Flow Chart to Add Two 8-bit Numbers With Carry

Start

↓

Load H-L pair address 3000 H

↓

Load C with 0

↓

Move the contents from 3000H to B

↓

Increment H-L pair

↓

Move the contents from 3001H to A

↓

Add B with A

↓

If carry ? — No →

Yes ↓

Increment C

↓

Store the result at location 3002 H

↓

Move carry to Accumulator

↓

Store the carry at location 3003 H

↓

Stop
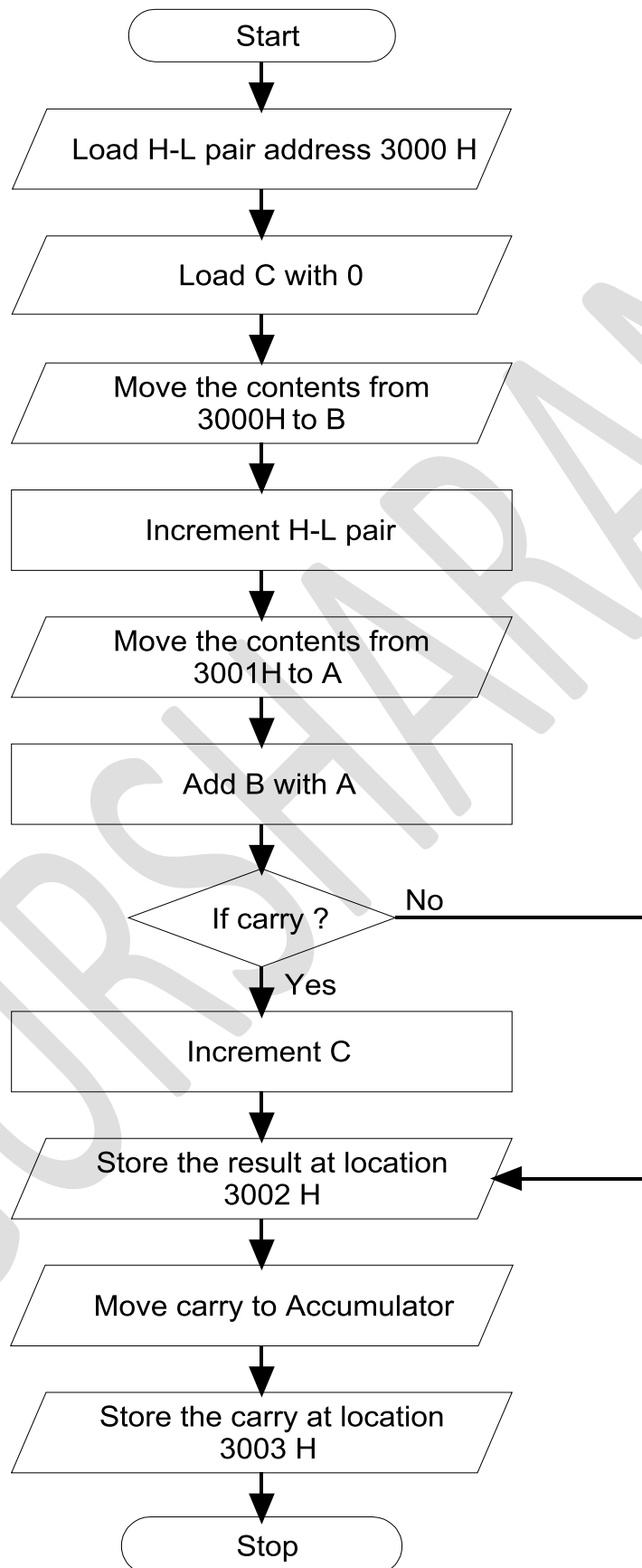
Program to Add Two 8-bit Numbers With Carry

Address	Mnemonics	Operand	Opcode	Remarks
2000	LXI	H, 3000 H	21	Load H-L pair with address 3000H
2001			00	
2002			30	
2003	MVI	C, 00 H	0E	Load C with 0
2004			00	
2005	MOV	B, M	46	Move the contents from 3000H to B
2006	INX	H	23	Increment H-L pair
2007	MOV	A, M	7E	Move the contents from 3001H to A
2008	ADD	B	80	Add B with A
2009	JNC	200D H	D2	Jump to location 200D H if no carry
200A			0D	
200B			20	
200C	INR	C	0C	Increment C
200D	STA	3002 H	32	Store the result at location 3002 H
200E			02	
200F			30	
2010	MOV	A, C	79	Move carry to Accumulator
2011	STA	3003 H	32	Store the carry at location 3003 H
2012			03	
2013			30	
2014	HLT		76	Halt

Before Execution:

3000:   91 H
3001:   F2 H

After Execution:

3002:   83 H
3003:   01 H