

# Lab 1C Report

Name: Shawn Ma

UID: 204996814

Feb 7, 2019

## Benchmarks:

Number	simpsh	bash / dash
1	<pre>./simpsh --pipe --pipe \ --pipe --rdonly pg98.txt \ --creat --wronly output.txt \ --creat --wronly error.txt \ --command 6 1 8 cat \ --command 0 3 8 sort \ --command 2 5 8 grep "the" \ --command 4 7 8 wc -l \ --close 0 --close 1 --close 2 \ --close 3 --close 4 --close 5 \ --profile --wait</pre>	<pre>cat pg98.txt   sort   grep "the"   wc -l &gt; output1.txt 2&gt; error1.txt</pre>
2	<pre>./simpsh --pipe --pipe \ --rdonly pg98.txt --creat \ --wronly output2.txt \ --creat --wronly error2.txt \ --command 4 1 6 cat \ --command 0 3 6 sort -R \ --command 2 5 6 sort -R \ --close 0 --close 1 --close 2 \ --close 3 --profile --wait</pre>	<pre>cat pg98.txt   sort -R   sort -R &gt; output2.txt 2&gt; error2.txt</pre>
3	<pre>./simpsh --pipe --pipe \ --rdonly pg98.txt --creat \ --wronly output3.txt \ --creat --wronly error3.txt \ --command 4 1 6 cat \ --command 0 3 6 tr A-Z a-z \ --command 2 5 6 \ cat --close 0 \ --close 1 --close 2 --close 3 \ --profile --wait</pre>	<pre>cat pg98.txt   tr A-Z a-z   cat &gt; output3.txt 2&gt; error3.txt</pre>

## Performance comparison:

Number	Time	Type	simpsh	bash	dash
1	user	children	0.051s	0.053s	0.051s
		shell	0.001s	0.000s	0.000s
	system	children	0.007s	0.011s	0.010s
		shell	0.001s	0.001s	0.000s
2	user	children	1.595s	1.643s	1.662s
		shell	0.001s	0.001s	0.000s
	system	children	0.008s	0.011s	0.007s
		shell	0.001s	0.001s	0.000s
3	user	children	0.063s	0.058s	0.069s
		shell	0.000s	0.000s	0.000s
	system	children	0.006s	0.013s	0.012s
		shell	0.001s	0.001s	0.000s

## Conclusion:

1. Simpsh in general performs the best for child processes' user CPU time and system CPU time. It has approximately the same performance on corresponding times for shell.
2. Between bash and dash: dash performs better on user and system CPU times on shell, and bash and dash hold a tie on child processes' user and system CPU times.