Roll No: 11
Name: Soham Desai
Xavier ID : 202003021
Date: 21/3/22

EXPERIMENT 6

Aim: Program to evaluate given logical expression – NOT[(A OR B) AND (B OR C)]

LO: 3

LO STATEMENT: Build a program on a microprocessor using arithmetic & logical instruction set of 8086.

Software and Hardware Requirements: TASM Software

Theory:

1. MOV Instruction:

The MOV instruction is the most important command in the 8086 because it moves data from one location to another. It also has the widest variety of parameters; so the assembler programmer can use MOV effectively, the rest of the commands are easier to understand. MOV copies the data in the source to the destination. The data can be either a byte or a word. Sometimes this has to be explicitly stated when the assembler cannot determine from the operands whether a byte or word is being referenced.

Syntax:

Move Destination, Source

Example:

MOV Ax, Bx

2. AND Instruction:

The AND instruction perform logical AND operation between two operands. The source can be an immediate, register, or a memory location and the destination can be either a register or a memory location. Both source and destination operands cannot be a memory location. It ANDs each bit of source operand with the destination operand and stores the result back into the destination operand.

Syntax:

AND Destination, Source

Example:

AND Ax, Bx

Roll No: 11
Name: Soham Desai
Xavier ID : 202003021
Date: 21/3/22

3. Not Instruction:

The NOT instruction implements the bitwise NOT operation. NOT operation reverses the bits in an operand. The operand could be either in a register or in the memory for negating 8-bit, 16-bit or 32-bit operands, respectively.

Syntax:

NOT destination

Example:

NOT AX

4. OR Instruction:

It performs the OR operation between two operands and stores the result back into the destination operand. The destination operand can be a register or a memory location whereas the source can be immediate, register, or a memory location.

Syntax:

OR Destination, Source

Example:

OR Ax, BX

5. INT instruction:

Interrupt is the method of creating a temporary halt during program execution and allows peripheral devices to access the microprocessor. The microprocessor responds to that interrupt with an ISR (Interrupt Service Routine), which is a short program to instruct the microprocessor on how to handle the interrupt.

Example:

INT 21H

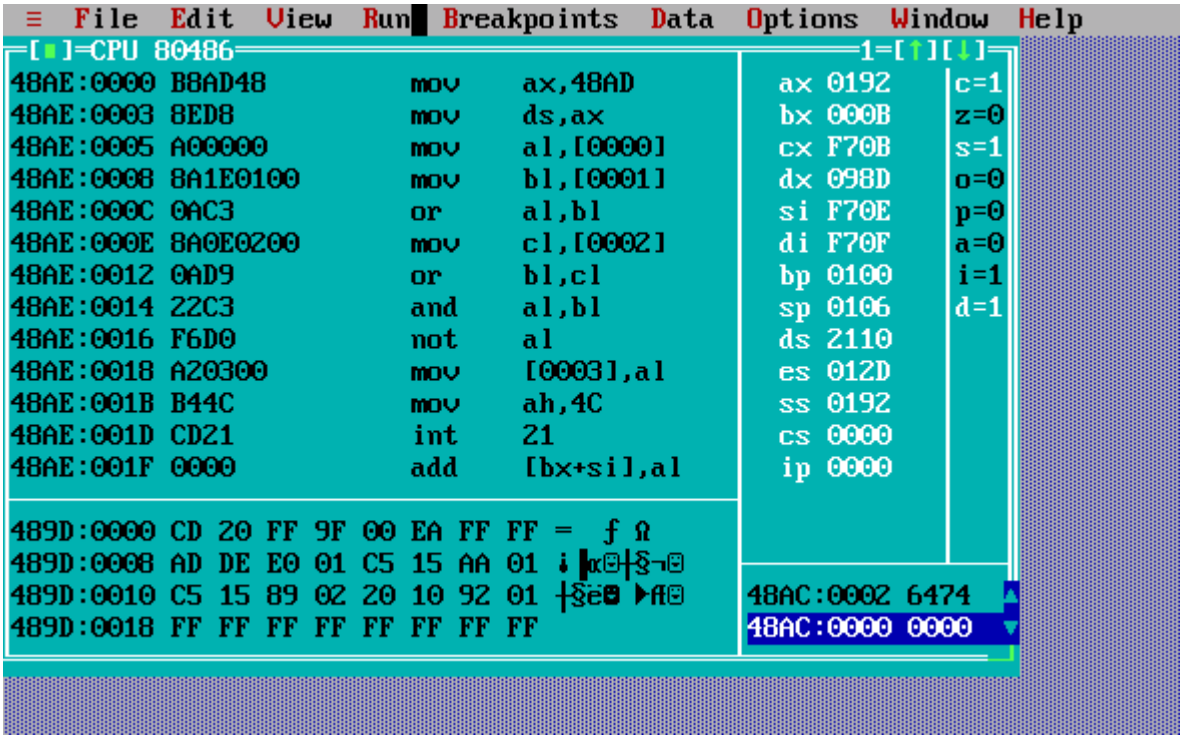
Roll No: 11
Name: Soham Desai
Xavier ID : 202003021
Date: 21/3/22

Code:

```
assume cs:code,ds:data

data segment

A db 11

B db 34

C db 55

y db 01 dup(?)

data ends

code segment

start:

    Mov Ax,data

    Mov Ds,Ax


    Mov Al,A

    Mov Bl,B

    OR Al,Bl

    Mov Cl,C

    OR Bl,Cl

    AND Al,Bl

    NOT Al

    Mov y,Al


   Mov AH,4CH

    INT 21H

    code ends

    end start
```

Roll No: 11
Name: Soham Desai
Xavier ID : 202003021
Date: 21/3/22

Output:



Conclusion: From this experiment we have learnt how to evaluate a logical expression using TASM software.