

**Jahangirnagar University (JU)**



**Institute of Information Technology**

**Lab Report-4**

**Assembly Language**

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**Class Roll:** 1980

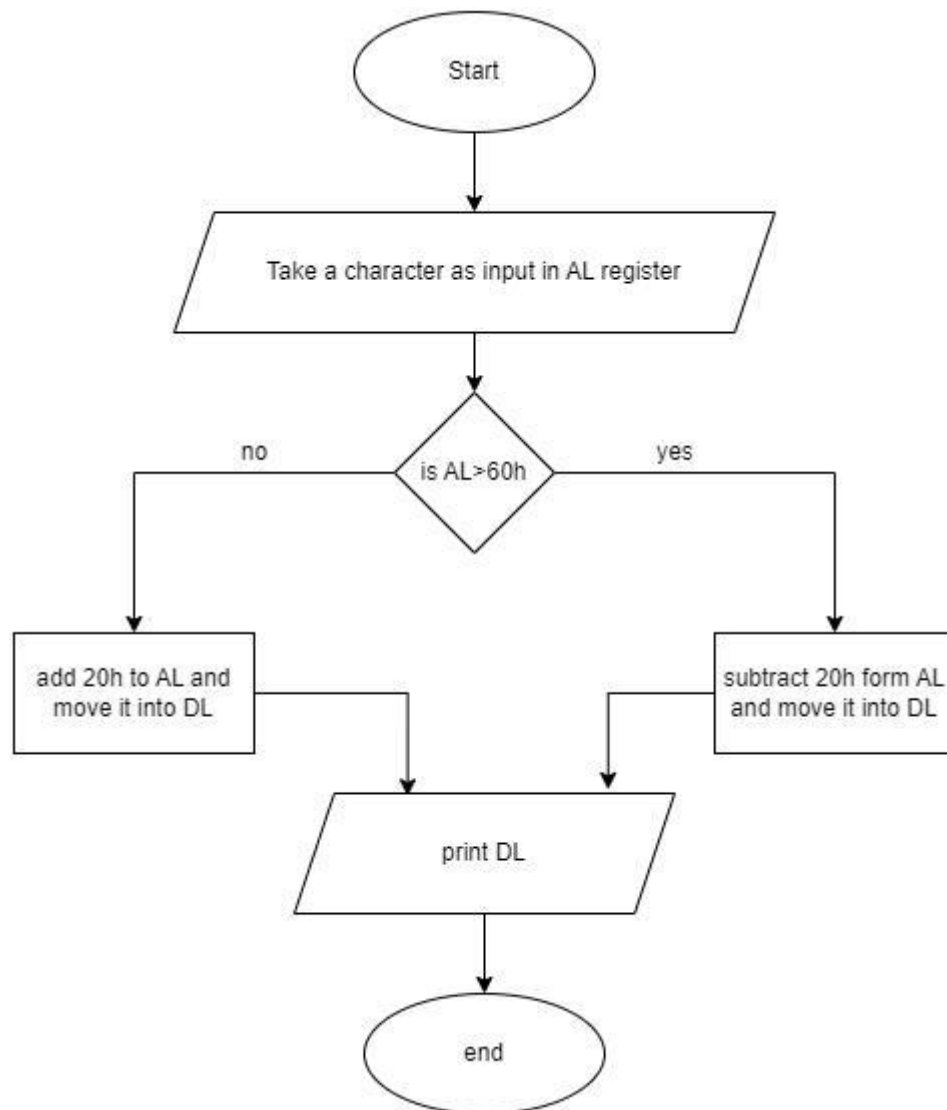
## Experiment 1.

**Title:** Case conversion (upper case to lower case and vice versa Using an assembly language program).

### Algorithm:

- Step1: Start
- Step2: take an input character in AL register.
- Step3: if  $AL > 60h$  then subtract  $20h$  from AL.
- Step4: otherwise add  $20h$  to AL.
- Step5: print the content of AL register.
- Step6: end.

