

EXPERIMENT NO- 3A

DOE: 26.02.2019

DOS: 05.03.2019

Write a program to transfer a block of data from a particular memory location to some other specified memory location.

Word wise with & without Loop instruction.

Without Loop instruction

Memory location	Instructions	Comments
2000H	MOV SI, 6000H	Move the address 6000H to SI.
2003H	MOV DI, 5000H	Move the address 5000H to DI.
2006H	MOV CX, 0010H	Move the data 0010H to the register CX.
loop: 2009H	MOV AX, [SI]	Move the content of SI to accumulator.
200BH	INC SI	SI is incremented by one.
200CH	INC SI	SI is incremented by one.
200DH	MOV [DI], AX	Move the content of accumulator to DI.
200FH	INC DI	DI is incremented by one.
2010H	INC DI	DI is incremented by one.
2011H	DEC CX	CX register is decremented by one.
2012H	JNZ loop	Jump to loop if the zero flag is not set.
2014H	INT 03H	END of program.

Result :-

Input

Memory location

6000H

6002H

6004H

6006H

6008H

600AH

600CH

600EH

6010H

6012H

6014H

6016H

6018H

601AH

601CH

601EH

Data

DEB3H

7510H

DBC2H

9B68H

6F9EH

F389H

D299H

FD33H

7DC4H

7929H

4AE5H

008EH

7F03H

CAA4H

7C6DH

35AH

Output

Memory location

5000H

5002H

5004H

5006H

5008H

500AH

500CH

500EH

5010H

5012H

5014H

5016H

5018H

501AH

501CH

501EH

Data

DE63H

7510H

DBC2H

9B68H

6F9EH

F389H

D299H

FD33H

7DC4H

7929H

4AE5H

008EH

7F03H

CAA4H

7C6DH

35AH

With Loop instruction.

Memory location	Instructions	Comments
2000H	MOV SI, 6000H	Move the address 6000H to SI.
2003H	MOV DI, 5000H	Move the address 5000H to DI.
2006H	MOV CX, 0010H	Move the data 0010H to the register CX.
loop: 2009H	MOV AX, [SI]	Move the content of SI to accumulator,
200BH	INC SI	SI is incremented by one.
200CH	INC SI	SI is incremented by one.
200DH	MOV [DI], AX	Move the content of accumulator to DI.
200FH	INC DI	DI is incremented by one.
2010H	INC DI	DI is incremented by one.
2011H	Loop loop	Jump to the loop pointing at to memory location 2009H.
2013H	INT 03H	END of program.

Result:-

Input

Memory location

Data

6000H	DE63H.
6002H.	7510H.
6004H.	DBC2H
6006H.	9B68H.
6008H.	6F9EH.
600AH.	F389H.
600CH.	D299H
600EH.	FD33H.
6010H.	7DC4H.
6012H.	7929H.
6014H.	4AE5H.
6016H.	008EH.
6018H.	7F03H
601AH.	CAA4H.
601CH.	7C6DH.
601EH.	35AH.

Output

Memory location.

Data.

5000H.	DE63H.
5002H.	7510H.
5004H.	DBC2H
5006H.	9B68H.
5008H.	6F9EH.
500AH.	F389H.
500CH.	D299H.
500EH.	FD33H
5010H.	7DC4H.
5012H.	7929H.
5014H	4AE5H.
5016H	008E8
5018H	7F03H.
501AH.	CAA4H.
501CH.	7C6DH.
501EH.	35AH.

EXPERIMENT NO-3B.

DOE: 26.02.2019
DOS: 05.03.2019

Write a program to transfer a block of data from a particular memory location to some other specified memory location.

■ Byte-wise with & without loop instruction.

Without Loop instruction

Memory location	Instructions	Comments
2000H	MOV SI, 6000H	Move the address 6000H to SI.
2003H	MOV DI, 5000H	Move the address 5000H to DI.
2006H	MOV CX, 0010H	Move the data 0010H to CX register.
loop; 2009H	MOV AL, [SI]	Move the content of SI to accumulator.
200BH	INC SI	SI is incremented by one.
200CH	MOV [DI], AL	Move the content of accumulator to DI.
200EH	INC DI	DI is incremented by one.
200FH	DEC CX	CX is decremented by one.
2010H	JNZ loop	Jump to loop. When zero flag is not set.
2012H	INT 03H	END of program.

Result:-

Input

<u>Memory location</u>	<u>Data</u>
6000 H.	63H
6001 H.	DEH
6002 H.	10H
6003 H.	75H
6004 H.	C2H
6005 H.	DBH
6006 H.	68H
6007 H.	9BH
6008 H.	9EH
6009 H.	67H
600A H.	89H
600B H.	F3H
600C H.	99H
600D H.	D2H
600E H.	33H
600F H.	FDH ✓✓

Output

<u>Memory location</u>	<u>Data</u>
5000H.	63H
5001H.	DEH
5002H.	10H
5003H.	75H
5004H.	C2H
5005H.	DBH
5006H.	68H
5007H.	9BH
5008H.	9EH
5009H.	67H
500AH.	89H
500BH.	F3H
500CH.	99H
500DH.	D2H
500EH.	33H
500FH.	FDH
5010H.	C4H ✓✓

With Loop instruction.

