

FR. Conceicao Rodrigues College of Engineering Department of
Computer Engineering

7. DISPLAY A TO Z ON SCREEN.

1. Course, Subject & Experiment Details

Academic Year	2023-24	Estimated Time	Experiment No. 7– 02 Hours
Course & Semester	S.E. (Comps) – Sem. IV	Subject Name	Microprocessor
Chapter No.	2	Chapter Title	Instruction Set and Programming
Experiment Type	Software	Subject Code	CSC405

Rubrics

Timeline (2)	Practical Skill & Applied Knowledge (2)	Output (3)	Postlab (3)	Total (10)	Sign

2. Aim & Objective of Experiment

7(A) DISPLAY A TO Z ON SCREEN

Objective : To store A to Z Alphabets on an array and display them on user screen.

3. Software Required

TASM Assembler

4 . Brief Theoretical Description

Pre-Requisites: 1. Knowledge of TASM directives.
 2. Knowledge of DOS interrupts.

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3. Knowledge of string instruction and MACRO 5.

Algorithm:

1. Initialize the data segment.
2. Store all Alphabets in array.
3. Initialize counter to 1AH.
4. Load starting Address of array in to SI.
5. Get each character in DL.
6. Display Character on user screen.
7. Increment SI.
8. Decrement counter.
9. Repeat step 5 to 8 until count becomes Zero.
10. Stop

CODE:

.8086

.model small

.data counter equ

26 start_ascii equ

65

.code main:

MOV AX,@DATA

MOV DS,AX

MOV CX, counter

MOV SI, start_ascii

display_loop:

MOV DX, SI

INC SI

DEC CX

JNZ display_loop

MOV AH,4CH

INT 21H

END main

```

.model small
.stack 100h
.data
    alphabet db 'ABCDEFGHIJKLMNOPQRSTUVWXYZ'

.code
main proc
    mov ax, @data
    mov ds, ax
    mov cx, 1Ah
    lea si, alphabet
display_loop:
    mov dl, [si]
    mov ah, 02h
    int 21h
    inc si
loop display_loop
    mov ah, 4Ch
    int 21h
main endp
end main

```

DOSBox 0.74-3, Cpu speed: 3000 cycles, Frameskip 0, Progra...
CPU 80486
cs:0000 B8AF44 mov ax,44AF ax 4C5A c=0
cs:0003 BED8 mov ds,ax bx 0000 z=0
cs:0005 B91A00 mov cx,001A cx 0000 s=0
cs:0008 BE0000 mov si,0000 dx 005A o=0
cs:000B BA14 mov dl,[si] si 001A p=0
cs:000D B402 mov ah,02 di 0000 a=0
cs:000F CD21 int 21 bp 0000 i=1
cs:0011 46 inc si sp 0100 d=0
cs:0012
ds:0000 41 42 43 44 45 46 47 48 ABCDEFGH
ds:0008 49 4A 4B 4C 4D 4E 4F 50 IJKLMNOP
ds:0010 51 52 53 54 55 56 57 58 QRSTUVWX
ds:0018 59 5A 5B 5C 5D 5E 5F 60 YZ
cs:001A
cs:001C
cs:001E 0000 add [bx+si],al
es:0000 CD 20 FF 9F 00 EA FF FF = f R
es:0008 AD DE E5 01 00 15 AF 01 i R S
es:0010 00 15 7D 02 1C 0F 92 01 S R
es:0018 01 01 01 00 02 FF FF FF E R
es:0020 FF FF FF FF FF FF FF
ss:0108 0000
ss:0106 0000
ss:0104 0000
ss:0102 0000
ss:0100 0000

F1-Help F2-Bkpt F3-Mod F4-Here F5-Zoom F6-Next F7-Trace F8-Step F9-Run F10-Menu

7(B) DISPLAY CHARACTER FROM KEYBOARD UNTIL 0 IS ENTERED.

Objective: To Read Character from Keyboard and display on screen until 0 is pressed.

Theory: Instructions used in program are:

MOV AH,08H

INT 21H

Read Input From Keyboard without echo and store at AL.

MOV AH,02H

INT 21H

Display Character on screen. Character should be in DL register.

Algorithm:

1. Initialize the data segment.
2. Read input from keyboard.
3. Compare input with ASCII value of ZERO.
4. If result is 0, go to step 7.
5. Move content of AL to DL, to display it on screen.

6. Display character on screen.

7. Stop

CODE:

```
.8086
.model small
.stack 100h
.data
.code START:
    mov ax,@data
    mov ds,ax

    mov ah,08H int 21h

    cmp al,'0' je
    exit_program

    mov ah,02h int 21h

    jmp start exit_program:
    mov ah,4ch
    int 21h end
start
```

