6.25 Programs

Ex. 6.25.1: Add two 8-bit numbers.

Program statement:

Write a program to add the contents of memory locations D000H and D001H. Store in result in memory location D002H.

Explanation:

- We have two numbers at memory locations D000H and D001H. Let these numbers be 20H and 23H We have to add these two numbers.
- Using ADD instruction we will add the two numbers.

Store the result at memory location D002H.

e.g. D000H = 20H D001H = 23HResult D002H = 20H + 23H = 43H

nogram:	Comment	Operation	-		
Instruction Instruction In Dood	Set HL as memory pointer at memory location D000H,	H = D0H, L = 00H			
NOV A. M	Load first operand in accumulator	A = 20 H	Start		
NXH	Increment HL to	H = D0H, $L = 01H$	Set HL as memory pointer to first memory location	\Longrightarrow	HL = D000H
	location i.e. D001H	D001 : 23 H	Load the number in		A = 20H
ADD M	Add the second operand with first operand.	A = A + M $A = 20 + 23$	accumulator Increment pointer		
	Increment HL to	A = 43 H $H = D0H,$	to point to the second number		HL = D001
DX H	point to next memory location	L = 02H	Add the two number		A = 43H
10V M, A	Store the result	D002 : 43H Result	Increment pointer and Store the result		D002 : 43H Res
LI	Terminate program	Stop.	Oloro trio rosan	ar f b ⁿ . A	

Subtract two 8 bit numbers. Ex. 6.25.2:

Program statement:

Subtract the contents of memory location D001H from memory location D000H and place the result in memory location D002H.

Explanation:

We have two numbers at memory locations D000H and D001H. Let these numbers be 50H and 20H.

Using the SUB instruction we will subtract the two numbers. Store the result at memory location D002H.

e.g. : D000H = 50 H

D001H = 20 H

(Result) D002H = 50 H - 20 H = 30 H

Program: Operation Comment Instruction Start M H = D0H, LXI H, D000H Set HL as memory L = 00Hpointer at memory Set HL as memory location D000H pointer to first memory HL = DOOOH location MOV A, M Load first operand A = 50 Hin accumulator INX H Increment HL to H = D0H, Load the number in A = 50Hpoint to next L = 01Haccumulator memory location D001:20H i.e. D001H Increment pointer SUB M Subtract the A = A - Mto point to the second HL = D001Hsecond operand number A = 50 - 20from first operand. A = 30 HINX H Increment HL to H = D0 HAdd the two A = 30Hnumber point to next L = 02 Hmemory location i.e. D002 H Increment pointer and D002: 30H D002 : 30H MOV M, A Store the result Store the result Result HLT Terminate program Stop. Stop execution

Flowchart: Refer Flowchart 2.

Flowchart 2