### Flow chart:



## Source Code:

```
.model small
.stack 100h
.data

.code
input db 'Take Your Input: $'
res db 10,13,'Your Result is: $'

main proc
mov ax,@data
mov ds,ax

mov ah,9
lea dx,input
int 21h

mov ah,01
int 21h

mov bl,al
cmp bl,90
jle big_to_small
jmp small_to_big

big_to_small:
add bl,32
jmp return

mov bl,al
small_to_big:

sub bl,32

return:

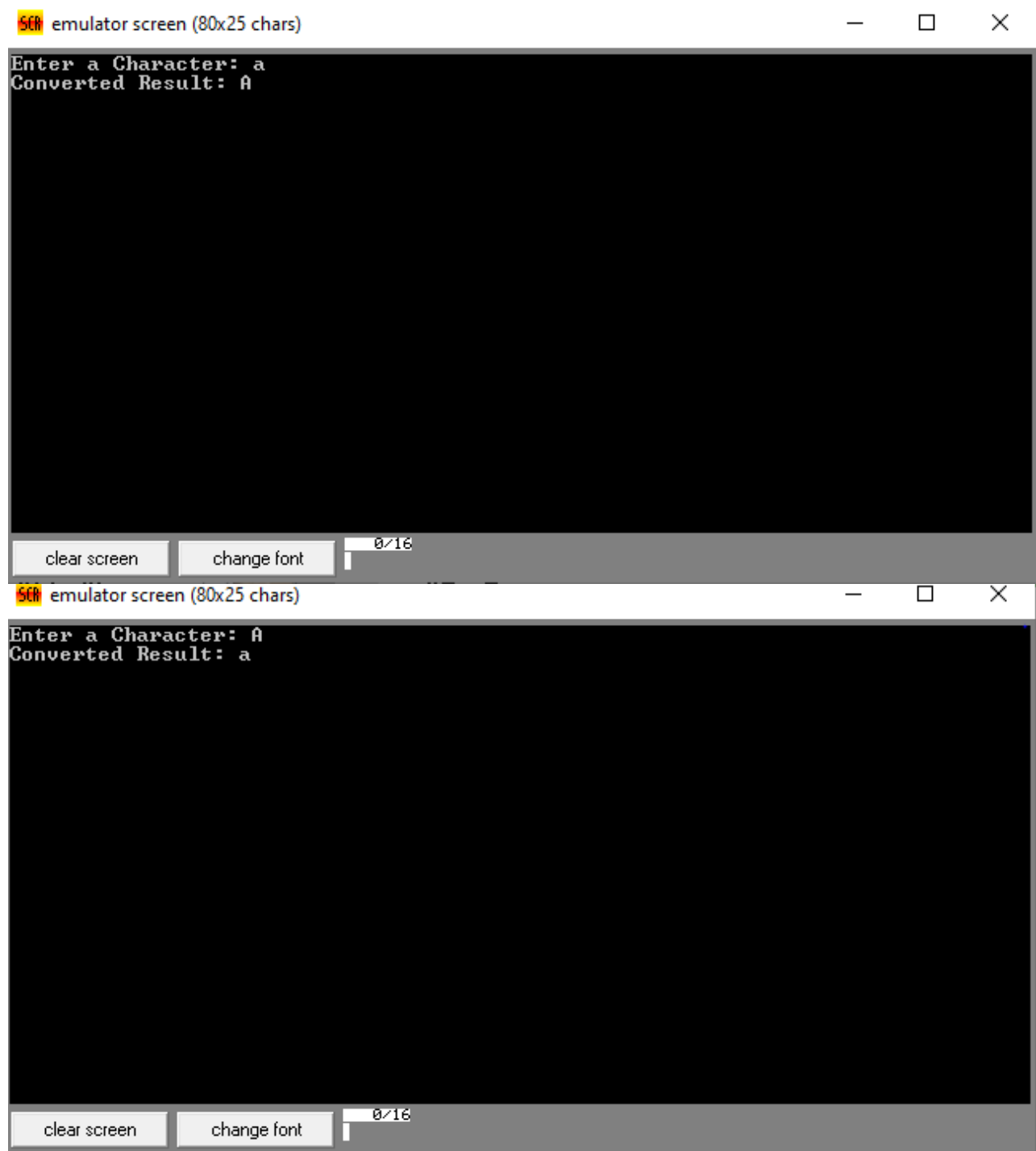
mov ah,9
lea dx,res
int 21h

mov ah,02
mov dl,bl
int 21h
exit:
mov ah,4ch
int 21h
```

```
main endp  
end main
```

**Input:** Firstly take a input in lower case latter a and take another input in upper case latter A.

**Output:**



## Experiment 2.

**Title:** Compare three digits and find the biggest number ( Using an assembly language program).

### Algorithm:

Step1: Start

Step2: Take 3 digit as input and put them in BL,BH,CL register.

