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Lab 1C

**Benchmarks:**

	<b>bash/dash</b>	<b>simpsh</b>
<b>test case 1</b>	cat pg98.txt   grep -v a   sort -r	./simpsh --rdonly pg98.txt --wronly out.txt --wronly outerr.txt --pipe --pipe --profile --command 0 4 2 cat - -command 3 6 2 grep -v a -- command 5 1 2 sort -r --close 3 --close 4 --close 5 --close 6 --wait
<b>test case 2</b>	cat pg98.txt   grep "a"   grep "1"	./simpsh --rdonly pg98.txt --wronly out.txt --wronly outerr.txt --pipe --pipe --profile --command 0 4 2 cat - -command 3 6 2 grep "a" -- command 5 1 2 grep "1" -- close 3 --close 4 --close 5 -- close 6 --wait
<b>test case 3</b>	cat pg98.txt   uniq   sort -r	./simpsh --rdonly pg98.txt --wronly out.txt --wronly outerr.txt --pipe --pipe --profile --command 0 4 2 cat - -command 3 6 2 uniq -- command 5 1 2 sort -r --close 3 --close 4 --close 5 --close 6 --wait

**Result:**

		bash		dash		simpsh	
		User	Sys	User	Sys	User	sys
test case 1	Parent	0.0003	0.0023	0.0006	0.0023	0	0.005275
	Child	0.0063	0.0047	0.0053	0.0063	0.000155	0.003697
test case 2	Parent	0.0006	0.002	0.001	0.002	0	0.006343
	Child	0.0063	0.0077	0.0077	0.0063	0.000160	0.004266
test case 3	Parent	0.001	0.0013	0.006	0.0017	0.000126	0.105663
	child	0.118	0.0097	0.111	0.0163	0.000053	0.014163

The numbers highlighted with red are the fastest in each case.

**Conclusion:**

From the table above, simpsh is the most efficient one in most cases, except the system time of parent. Bash performs slightly faster than dash.