**Lab 06: Logical Operations**

**OBJECTIVE**

To learn the basic ‘logic commands’ and their use.

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| **Command** | **Addressing Format** | **Description** |

|  |  |  |
| --- | --- | --- |
| **AND** | REG, memory memory, REG REG, REG memory, immediate REG, immediate | **Logical AND between all bits of two operands.** Result is stored in operand1. **Example:**  mov al,'a' ;small to capital letter code  AND al,11011111b ;=223d, A=61h  mov ah,2  mov dl,al ;ASCII for 'A' is 41h  int 21h |
| **OR** | REG, memory memory, REG REG, REG memory, immediate REG, immediate | **Logical OR between all bits of two operands.** Result is stored in first operand. **Example:**  mov al,'A' ;capital to small letter code  OR al,00100000b ;=32d, a=41h  mov ah,2  mov dl,al ;ASCII for 'a' is 97d=61h  int 21h |
| **XOR** | REG, memory memory, REG REG, REG memory, immediate REG, immediate | **Logical XOR (Exclusive OR) between all bits** of two operands. Result is stored in first operand. **Example:**  mov al,00000111b ;different bits give Logic-1  XOR al, 00000010b  mov ah,2  mov dl,al ;AL = 00000101b = 5d  add dl,30h  int 21h |

**Make a Full-Adder: S = A**xor**B**xor**C Cr = A.B+B.C+C.A**

**Code: Display a capital letters string into small letters.**

.model small

.data

msg db 'master$'

.code

main proc

mov ax,@data

mov ds,ax

lea si,msg

mov cx,6

label:

mov al,[si]

AND al,11011111b

inc si

mov ah,2

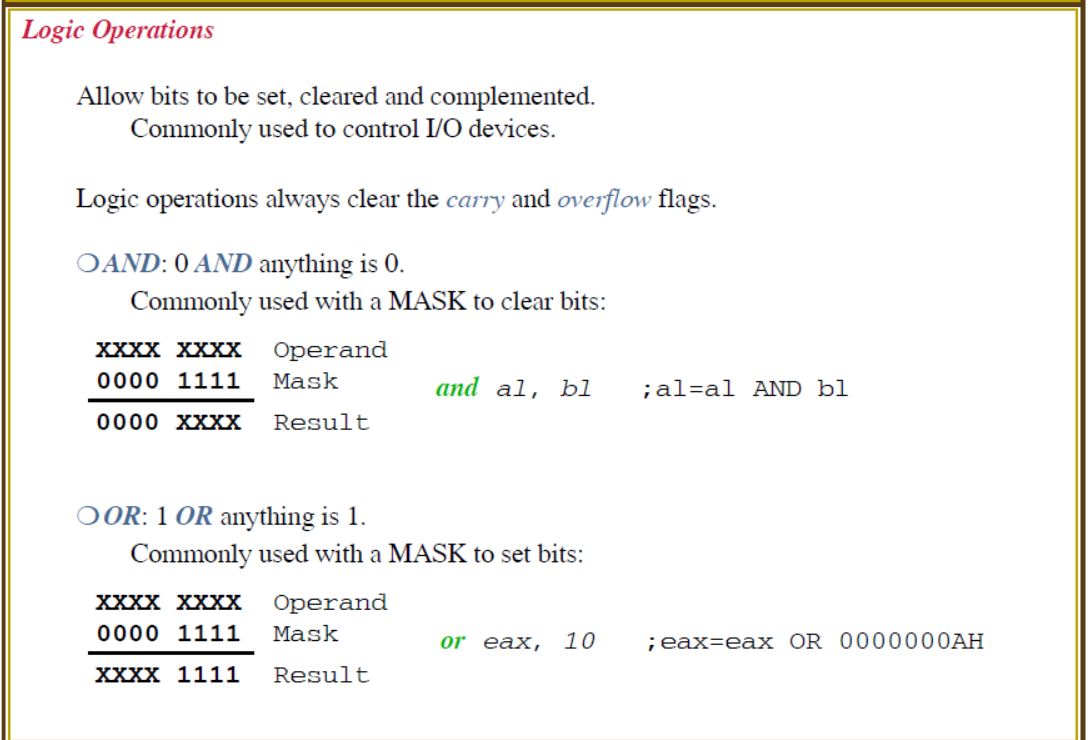
mov dl,al

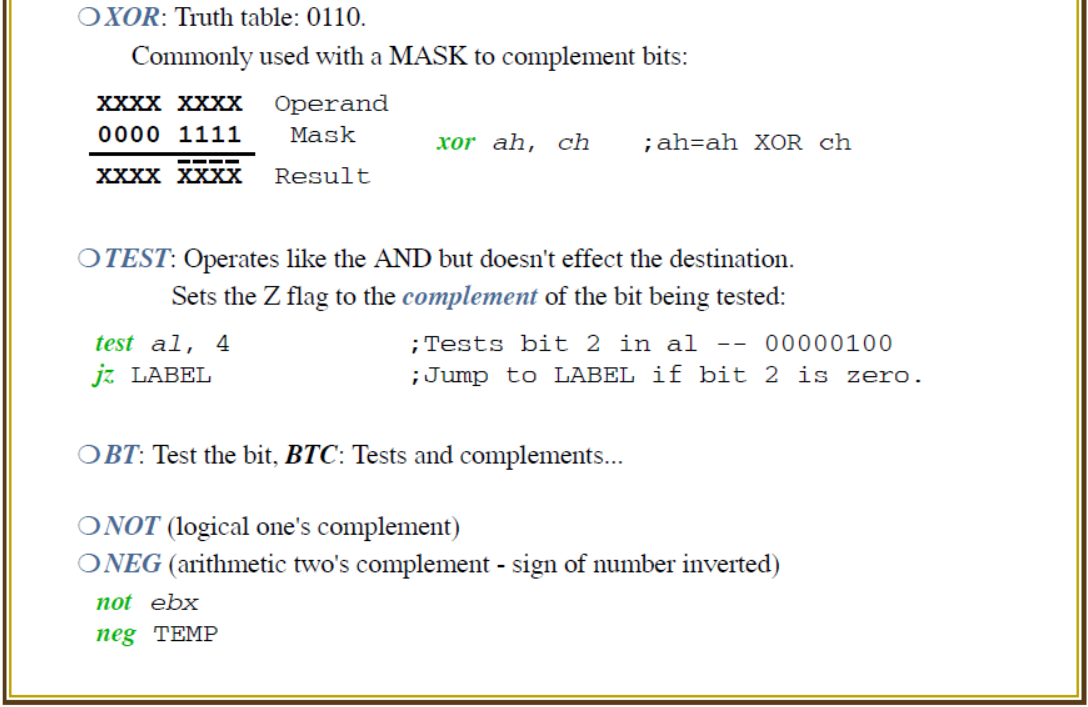
int 21h

loop label

main endp

end main

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**< The End >**