Step3: if BL>BH then

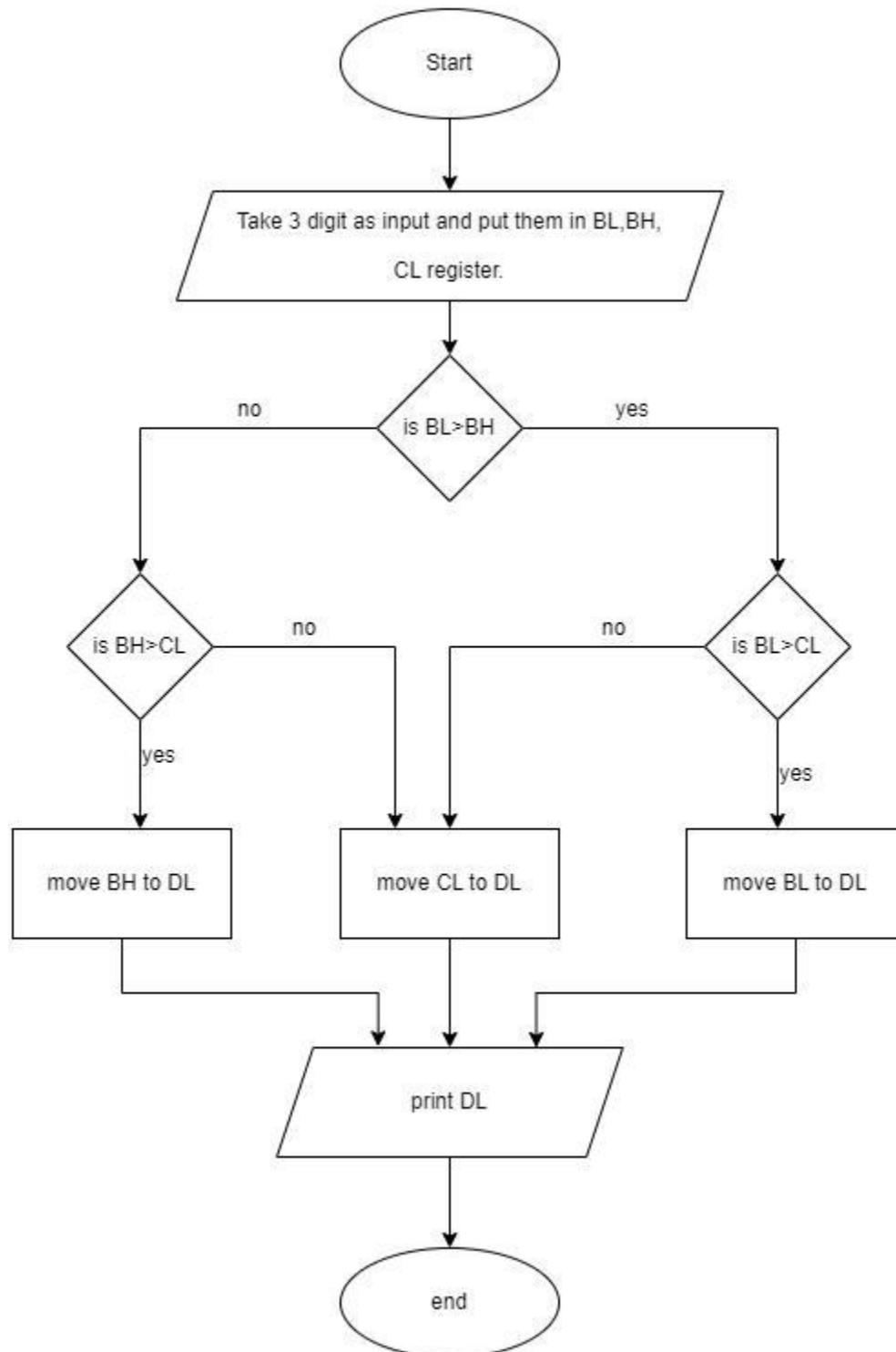
Step4:if BL<CL move CL to DL. otherwise move BL to DL.

Step5: otherwise,if BH<CL move CL to DL. otherwise move BH to DL.

Step6: print the content of DL.

Step7: end.

