

LAB # 1**24-bit Addition using PIC18F assembly Language Programming**

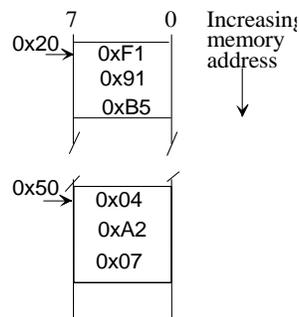
1. **Title:** Introduction to PIC18F assembly language programming.
2. **Objective:** The purpose of this lab is to assemble and debug a PIC 18F assembly language program using Microchip's MBLAB assembler.
3. **Prelab:**
 - i) Assemble and execute the tutorial program written in PIC18F assembly language using the MPLAB (Appendix F of the book).
 - ii) It is desired to add two 24-bit data items in memory as shown in the figure below. Store the result pointed to by 0x50. The operation with sample data is given by

F1 91 B5

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Assume that the data pointers and the data are already initialized.



- a. Flowchart the problem.

b. Convert the flowchart to a PIC18F assembly language program at address 0x100. Do not use Loop and indirect addressing mode.

4. Equipment, Software, and Components required:

Microchip's MPLAB assembler /Debugger

5. Description (corresponding topics covered in the textbook):

-The concepts associated with this lab provide familiarization with basic assembly language programming in MPLAB and with the MPLAB assembler/debugger commands. (Problem 6.14 on Page 152)

Prerequisites: Basics of assembly language programming (Pages 115-119), PIC18F registers (Pages 96-100), PIC18F Memory Organization (Pages 100-104), PIC18F Data movement instructions (Pages 124, 125), Addition instructions (Pages 130- 134), MPLAB assembler/Debugger tutorial (Pages 435-463)

6. Procedure: Assemble the PIC18F assembly language program using the MPLAB. Then use the debugging tool to verify that the program works properly.

7. Deliverables:

i) Postlab

Write a PIC18F assembly language program for Prelab ii)b using Loop and indirect addressing mode.

ii) Lab report

Submit a final Lab report (Staple Signed prelab and typed postlab at the end of the quarter or semester).

8. Concluding remarks:

- Complete each prelab before coming to the lab. Please get it signed.

