scrolling in DOT MATRIX

"54575975" in 7-segment display and glow Green, Yellow and Red LED as per instruction.

Answer:

DSEG SEGMENT 'DATA'

DOT_MATRIX DB 032H, 49H, 49H, 49H, 26H, 7H, 2H, 4H, 2H,
0FFH,

DB 43H, 45H, 49H, 51H, 61H, 1H, 2H, 70H, 2H, 1H,

DB 7FH, 2H, 4H, 2H, 7FH, 43H, 45H, 49H, 51H, 61H,

DB 7FH, 8H, 8H, 8H, 7FH, 7EH, 9H, 9H, 9H, 7EH

COUNTER DB 0

DSEG ENDS

SSEG SEGMENT STACK 'STACK'

DW 100H DUP(?)

SSEG ENDS

CSEG SEGMENT 'CODE'

START PROC FAR

PUSH DS

MOV AX, DSEG

MOV DS, AX

MOV ES, AX

MOV CX, 0

MOV DI, 0

; ID-54

DISPLAY:

MOV DX, 2070

MOV AL, 00000001B

OUT DX, AL

MOV DX, 2000H

MOV AL, 01000000B

OUT DX, AL

MOV DX, 2030H

MOV AL, 00000001B

OUT DX, AL

MOV DX, 2000H

MOV AL, 01100000B

OUT DX, AL

MOV DX, 2000H

MOV AL, 01100000B

OUT DX, AL

MOV DX, 2030H

MOV AL, 00100000B

OUT DX, AL

MOV DX, 2000H

MOV AL, 0111000B

OUT DX, AL

MOV DX, 2000H

MOV AL, 0111100B

OUT DX, AL

MOV DX, 2030H

MOV AL, 01100001B

OUT DX, AL

MOV DX, 2000H

MOV AL, 0111110B

OUT DX, AL

MOV DX, 2001H

MOV AL, 00000001B

OUT DX, AL

MOV DX, 2030H

MOV AL, 01100101B

OUT DX, AL

MOV DX, 2002H

MOV AL, 00000001B

OUT DX, AL

MOV DX, 2003H

MOV AL, 00000001B

OUT DX, AL

MOV DX, 2004H

MOV AL, 00000010B

OUT DX, AL

MOV DX, 2030H

MOV AL, 01101101B

OUT DX, AL

MOV DX, 2004H

MOV AL, 00000110B

OUT DX, AL

MOV DX, 2004H
MOV AL, 00001110B
OUT DX, AL

MOV DX, 2004H
MOV AL, 00011110B
OUT DX, AL

MOV DX, 2004H
MOV AL, 00111110B
OUT DX, AL

MOV DX, 2004H
MOV AL, 01111110B
OUT DX, AL

MOV DX, 2001H
MOV AL, 00001001B
OUT DX, AL

MOV DX, 2002H
MOV AL, 00001001B
OUT DX, AL

MOV DX, 2003H
MOV AL, 00001001B
OUT DX, AL

MOV CX, 04FH
LI : LOOP LI

MOV DX, 2005H
MOV AL, 00000111B
OUT DX, AL

MOV DX, 2031H
MOV AL, 00100000B
OUT DX, AL

MOV DX, 2005H
MOV AL, 00001111B
OUT DX, AL

MOV DX, 2005H
MOV AL, 00011111B
OUT DX, AL

MOV DX, 2005H
MOV AL, 00111111B
OUT DX, AL

MOV DX, 2031H
MOV AL, 01100000B
OUT DX, AL

MOV DX, 2005H
MOV AL, 01111111B
OUT DX, AL

MOV DX, 2006H

MOV AL, 00001000B

OUT DX, AL

MOV DX, 2031H

MOV AL, 01100010B

OUT DX, AL

MOV DX, 2007H

MOV AL, 00001000B

OUT DX, AL

MOV DX, 2008H

MOV AL, 00001000B

OUT DX, AL

MOV DX, 2009H

MOV AL, 00000001B

OUT DX, AL

MOV DX, 2031H

MOV AL, 01100110B

OUT DX, AL

MOV DX, 2009H

MOV AL, 00000011B

OUT DX, AL

MOV DX, 2009H

MOV AL, 00000111B

OUT DX, AL

MOV DX, 2009H

MOV AL, 00001111B

OUT DX, AL

MOV DX, 2009H

MOV AL, 00011111B

OUT DX, AL

MOV DX, 2009H

MOV AL, 00111111B

OUT DX, AL

MOV DX, 2009H

MOV AL, 01111111B

OUT DX, AL

MOV CX, 04FH

L2: LOOP L2

MOV COUNTER, 0

MOV SI, 40

CONTINUE:

MOV DX, 2027H

MOV CX, 41

DEC SI

INC COUNTER

CMP COUNTER, 41

JAE CLEAR0

SCROLL:

MOV AL, DOT-MATRIX[SI]

OUT DX, AL

INC SI

DEC DX

CMP DX, 1FFFH

JBE CONTINUE

CMP SI, 40

JAE NEXT

LOOP SCROLL

NEXT:

MOV SI, 0

LOOP SCROLL

CLEAR0:

MOV CX, 04FH

L13: LOOP L13

MOV DX, 2070H

MOV AL, 00000000B

OUT DX, AL

MOV DX, 2000H

CLEAR1:

MOV AL, 00000000B

OUT DX, AL

INC CX

INC DX

CMP CX, 41

JLE CLEAR1

MOV CX, 04FH

L14: LOOP L14

MOV DX, 2030H

MOV AL, 00000000B

OUT DX, AL

MOV DX, 2031H

MOV AL, 00000000B

OUT DX, AL

MOV DX, 2032H

MOV AL, 00000000B

OUT DX, AL

MOV DX, 2033H

MOV AL, 00000000B

OUT DX, AL

MOV DX, 2034H

MOV AL, 00000000B

OUT DX, AL

MOV DX, 2035H

MOV AL, 00000000B

OUT DX, AL

MOV DX, 2036H

MOV AL, 00000000B

OUT DX, AL

MOV DX, 2037H

MOV AL, 00000000B

OUT DX, AL

MOV CX, 04FH

L15: LOOP L15

MOV CX, 0

INC DI

CMP DI, 5

JL DISPLAY

START ENDP

CSEG ENDS

END START