Memory location	Instructions	Comments.
2000H	MOV SI, 6000H	Move the address 6000H to SI.
2003H	MOV DI, 5000H	Move the address 5000H to DI.
2006H	MOV CX, 0010H	Move the data 0010H to the CX register.
loop: 2009H	MOV AL, [SI]	Move the content of SI to the accumulator.
200BH	INC SI	SI is incremented by one.
200CH	MOV [DI], AL	Move the content of accumulator to DI.
200EH	INC DI	DI is incremented by one.
200FH	Loop loop	Jump to loop pointing at memory location 2009H.
2011H	INT 03H	END of program.

Result :-

Input

<u>Memory location</u>	<u>Data</u>
6000H.	63H.
6001H.	DEH.
6002H.	10H.
6003H.	75H.
6004H.	C2H.
6005H.	DBH.
6006H.	68H.
6007H.	9BH.
6008H.	9EH.
6009H.	67H.
600AH.	89H.
600BH.	F3H.
600CH.	99H.
600DH.	D2H.
600EH.	33H.
600FH.	FDH.

Output

<u>Memory location</u>	<u>Data</u>
5000H.	63H.
5001H.	DEH.
5002H.	10H.
5003H.	75H.
5004H.	C2H.
5005H.	DBH.
5006H.	68H.
5007H.	9BH.
5008H.	9EH.
5009H.	67H.
500AH.	89H.
500BH.	F3H.
500CH.	99H.
500DH.	D2H.
500EH.	33H.
500FH.	FDH.
5010H.	C4H.
5011H.	7A.

EXPERIMENT No-4A

DOE: 05.03.2019

DOS: 12.03.2019

Write a program to find the 2's complement directly for word numbers using 8086. The data stored in 6000H onwards, store them after NEG from 5000H onwards.

Memory Location	Instructions	Comments
2000H	MOV SI, 6000H	Move the address 6000H to SI.
2003H	MOV DI, 5000H	Move the address 5000H to DI.
2006H	MOV CX, 000AH	Move the data 000AH to CX register.
op: 2009H	MOV AX, [SI]	Move the content of SI to Accumulator.
200BH	NEG AX	Apply 2's complement to the content of accumulator.
200DH	INC SI	SI is incremented by one.
200EH	INC SI	SI is incremented by one.
200FH	MOV [DI], AX	Move the content of accumulator to DI.
2011H	INC DI	DI is incremented by one.
2012H	INC DI	DI is incremented by one.
2013H	DEC CX	CX register is decremented by one.
2014H	JNZ loop.	Jump to loop if zero flag is not set.
2016H	INT 03H	END the program.

Result :-

Input -

<u>Memory location.</u>	<u>Data</u>
6000H	EFBFH
6002H	FFEAH
6004H	FFF5H
6006H	FD9FH
6008H	DFB7H
600AH	DF7FH
600CH	FFEDH
600EH	FFFEH
6010H	FFE7H
6012H	9F2EH

Output -

<u>Memory location.</u>	<u>Data</u>
5000H	1041H
5002H	0016H
5004H	000BH
5006H	0261H
5008H	2049H
500AH	2081H
500CH	0013H
500EH	0002H
5010H	0019H
5012H	60D2H

EXPERIMENT No-4B

DoE: 05.03.2019

DOS: 12.03.2019

Write a program to find the 2's Complement directly for byte data using 8086. The data stored in 6000H onwards. Store them after NEG from 5000H onwards.

Memory location	Instructions	Comments.
2000H	MOV SI, 6000H	Move the address 6000H to SI.
2003H	MOV DI, 5000H	Move the address 5000H to DI.
2006H	MOV CX, 000AH	Move the data 000AH to CX register.
op: 2009H	MOV AL, [SI]	Move the content of SI to accumulator.
200BH	NEG AL	Apply 2's complement to the content of the accumulator.
200DH	INC SI	SI is incremented by one.
200EH	MOV [DI], AX	Move the content of accumulator to DI.
2010H	INC DI	DI is incremented by one.
2011H	DEC CX	CX register is decremented by one.
2012H	JNZ loop	Jump on loop if the zero flag is not set.
2014H	INT 03H	END of program.

Result:-

Input -

<u>Memory location.</u>	<u>Data</u>
6000H.	BFH.
6001H.	EFH.
6002H.	EAH.
6003H.	FFH.
6004H.	F5H.
6005H.	FFH.
6006H.	9FH.
6007H.	FDH.
6008H.	B7H.
6009H.	DFH.

Output -

<u>Memory location.</u>	<u>Data</u>
5000H.	41H.
5001H.	11H.
5002H.	16H.
5003H.	01H.
5004H.	0BH.
5005H.	01H.
5006H.	61H.
5007H.	03H.
5008H.	49H.
5009H.	21H.

Conclusion -

In the program we perform 2's complement by using NEG to some data byte wise data and store them in a specified memory location.