

Lab 1C Requirement

Hi everyone,

Here are the details of Lab 1C requirement.

1. Besides implementing the `--profile` option, you are going to come up with three test cases/benchmarks. Each with some options. The benchmark **should not be too simple/trivial**. For example, just `"cat foo.txt | sort"` is not enough. You shall cover multiple open files, pipelines, and subcommands.
2. Each benchmark should be written in two forms, one for `simpsh`, one for `bash/dash`. To use `dash`, you may need to prepend `/usr/local/cs/bin` to your `PATH` if you haven't done so.
3. Run each benchmark in each version (at least) three times. Reporting the average values is enough (say you run one benchmark in `simpsh` version for 5 times, then just report the average values of the 5 experiments). Collect the user time and system time (both should be CPU time, not wall time) of both the shell itself and processes called by shell.
4. In the end, you shall submit a doc **in pdf format** listing the data of your experiments. Like a 3 by 3 table, 3 benchmarks by 3 versions. Make sure that you list the data in a format that it is easy for us to check and compare data of the same benchmark in the three different versions (`simpsh`, `bash`, and `dash`).
5. Then you should compare the experimental result of your benchmarks in three different versions (`simpsh`, `bash`, and `dash`), and generate your own conclusion based on these data, like which shell is the most efficient. We are going to check if the conclusion is made upon the data you provided, so there is no single correct answer. Different students have different implementations, so their conclusions may be different. For example, some students may see the benchmark in `simpsh` version is faster than the `bash` version while some other students may have the opposite result. This is totally fine.
6. Open-ended, do your best!