

EXPERIMENT NO. 5

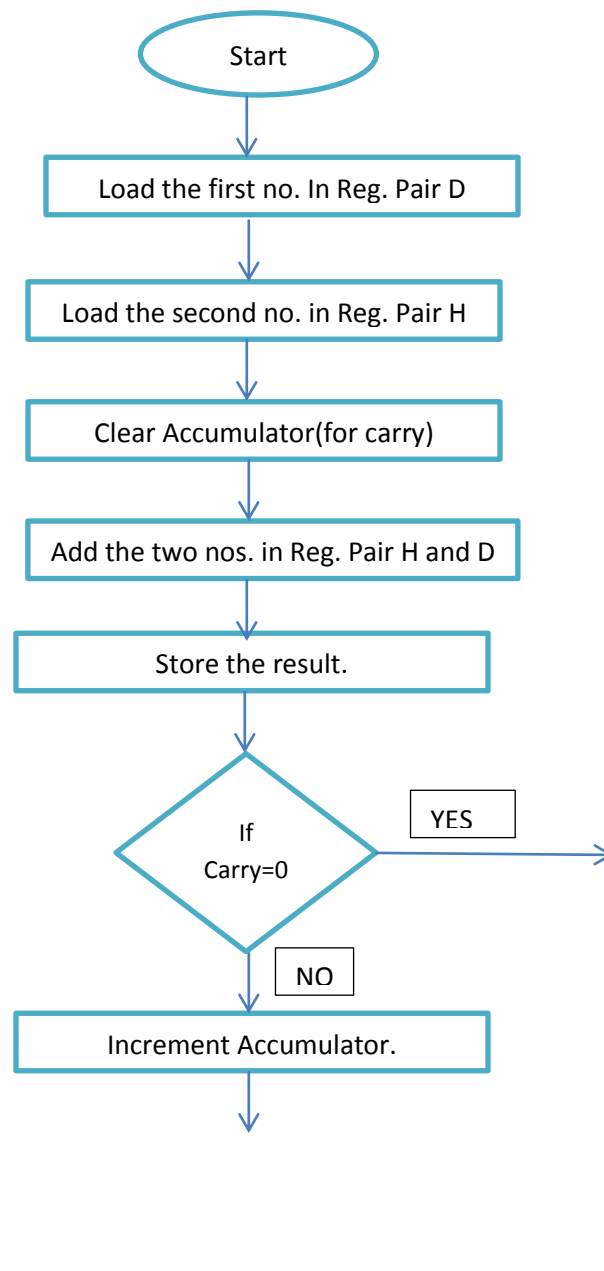
AIM: To add two 16-bit numbers.

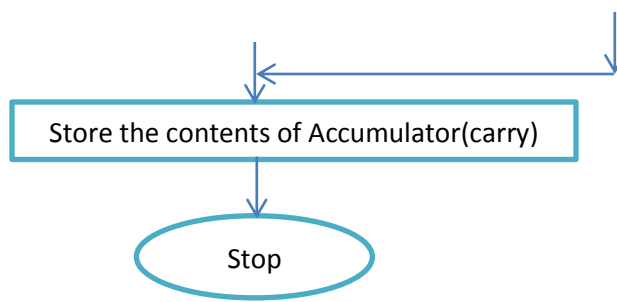
APPARATUS REQUIRED: 8085 Microprocessor Kit.

ALGORITHM:

1. Load the first 16 bit no. in Reg. Pair D.
2. Load the second 16 bit no. in Reg. Pair H.
3. Add the two numbers.
4. Store the result and carry at some address.
5. End of Program.

FLOW CHART:





PROGRAM:

Memory Address	Mnemonics	Hex Codes	Remarks
2000	LXI D, 056F _H	11	Load the First no. in D reg. pair
2001		6F	
2002		05	
2003	LXI H, 0AB5 _H	21	Load the second no. in H reg. pair.
2004		B5	
2005		0A	
2006	XRA A	AF	Clear register A to initialize carry as 0
2007	DAD D	19	Add the contents of Reg. Pair D to the contents of Reg. Pair H
2008	SHLD, 2050 _H	22	Store the contents(SUM) of H reg. pair in Memory address,2050H.
2009		50	
200A		20	
200B	JNC 200F _H	D2	Jump to the address 200F _H if there is no carry.
200C		0F	
200D		20	
200E	INR A	3C	Increment the contents of accumulator if there is a carry.
200F	STA, 2052H	32	Store the contents(CARRY) of accumulator at mem. Addr. 2052H
2010		52	
2011		20	
2012	HLT	76	End of Program.

INPUT:

1st set:

First No. (D)=056F_H

Second No. (H)=0AB5_H

OUTPUT:

SUM= 24 (2050)

10 (2051)

CARRY= 00(2052)

1st set:

First No. (D)=ABF2_H

Second No. (H)=0EF6_H

OUTPUT:

SUM= E8 (2050)

BA (2051)

CARRY= 00(2052)

PRECAUTION:

Make sure that all the machine codes should be as specified in the program.