NAME : Soham Manoj Pawar **Class : SE-IT**

ROLL NO : 71 **MPL LAB**

EXPERIMENT 05

AIM :-

Program for 16-bit BCD Addition

LO No :- LO3

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

SOFTWARE :- Tasm Software

Theory :-

8086 Microprocessor is an enhanced version of 8085Microprocessor that was designed by Intel in 1976. It is a 16-bit Microprocessor having 20 address lines and16 data lines that provides up to 1MB storage. It consists of powerful instruction set, which provides operations like multiplication and division easily.

Features

- It has an instruction queue, which is capable of storing six instruction bytes from the memory resulting in faster processing.
- It was the first 16-bit processor having 16-bit ALU, 16-bit registers, internal data bus, and 16-bit external data bus resulting in faster processing.

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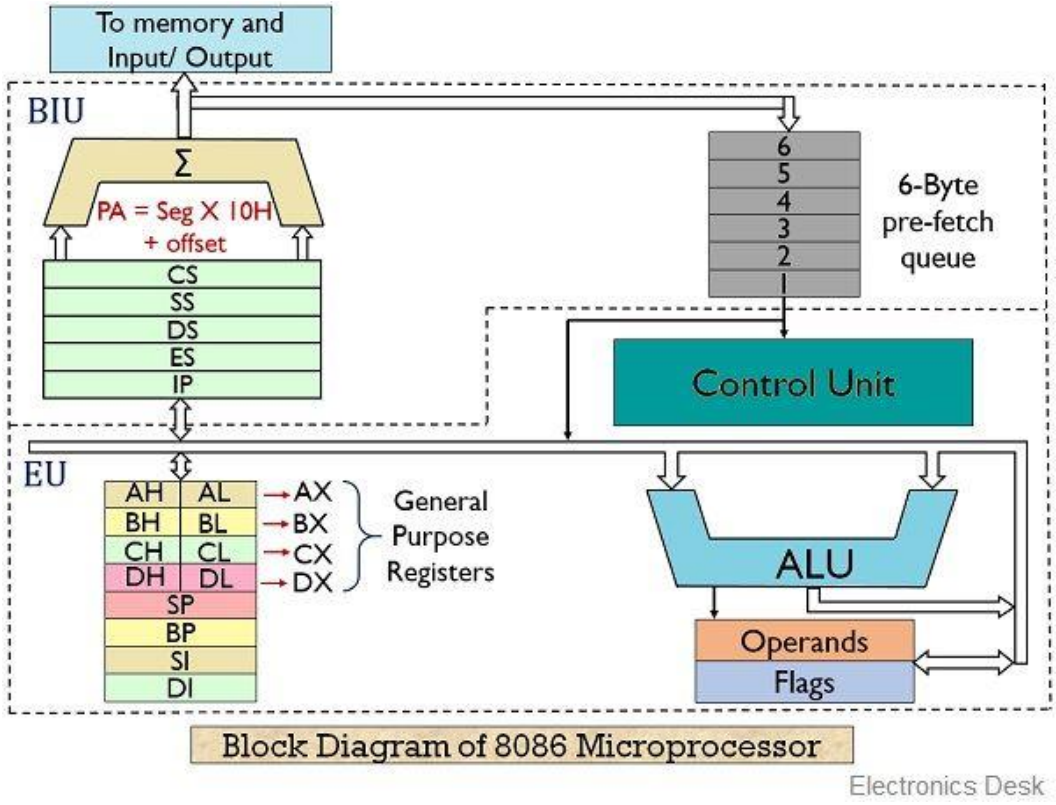

MOV

The MOV instruction is the most important command in the 8086 because it moves data from one location to another.

Syntax: Mov source, destination

Example: Mov Ax,1234H

ADD

The ADD instruction performs an addition on both the first source register's contents and the second source. register's contents, and stores the result in the destination register.

Syntax: ADD Source, Destination

Example: Add Ax,Bx

INTERRUPT

int 21h means, call the interrupt handler 0x21 which is the DOS Function dispatcher. the "mov ah,01h" is setting AH with 0x01, which is the Keyboard Input with Echo handler in the interrupt.

Syntax: int 21H

Example: int 21H

Code :-

```
 Assume CS: code , DS: data
Data Segment
n1 dw 1234H
n2 dw 5678H
ans  dw ?
data ends
Code Segment
Start: MOV Ax,data
      MOV Ds,Ax
      MOV Ax,n1
      MOV Bx,n2
      ADD Ax,Bx
      MOV ans,Ax
      MOV AH,4CH
      INT 21H
code ends
end Start
```

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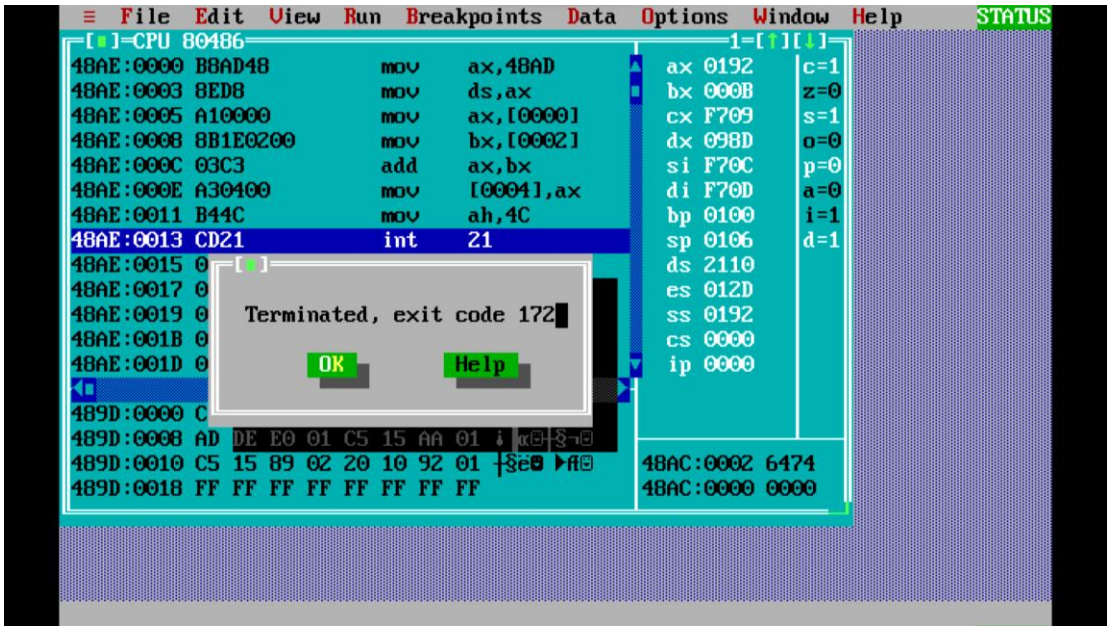
Output :-



Conclusion : We built a program on microprocessor using arithmetic and logical instructions and performed BCD addition on 16-bit values.