Operating Systems with C/C++
Semester 1, 2012
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Assessed Exercise 1

Deadline: Friday 12 October, 4pm

The Task

The purpose of this exercise is to write a program that lists all files in a directory. More precisely, your program should accept exactly one argument and lists all files in this directory. If the argument does not correspond to a readable directory, an error messages should be output.

Your program should work as follows:

- The program should have a string comparison function, which compares two strings according to the alphabetic order and returns 1 if the first argument is greater than the second, -1 if the first argument is smaller and 0 if the two strings are equal. For comparison of characters, simply compare the character codes.
- You must implement an insertion function which accepts an ordered list of strings and a string as arguments and produces an ordered list of strings with this string added.
- You read a directory by first opening it with the library function `opendir`, then obtain each directory entry with the library function `readdir`, and when finished, close the directory with the library function `closedir`.
- Your output should be sorted alphabetically. To achieve this, you should construct an orderd list from all entries in the directory by repeatetly calling the insertion function defined above.

Marking Scheme

Please use the School Submission System for submitting your code. Please submit only the source files you have written yourself. We will compile and run your code on the Linux machines and mark it accordingly. Please in particular note that we will use the compiler option introduced in the lecture and will deduct 6 marks immediately if there is any compiler error or warning.

We will award marks as follows:

- 4 marks for the string comparison function.
- 8 marks for proper construction and usage of the ordered list of strings.
- 8 marks for proper usage of library calls to read the directory.