

ECS150
WQ2004
Programming Assignment #1
Due: Thurs. Jan. 29, 4:59PM

Sophie will post a note which will explain the following:

- Process for submitting the solutions electronically
- How to use Bochs and Minix
- Sign-up sheet for interactive grading
- Process for interactive grading. Briefly, you will run your programs on her laptop. When required, please have data files ready to be used for testing; Sophie might ask you to perform minor edits to the files.

1. Write a program that when executed will help you determine the system-wide number of processes that can be accommodated in Minix. Consider two possibilities: (a) all process table slots are used up, or (b) main memory is exhausted. Why is it inadvisable to run this program on a public machine?

2. Write a program that when executed will help you identify the number of open file descriptions that are possible in Minix. There are two parts to the problem:

- The number of per process file descriptors that can be open at any time.
- The system-wide number of file descriptors that can be open at any time. Hint: You might want to make use of the solution to (1) above, but be sure that the resource you are exhausting is related to the number of open file descriptors and not the number all allowable processes.

3. Write a program that counts the number of occurrences of a certain character in a file. The character is to be provided as a command line input, say `-c`. Also another command line input is to be provided, `-u`, which will indicate whether the count is to be case sensitive.

4. Glass text, Exercise 13.1, page 559

5. Glass text, Exercise 13.2, page 559

6. Glass text, Exercise 13.3, page 560