

In-Lab 3: Preparation

Below is the source file for exercise 3 in M68000 assembly language.

Put it (copy-paste) in a plain text file and create a suitable .lcf file for it, perhaps from last week's template. Watch out for unusual characters from the original document, particularly quote marks and dashes. Make the changes to the file header that are required, and assemble and link the resulting program.

Look up each of the assembly instructions in this short demo program in your Course Notes: MOVE, SUB, and ADD. Understand what each instruction does, what the letter suffix (.B, .W, or .L) means, and what happens to the contents of the various registers (D0, D1, and D2 in this case). Read at least pages 1-2 through 1-4 of your 68000 Programmers Reference Manual in the Course Notes.

Go through the execution of the program "by hand", predicting the result of each operation. Then confirm it by using bdb to step through each instruction.

lab3.a68

```
.TITLE "Lab 03"
.PSIZE 35,80
/*****
* FILENAME:

* AUTHOR (STUDENT NAME):

* STUDENT NUMBER:

* E-MAIL ADDRESS:

* LAB SECTION:

* ASSIGNMENT NUMBER AND NAME:

* PROFESSOR'S NAME:

* PURPOSE:

*****/
.NOLIST
.INCLUDE      "..\\include\\ascii.i"
.LIST
/***** CONSTANT DATA *****/
.TEXT 1
constX: .WORD 0xFE00

/***** VARIABLE DATA *****/
.DATA
numA: .WORD 1234

/***** PROCESS INSTRUCTIONS *****/
.TEXT 0
.GLOBAL lab03
lab03:

MOVE.L    #1,D0
MOVE.L    #0xAAAAAAAA,D1
MOVE.W    numA,D0
MOVE.W    #numA,D1
MOVE.B    #32,D0
MOVE.W    D0,D2
SUB.B     D0,D2
ADD.W     D1,D2
ADD.W     constX,D0
ADD.B     #0x80,D0

RTS      | exit from program
/***** END OF PROGRAM *****/
```