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Project 4 Report

For the experiments, we used Ubuntu 16.04 LTS in a virtual machine with 4processors and 4GB memory. The computation times calculated with 'gettimeofday()' function of time library in terms of microseconds in order to get precise results.

File System Operations:

For this part, we calculate the computation time of file system creation, disk creation, mount operation, file creation and opening file operation. Each calculation made 5 times and taken their averages and standart deviations respectively. For plot, check figure 1. In the figure we can see that the significance of mount, create and open operations are very low in comparison between disk creation and file system creation.

Operation/ Time(microseconds)	myfs_diskcreate()	myfs_makefs()	myfs_mount()/ myfs_unmount()	myfs_create()	Myfs_open()
Average Time	0.285048 ms	0.012702ms	0.000133ms	0.000001	0.000001
Standart Deviation	0.013467 ms	0.000667ms	0.000063ms	0	0

Write Operation:

Each calculation made 5 times and taken their averages and standart deviations respectively. For plot, check figure 2.

Byte/ Time(microseconds)	100 Byte	1024 Byte	4096 Byte	10240 Byte
Average Time	0.00008 ms	0.000007ms	0.000007ms	0.000003ms
Standart Deviation	0.00001ms	0.000001ms	0.000002ms	0ms

Read Opertation:

Each calculation made 5 times and taken their averages and standart deviations respectively. For plot, check figure 2.

Byte/ Time(microseconds)	100 Byte	1024 Byte	4096 Byte	10240 Byte
Average Time	0.285048 ms	0.012702ms	0.000133ms	0.000001
Standart Deviation	0.013467 ms	0.000667ms	0.000063ms	0

Plots:

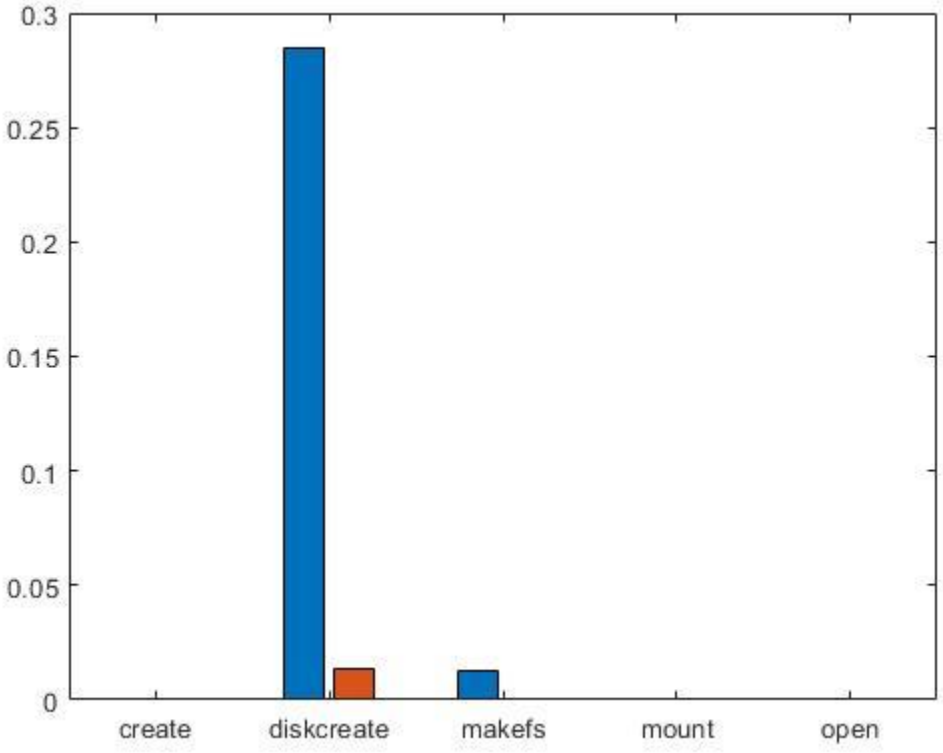

Figure 1(Y Axis: Time, X Axis: Computation Time in ms, Standard Derivation)

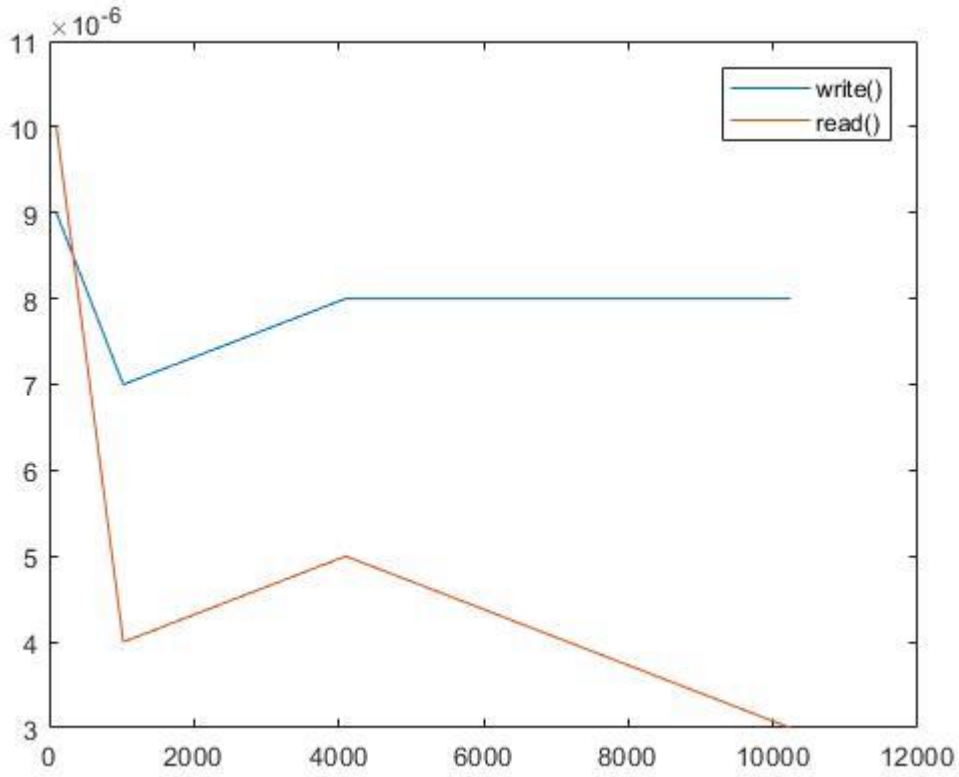

Figure 2 (Y Axis: time in ms, X Axis: Byte)