**Flow chart:**



## Source Code:

data segment

a db 0dh,0ah,"Enter first number \$"

b db 0dh,0ah,"Enter second number \$"

c db 0dh,0ah,"Enter third number \$"

d db 0dh,0ah,"Biggest out of three number is: \$"

data ends

code segment

assume CS:code,DS:Data

start:

mov ax,Data

mov DS,ax

mov dx,offset a

mov ah,09

int 21h

mov ah,01

int 21h

mov bl,al



mov dx,offset b

mov ah,09

int 21h

mov ah,01

int 21h

mov bh,al

mov dx,offset c

mov ah,09

int 21h

mov ah,01

int 21h

mov cl,al

cmp bl,bh

JNG secondbig

firstbig:

cmp bl,cl

JNG thirdbig1

```
mov dx,offset d
```

```
mov ah,09
```

```
int 21h
```

```
mov dl,bl
```

```
mov ah,02
```

```
int 21h
```

```
ret
```

```
thirdbig1:
```

```
mov dx,offset d
```

```
mov ah,09
```

```
int 21h
```

```
mov dl,cl
```

```
mov ah,02
```

```
int 21h
```

```
ret
```

```
secondbig:
```

```
cmp bh,cl
JNG thirdbig2
mov cl,bh
```

```
mov dx,offset d
mov ah,09
int 21h
```

```
mov dl,cl
mov ah,02
int 21h
ret
```

```
thirdbig2:
mov dx,offset d
mov ah,09
int 21h
```

```
mov dl,cl
mov ah,02
int 21h
ret
```

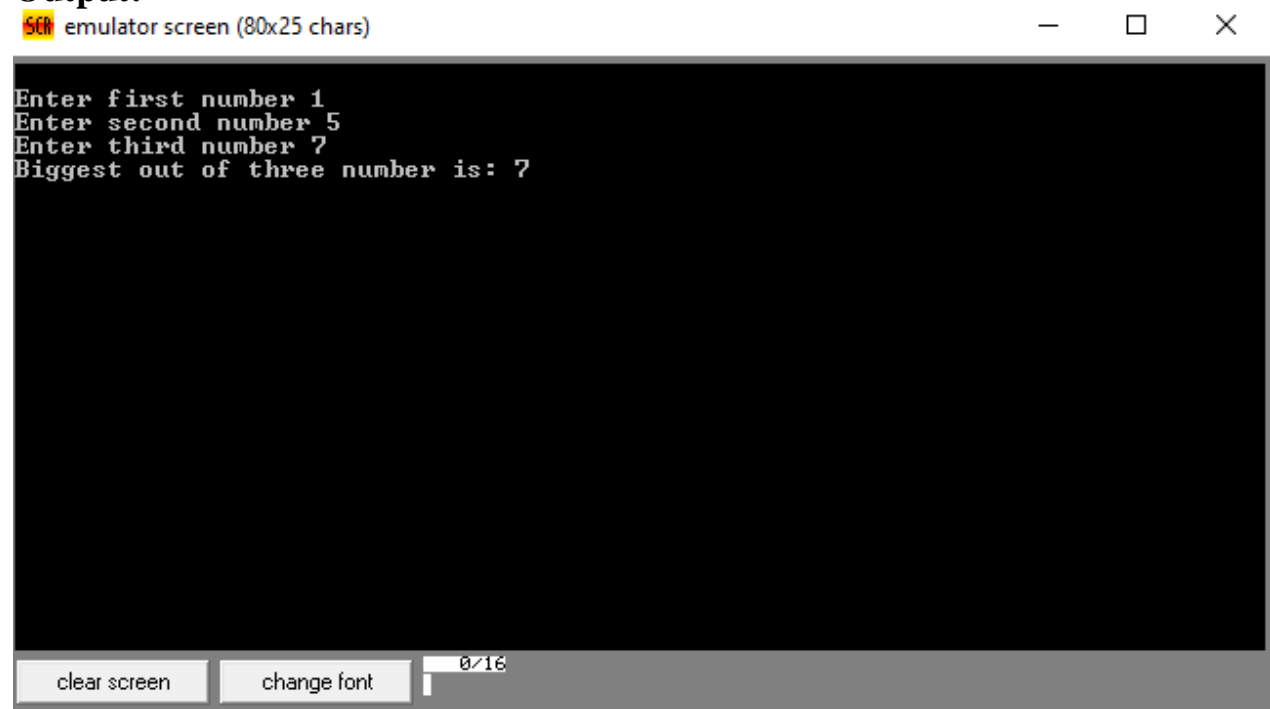
code ends

end start

## Input:

Taking input 1,5,7.

## Output:



The screenshot shows a window titled "emulator screen (80x25 chars)". The screen displays the following text:

```
Enter first number 1
Enter second number 5
Enter third number 7
Biggest out of three number is: 7
```

At the bottom of the window, there are two buttons: "clear screen" and "change font". To the right of these buttons is a small text box showing "0/16".