



MAWLANA BHASHANI SCIENCE AND TECHNOLOGY UNIVERSITY

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LAB REPORT

Lab Report No : 04
Lab Report name : Assembly Language-04
Course Title : Microprocessor and Assembly Language Lab
Course Code : ICT- 3106
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MBSTU

1. Write an assembly program to find larger number between two numbers.

Algorithm:

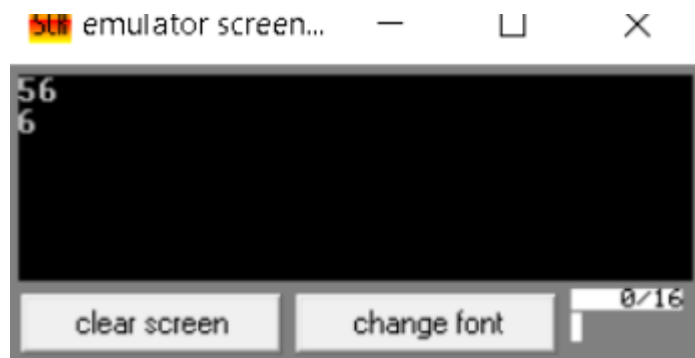
1. Start the program.
2. Enter two numbers in 'bl' and 'bh' register from 'al' register.
3. Compare two numbers.
4. If 'bl' is greater jump to l2 else jump l1. And Display the greater number.
5. Stop the program.

Code:

```
.model small
.stack 100h
.data
.code
main proc
    mov ah,1
    int 21h
    mov bl,al
    int 21h
    mov bh,al
    mov ah,2
    mov dl,10
    int 21h
    mov dl,13
    int 21h
    cmp bl,bh
    jg l1
```

```
jmp l2  
l2:  
mov ah,2  
mov dl,bh  
int 21h  
jmp exit  
l1:  
mov ah,2  
mov dl,bl  
int 21h  
jmp exit  
exit:  
mov ah,4ch  
int 21h  
main endp  
end main
```

Output:



2. Write an assembly program to enter two 8 bit numbers and print their sum which is less than 9.

Algorithm:

1. Start the program.
2. Enter two numbers from 'al' register.
3. Move those two numbers to 'bh', 'bl' register accordingly.
4. Add 'bh' & 'bl' and store the result in 'bh' register.
5. Sub 48 from 'bh' register.
6. Display 'bh' register.
7. Stop the program.

Source code:

```
.model small  
  
.stack 100h  
  
.code  
  
main proc  
  
    mov ah,1  
  
    int 21h  
  
    mov bh,al  
  
  
    mov ah,1  
  
    int 21h  
  
    mov bl,al  
  
  
    mov ah,2  
  
    mov dl,10
```

```
int 21h
```

```
mov dl,13
```

```
int 21h
```

```
add bh,bl
```

```
sub bh,48
```

```
mov ah,2
```

```
mov dl,bh
```

```
int 21h
```

```
exit:
```

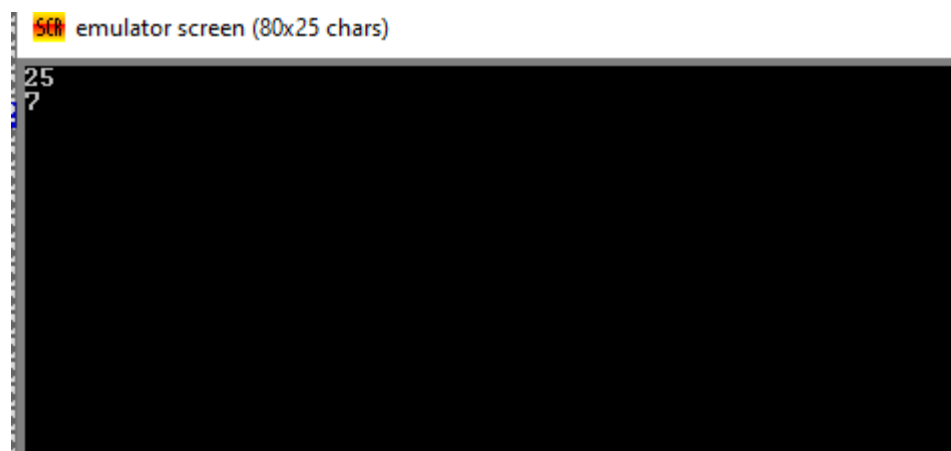
```
mov ah,4ch
```

```
int 21h
```

```
main endp
```

```
end main
```

Output:



03. Write an assembly program to enter value of AL. If AL contains a negative number, put -1 in BL; if AL contains 0, put 0 in BL; if AL contains a positive number, put 1 in BL.

Algorithm:

1. Start the program.
2. Enter a number to 'bl' register from 'al' register.
3. Compare the number with 0. If it is greater than 0, jump to level 2 and print 1. If it is less than 0, jump to level 2 and print -1. If it is equal to 0, jump to level 3 and print 0.

