EXPERIMENT No- 5A.

DOE: 12.03.2019
DOS: 2.04.2019

One strings is located in the memory location 6000$_H$ onwards. Move this string bytewise & wordwise to a new memory location 5000$_H$ onwards. Assume that string contains 10 numbers.

Memory location	Instructions	Comments
2000$_H$	MOV SI,6000$_H$	Move the address 6000$_H$ to SI.
2003$_H$	MOV DI,5000$_H$	Move the address 5000$_H$ to DI.
2006$_H$	MOV CX,000A$_H$	Move 10 datas to counter register CX.
2009$_H$	CLD	This is used to clear the direction flag, also this used for auto incrementation.
200A$_H$	REP	This is used prior a instruction to repeat it again and again.
200B$_H$	MOVSB.	Move the string bytewise.
200C$_H$	INT 03$_H$	END OF PROGRAM.

Result:-

Input

Memory location	Data
6000$_H$.	D1$_H$
6001$_H$.	AE$_H$
6002$_H$.	C2$_H$.
6003$_H$	22$_H$.
6004$_H$	F1$_H$.
6005$_H$	A2$_H$.
6006$_H$	63$_H$.
6007$_H$.	2A$_H$.
6008$_H$	30$_H$.
6009$_H$	A0$_H$.

Output

Memory location	Data
5000$_H$	D1$_H$
5001$_H$.	AE$_H$.
5002$_H$.	C2$_H$.
5003$_H$.	22$_H$.
5004$_H$.	F1$_H$.
5005$_H$.	A2$_H$.
5006$_H$.	63$_H$.
5007$_H$.	2A$_H$.
5008$_H$.	30$_H$.
5009$_H$.	A0$_H$.

Scanned by CamScanner

Wordwise:

Memory location	Instruction	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 10 datas to counter register CX.
2009H	CLD.	This is used to clear direction flag. It is also used for auto incrementing.
200AH	REP	This is used prior an instruction to repeat it again and again.
200BH.	MOVSW	Move string wordwise.
200CH	INT 03H.	END OF PROGRAM.

Results:-

Input.

Memory location	Data.
6000H.	AED1H.
6002H.	22C2H
6004H.	A2F1H.
6006H.	2A63H.
6008H.	A030H.
600AH.	AA19H.
600CH.	0006H.
600EH.	AA57H
6010H.	026CH.
6012H.	A884H.

Output

Memory Location.	Data.
5000H.	AED1H.
5002H.	22C2H.
5004H.	A2F1H.
5006H.	2A63H.
5008H.	A030H.
500AH.	AA19H.
500CH.	0006H.
500EH	AA57H.
5010H.	026CH.
5012H.	A884H.

Conclusion

EXPERIMENT No- 5B.

DOE: 12.03.2019
DOS: 2.04.2019

Write a program to compare two strings of data both wordwise and bytewise whether they are equal or not Justify your answer.

Wordwise:-

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 10 datas to CX.
2009H.	CLD.	This is used to clear the direction flag and also for auto incrementation.
200AH.	REPE	Repeat till the two strings are equal.
200BH.	CMPSW	Compare string wordwise.
200CH.	INT 03H.	END OF PROGRAM.

Output- Flag register, FL= F046. H

D15	D14	D13	D12	D11	D10	D9	D8	D7	D6	D5	D4	D3	D2	D1	D0
X	X	X	X	O	D	I	T	S	Z	X	AC	X	P	X	Cy
1	1	1	1	0	0	0	0	0	1	0	0	0	1	1	0

Since, the zero flag is set ie. 1, So, the two strings are equal.

Bytewise :-

Memory location	Instruction.	Comments.
2000_H	MOV SI, 6000_H	Move the address 6000_H to SI.
2003_H	MOV DI, 5000_H	Move the address 5000_H to DI.
2006_H	MOV CX, $000A_H$	Move 10 datas to CX.
2009_H	CLD	This is used to clear direction flag and also for auto incrementation.
$200A_H$	REPE	Repeat till the two strings are equal.
$200B_H$	CMPSB	Compare two strings bytewise.
$200C_H$	INT 03_H.	END OF PROGRAM.

Output :- The value of flag registers FL = F046 H

D_{15}	D_{14}	D_{13}	D_{12}	D_{11}	D_{10}	D_9	D_8	D_7	D_6	D_5	D_4	D_3	D_2	D_1	D_0
X	X	X	X	O	D	I	T	S	Z	X	AC	X	P	X	CY
1	1	1	1	0	0	0	0	0	1	0	0	0	1	1	0

Since, the zero flag is set ie, 1, therefore the two strings are equal.

Conclusion :- From this experiment we learn how to check whether the two strings are equal or not.

EXPERIMENT NO-5C.

DOE: 12.03.2019
DOS: 02.04.2019

One string is stored from 5000_H memory location wordwise and bytewise. Check whether a number is present in the string or not.

Wordwise:-

Memory location	Instructions	Comments.
2000_H	MOV DI,5000_H	Move the memory location 5000_H to DI.
2003_H	MOV CX,$000A_H$	Move 10 to CX.
2006_H	MOV AX,0015_H	Move the data 0015_H to Accumulator.
2009_H	CLD	This is used to clear direction flag.
$200A_H$	REPNE	Repeat till the value is not equal.
$200B_H$	SCASW	Scan the ~~string~~ wordwise.
$200C_H$	INT 03_H	END OF PROGRAM.

Output:- Value of flag register, FL= F046 H

D_{15}	D_{14}	D_{13}	D_{12}	D_{11}	D_{10}	D_9	D_8	D_7	D_6	D_5	D_4	D_3	D_2	D_1	D_0
X	X	X	X	O	D	I	T	S	Z	X	AC	X	P	X	CY
1	1	1	1	0	0	0	0	0	1	0	0	0	1	1	0

Since the zero flag is set ie. 1, therefore the number is string in the string.

tewise:

emory location	Instructions	Comments
2000H	MOV DI, 5000H	Move the address 5000H to DI.
2003H	MOV CX, 000AH	Move 10 to CX.
2006H	MOV AL, 05H	Move the data 05H to Accumulator.
2009H	CLD	This is used to clear the direction flag and for auto incrementation.
200AH	REPNE	Repeat till the string is not equal.
200BH	SCASB	Scan the string bytewise.
200CH	INT 03H.	END OF PROGRAM.

Output: The value of flag register, FL = F893 H

D_{15}	D_{14}	D_{13}	D_{12}	D_{11}	D_{10}	D_9	D_8	D_7	D_6	D_5	D_4	D_3	D_2	D_1	D_0
X	X	X	X	O	D	I	T	S	Z	X	AC	X	P	X	CY
1	1	1	1	1	0	0	0	1	0	0	1	0	0	1	1

Since the zero flag is reset ie. 0, therefore the number is not present in the string.

Conclusion - From this experiment we learn how to check whether a number is present in the string or not.