



RAJSHAHI UNIVERSITY OF ENGINEERING AND TECHNOLOGY

Department of Computer Science and Engineering

Course title: Sessional Based on CSE 3109

Course code: CSE 3110

Report No: 05

Topic: Array

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9.1 Problem Statements: Write a program that will take a line as input, print uppercase letters converted to lower case and vice versa, separate all the digits.

Objectives: using assembly:

- I. To store inputs in array
- II. To traverse array
- III. To output from array

Code:

```
include "emu8086.inc"
.model small

.data
msg db 60 dup(?)

.code
main proc
    mov ax,@data
    mov ds,ax
    mov si,offset msg

input:
    mov ah,1
    int 21h
    cmp al,13
    je display
    mov [si],al
    inc si
    jmp input

display:
    mov [si],'$'
    mov di,offset msg
    mov dl,13
    mov ah,2
    int 21h
    mov dl,10
    mov ah,2
    int 21h

again:
    cmp [di],'$'
    je END_IT
    ;xor dl,dl
    mov dl,[di]

    cmp dl,'a'
    jnge end_then1

    cmp dl,'z'
    jnle end_then1

    jmp then1
end_then1:
    cmp dl,'A'
    jnge end_then2

    cmp dl,'Z'
    jnle end_then2

    jmp then2
end_then2:
    cmp dl,20h
    je space

    jmp digit

space:
    mov ah,2
    int 21h
    inc di
    jmp again

then1:
    sub dl,20h
    mov ah,2
    int 21h
    inc di
    jmp again

then2:
    add dl,20h
    ;add dl,40h
    mov ah,2
    int 21h
    inc di
    jmp again

digit:
    printn
    mov ah,2
    int 21h
    inc di
    jmp again

END_IT:
    mov ah,4ch
    int 21h

main endp
end
```

Output:

```
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wELLCOME TO cse rUET
1
9
9
8
```

Conclusion:

Array is successfully implemented. The program outputting uppercase as lowercase vice versa and separating digits from the input.

CSE