ADVICE ON ASSEMBLY LANGUAGE PROGRAMMING

There are two broad ways to go about things: (a) easy way, and (b) hard way.

If you are setting out to write a program, then the Easy Way consists of the following steps.

1. Write a clear algorithm in informal English.
2. Check the correctness of your algorithm by tracing through it with some test data.
3. Identify---from the lectures slides, textbook, instruction sheets, etc.---the assembly language instructions that correspond to the steps of your algorithm. (See the examples done.)
4. Translate the algorithm into an assembly language program.
5. Load and run your program. If necessary, debug the program taking some test data and by manually tracing through it (with paper and pencil) or by using the single-step mode of the simulator.

And the Hard Way consists of directly producing an assembly-language program.   You will definitely produce a program faster than you would with the Easy Way, but you will then spend much more time in frustrated debugging.

If what you wish to do is to understand how a given piece of code works, then the Easy Way consists of the following steps.

1. Determine---from the lectures slides, textbook, instruction sheets, etc.---exactly what each instruction does.
2. On the basis of (1), try to determine what the entire piece of code does.
3. If you do not succeed in (2), then, using some test data, trace manually through the execution of the code.   (You may also use the simulator, in single-step mode, but keep in mind that you will not have it available in an exam.)

And the Hard Way consists of simply staring at the code and waiting for sudden enlightenment. You will expend less effort than you would with the Easy Way, but you could well end up staring for a long time and without success.

CHOOSE THE PATH OF HAPPINESS; CHOOSE THE EASY WAY!

A. Read the relevant parts of the textbook carefully. The details are very important.   If you don't understand anything, ask immediately!
B. Make sure that you really understand everything you write, i.e., every line of code.   Do not simply copy code from elsewhere because it looks like it will do the job. Ask as needed!
C. EXPECT LITTLE HELPFUL SYSTEM INFORMATION!