

Assembly Project for CMPE 310

Assigned: Friday, Sep 29

Due: Monday, Oct 16

Project Description:

Write an 80x86 assembly program using nasm that performs the following functions:

- Reads a set of floating point numbers as ASCII characters from a file, converts them to single precision IEEE floating point representation (see the slides or text if you forgot the definition of the standard), saves the floating point values into an array, prints the floating point number (one per line) and the sum to both the screen and an output file called project3.out. The numbers will be given in standard floating point representation as, e.g. (-)9.999999E+/-99, i.e. (-) is optional, the number of digits to the right of the decimal point is variable, E is always followed by a + or a - and two digits where 09 is used for single digit exponents such as 9.
- **NOTE:** You can **NOT** use fscanf or any other C library function to do the conversion to floating point. You must use the floating point assembly instructions to help with the conversion.
- You can still use printf or fprintf for printing from your code. You can use fopen to open a file handle for “only” the output file. Everything else in the project should be done using low level Linux System Calls.
- As before, the data file name is to be read from the command line.
- You may assume the number of values in the data file never exceeds 1000 elements. Therefore, you may statically declare one thousand 32-bit double words in your data segment.
- Format of the data file: Assume the file gives the number of data points on the first line. Every line following the first line contains exactly one floating point value.
- Make the code modular. Write subroutines to perform repetitive tasks in your project. A percentage of your grade will depend on modularity of the code. Explain every subroutine that you have written using comments in the code and also list them in your write-up along with their functional description. There are examples of these in the file mine.inc
-

You must use the submit program to submit your code. The class name is cmpe310 and the project name is proj3. You are also required to turn in a hardcopy. Follow all the instructions given in project 1 section **Turning in your project**. The breakdown of the points will also be similar as project 1. Submit the project (project3.asm) file, any code that you use from our examples should be in (common_code.asm). Properly format your code using the enscrip command before printing out the hardcopy.

You can construct your own data files for this in the format described above. We will test your code on our own examples. The submitted program is due before class on Monday. You must turn in the hardcopy during the class and it must be identical to the code that you submitted.

THE LABS ARE INDIVIDUAL EFFORTS: INSTANCES OF CHEATING WILL RESULT IN YOU FAILING THE COURSE.