EXPERIMENT NO.14

Title :- To execute the Assembly language addition program on 8086 kit.

Aim :- To check the output of each program on 8086 kit.

Apparatus :- XPO 8086 kit, keyboard, power supply.

Procedure:-

1] Turn on the trainer kit by connecting the power supply & keyboard to the XPo-86 kit.

2] Type **S** to enter the program trainer will display [SUBSTUT].

3] Press enter, trainer will display [MEMORY].

4] Press enter, trainer will display [SRC-SEGR].

5] Write the starting adder as 0000.

6] Press enter, trainer will display ADDER write offset of the first instruction of the program.

7] Now as you press enter you may notice same code at these adder just key in the new byte hex code of the instruction of your program and press enter, you will get the next address for keying the next hex code byte & so on until you feed the last byte of your program.

Next step is the execution of the program after you have feed in all the hex byte of the program then follow below steps:

1) Press ESCAPE to return command prompt.
2) Type G GOTO appear on the screen.
3) Press enter, burst mode appear on the display BURST.
4) Press enter, trainer will display SRC-SEGR.
5) Type 0000 as string adder you used while feeding the program & press enter.
6) ADDR appear an the display type offset address here as you given at the programming feeding & press enter.
7) Program is executed within the second.

The last step is viewing the data/result. The result can be at one of the three places such as memory, i/o or register.

The mode can be selected by pressing any key other than ESC & ENTER.

To view the result of program after it has been executed proceed as follows:

i. Press **S** & submit appear on the display.
ii. Press ENTER, the first mode MEMORY appear on display, if you wish to view the result/data & press Enter.
SRC-SEGR appears on the display, type the SRC address of memory where you except the data & press enter.
ADDER appears on the display, type the offset address of the data/result & press enter.
iii. Still press any key other than ESC & ENTER the next mode. Register - appears on the display press enter, you can type the name of Register (AX, BX etc) & the specified Register.

If you press ENTER without specifying the register name it will display the content of register AX.

Ex:1 ADD Register, immediate operation execute on microprocessor kit.

Memory Address	**Machine Code**	**Mnemonics**	**Comments**
0201	B8, 15, 34	MOV AX, 3415H	Get 3415H in AX
0204	05, 96, 58	ADD AX, 5896H	Add 5896H to AX
0207	CC	INT3	Interrupt

NOTE:- 05 is the opcode to add 16 bit immediate data to AX register.

Result:-

3415 + 5896= 8CAB H

AX = 8CAB H

EX:2 ADD AL, 8 bit data execute on microprocessor kit.

Add 8 bit 35 immediate data with the contents of register AL.

Memory Address	**Machine Code**	**Mnemonics**	**Comments**
0201	BO, 54	MOV AL,54H	Get 54H in AL
0203	O4, 35	ADD AL, 35H	Add 35H to AL
0205	CC	INT3	Interrupt

NOTE:- 04 is the opcode to add 8 bit immediate data to AL .

Result:-

54+35= 89H

AL =89H

Ex:3 ADD CL, DL execute on microprocessor kit.

Memory Address	**Machine Code**	**Mnemonics**	**Comments**
0201	B1, 90	MOV CL, 90H	8 bit data in CC
0202	B2, 45	MOV DL, 45H	8 bit data in DL
0205	00, D1	ADD CL, DL	ADD CL & DL
0207	CC	INT3	Interrupt

NOTE:- 01, D1 is the opcode.

Result:-

Load CL= 90H and DL=45H

90+45=D5H

CL= D5H

CONCLUSION:-

Thus, we have successfully executed Assembly language addition program on 8086 kit