Algorithm

The location of 1st number is moved into Source Index (SI) & the location to store the difference is moved into Destination Index (DI). The 1st number is moved from the location in SI to AX. Then SI is incremented twice to get the location of the 2nd number. The 2nd number is moved from the location in SI to BX. AX & BX are compared. If AX < BX, jump to location 0415H. Otherwise the 2 numbers are subtracted & result is stored in AX. If AX < BX, AX & BX are swapped & then subtracted & result is stored in AX again. The difference is moved from AX to the location in DI. Then the program ends with the HLT instruction.

Input

0600/01 0602/03
2 2 2 2

0604/05 0606/07
1 1 1 1

Output

0500/01 0502/03
1 1 1 1

Experiment Name / No.: 10. SUBTRACTION OF TWO 16-BIT NUMBERS

Camlin | Page No. 35
Date 25 / 02 / 2020

Aim

To perform subtraction of two 16-bit numbers using 8086 trainer kit

Program

Address	Instruction	Comment
0400	MOV DI, 0500	Set destination index to 0500H
0403	MOV SI, 0600	Set source index to 0600H
0406	MOV AX, [SI]	Move the 1st number from SI to AX
0408	INC SI	
0409	INC SI	
040A	MOV BX, [SI]	Move the 2nd number from SI to BX
040C	CMP AX, BX	Compare AX and BX
040E	JC 0415	Jump to 0415H if there is carry
0410	SUB AX, BX	Subtract the 2 numbers
0412	JMP 041D	Jump to 041DH
0415	MOV CX, AX	Move AX to CX
0417	MOV AX, BX	Move BX to AX
0419	MOV BX, CX	Move CX to BX
041B	SUB AX, BX	Subtract the 2 numbers
041D	MOV [DI], AX	Move the result to destination index
041F	HLT	

Result

Performed the subtraction of two 16-bit numbers using 8086 trainer kit.

Teacher's Signature: