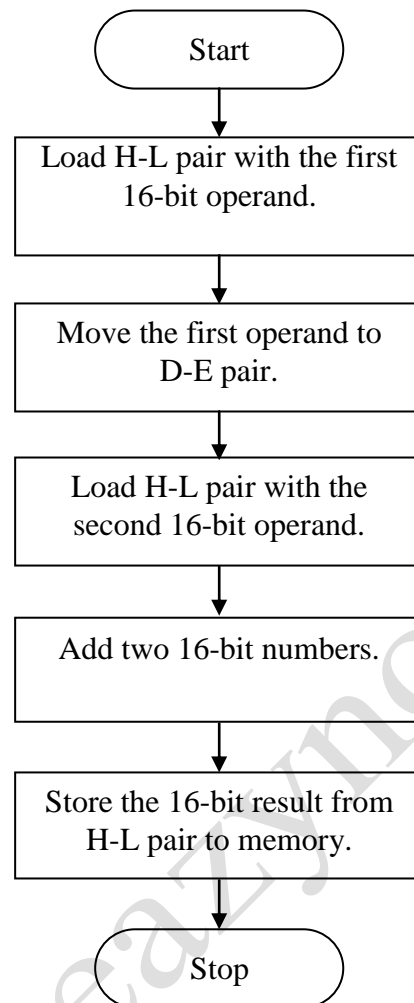


Program 13: Add two 16-bit numbers without considering the carry.

Flowchart:



Program:

Address	Mnemonics	Operand	Opcode	Remarks
2000	LHLD	3000H	2A	Load H-L pair with 1 st operand from 3000H.
2001			00	Lower-order of 3000H.
2002			30	Higher-order of 3000H.
2003	XCHG		EB	Exchange H-L pair with D-E pair.
2004	LHLD	3002H	2A	Load H-L pair with 2 nd operand from 3002H.
2005			02	Lower-order of 3002H.
2006			30	Higher-order of 3002H.
2007	DAD	D	19	Add D-E pair with H-L pair.
2008	SHLD	3004H	22	Store the result at address 3004H.
2009			04	Lower-order of 3004H.
200A			30	Higher-order of 3004H.
200B	HLT		76	Halt.

Explanation:

- This program adds two 16-bit operands stored in memory locations 3000H-3001H and 3002H-3003H, without considering the carry produced (if any).
- Let us assume that the operands stored at memory locations 3000H-3001H is 02H-04H and 3002H-3003H is 04H-03H.
- The H-L pair is loaded with the first 16-bit operand 0204H from memory locations 3000H-3001H.
- Then, the first 16-bit operand is moved to D-E pair.
- The second 16-bit operand 0403H is loaded to H-L pair from memory locations 3002H-3003H.
- The two operands are added and the result is stored in H-L pair.
- The result is stored from H-L pair to memory locations 3004H-3005H.

Output:**Before Execution:**

3000H: 02H
 3001H: 04H
 3002H: 04H
 3003H: 03H

After Execution:

3004H: 06H
 3005H: 07H