Source code:

```
.model small
.stack 100h
.data
.code
main proc
    mov ah,1
    int 21h
    mov bl,al
    mov ah,2
    mov dl,10
    int 21h
    mov dl,13
    int 21h

    cmp bl,0
    jl l1
```

jg l2

je l3

l2:

mov ah,2

mov dl,"1"

int 21h

jmp exit

l1:

mov ah,9

mov dl,'-'

int 21h

mov dl,'1'

int 21h

jmp exit

l3:

mov ah,2

mov dl,"0"

int 21h

jmp exit

exit:

mov ah,4ch

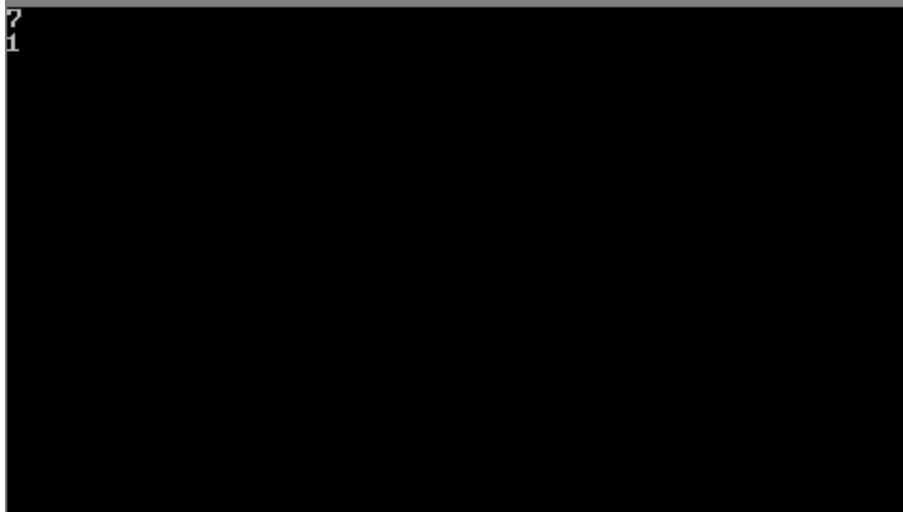
int 21h

```
main endp
```

```
end main
```

Output:

Stm emulator screen (80x25 chars)



04. Write an assembly program to enter value of AL; if AL contains 1 or 3, display "o"; if AL contains 2 or 4, display "e"

Algorithm:

1. Start the program.
2. Enter a number to bl register.
3. Compare this number with 1 and 3 . If it is equal to 1 or 3 jump to level and print 'o' else jump level 2 and print 'e'
4. Stop the program.

Source code:

```
.model small
```


.stack 100h

.data

.code

main proc

mov ah,1

int 21h

mov bl,al

mov ah,2

mov dl,10

int 21h

mov dl,13

int 21h

cmp bl,49

je l1

jmp l2

cmp bl,51

je l1

jmp l2

l1:

mov ah,9


mov dl,'o'

int 21h

jmp exit

```
l2:
mov ah,2
mov dl,"e"
int 21h
jmp exit
exit:
mov ah,4ch
int 21h
main endp
end main
```

Output:

 emulator screen (80x25 chars)



05. Write an assembly program to enter a character;if it's an uppercase letter, display it.Otherwise terminate.

Algorithm:

- 1.Start the program.
- 2.Take input in 'bl' register.
- 3.Compare the character whether it is between 'A'-'Z'.If yes then print it. Otherwise terminate.

4.Stop the program.

Source code:

```
.model small
```

```
.stack 100h
```

```
.data
```

```
.code
```

```
main proc
```

```
    mov ah,1
```

```
    int 21h
```

```
    mov bl,al
```

```
    mov ah,2
```

```
    mov dl,10
```

```
    int 21h
```

```
    mov dl,13
```

```
    int 21h
```

```
    cmp bl,65
```

```
    jge l1
```

```
    jmp exit
```

```
l1:
```

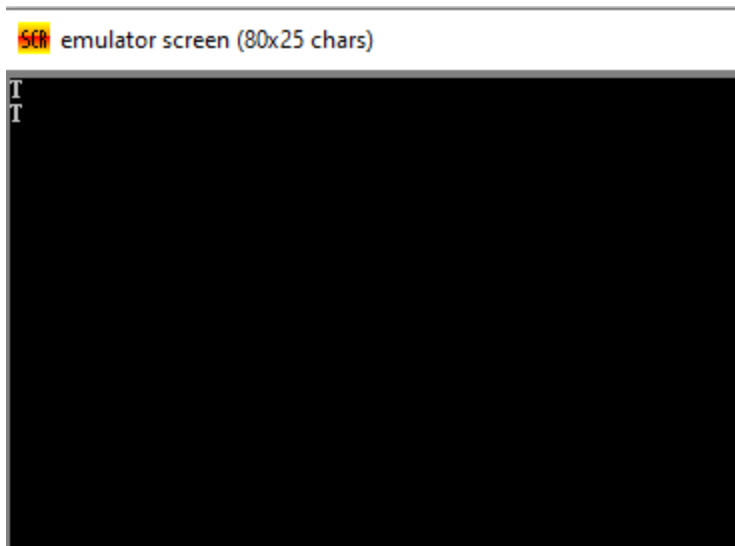
```
    cmp bl,90
```

```
    jle l2
```

```
    jmp exit
```

```
l2:
mov ah,2
mov dl,bl
int 21h
jmp exit
exit:
mov ah,4ch
int 21h
main endp
end main
```

Output:



06. Write an assembly program to enter a character;if it's y or Y, display it.Otherwise terminate.

Algorithm:

1.Start the program.

2.Enter a character in bl register.

3.Compare bl register with 'y' or 'Y'.if yes then print it otherwise terminate the program.

Code:

```
.model small
```

```
.stack 100h
```

```
.data
```

```
.code
```

```
main proc
```

```
mov ah,1
```

```
int 21h
```

```
mov bl,al
```

```
mov ah,2
```

```
mov dl,10
```

```
int 21h
```

```
mov dl,13
```

```
int 21h
```

```
cmp bl,89
```

```
je l1
```

```
jmp l2
```

```
l1:
```

```
mov ah,2
```

```
mov dl,bl
```

```
int 21h
```

```
jmp exit
```

```
l2:
```

```
cmp bl,121
```

```
je l1
```

```
jmp exit
```

```
exit:
```

```
mov ah,4ch
```

```
int 21h
```

```
main endp
```

```
end main
```

Output:

