

Lab 1 Report: Performance of simpsh, bash and dash

Benchmarks

	Simpsh	bash/dash
1	<code>./simpsh --rdonly pg98.txt --creat --append --wronly err.txt --pipe --pipe --pipe --creat --wronly b.txt --command 0 3 1 cat --command 2 5 1 grep -o '\<Dickens\>' --command 4 6 1 wc -l --close 3 --close 5 --wait</code>	<code>cat pg98.txt 2>>err.txt grep -o '<Dickens>' 2>>err.txt wc -l >> b.txt 2>>err.txt</code>
2	<code>./simpsh --rdonly pg98.txt --creat --append --wronly err.txt --pipe --pipe --pipe --creat --wronly a.txt --command 0 3 1 cat --command 2 5 1 tr [:space:] '\n' --command 4 7 1 sort -u --command 6 8 1 wc -l --close 3 --close 5 --close 7 --wait</code>	<code>cat pg98.txt 2>>err.txt tr [:space:] '\n' 2>>err.txt sort -u 2>>err.txt wc -l > a.txt 2>>err.txt</code>
3	<code>./simpsh --rdonly pg98.txt --creat --append --wronly err.txt --pipe --pipe --pipe --creat --wronly result.txt --command 0 3 1 tr [:upper:] [:lower:] --command 2 5 1 sort -u --command 4 7 1 tr [:space:] '\n' --command 6 8 1 wc -l --close 3 --close 5 --close 7 --wait</code>	<code>tr [:upper:] [:lower:] 2>err.txt <pg98.txt sort -u 2>>err.txt tr [:space:] '\n' wc -l 1>result.txt 2>>err.txt</code>

Note:

- Those testcases are based on the pg98.txt.
- I add a profile option in front of the wait option to collect the following run time in the test of simpsh.

RunTime

Testcases	Simpsh	Bash	Dash
1	User:0.0000s Sys:0.0002s User Process: 0.0022s Sys Process: 0.0022s	User: 0.0010s Sys: 0.0020s User Process: 0.0027s Sys Process: 0.0047s	User: 0.0000s Sys: 0.0000s User Process: 0.0000s Sys Process: 0.0000s
2	User: 0.0000s Sys: 0.0002s User Process: 0.4463s Sys Process: 0.0108s	User: 0.0013s Sys: 0.0027s User Process: 0.4583s Sys Process: 0.0187s	User: 0.0000s Sys: 0.0000s User Process: 0.4500s Sys Process: 0.0100s
3	User: 0.0000s Sys: 0.0001s User Process: 0.0560s Sys Process: 0.0062s	User: 0.0010s Sys: 0.0040s User Process: 0.5137s Sys Process: 0.0303s	User: 0.0000s Sys: 0.0000s User Process: 0.5133s Sys Process: 0.0133s

Conclusion

Based on the data collected from my test cases, simpsh is the most efficient, and then dash, while bash is the slowest one. Because of fast speed of simpsh, there are some inconsistent data, e.g., in testcase 3, simpsh is much faster than bash and dash.