Operating Systems
Jacobs University Bremen
Brian Sherif Nazmi Hanna Nasralla

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Homework 1

Problem1.1

Solution:

a) Find code in folder.

b) Measurements taken using system (scat-s) and library (scat-l) calls:

	Real	User	System
Library	0.004	0.004	0.000
	0.005	0.005	0.000
	0.005	0.005	0.000
System	2.728	0.640	2.087
	2.721	0.640	2.097
	2.711	0.677	2.034

Using the table above, it can be observed that the library calls spend more time in user space than in the system; in contrast to the system call version of the program which spends most of its run time in the system kernel. It can also be observed that the system call spends more time overall.
A reason for this could be because of the $getc()$ and $putc()$ which put the data in a buffer before it is written to the standard output to request for permission from the kernel to print. While on the other hand; the $read()/write()$ functions invoke the kernel everytime they are called. This causes a lack of efficiency as system calls go from user space into kernel space then back into user space (expensive operation). This is explained by why the System version takes longer and spends most of its time in kernel space.

Problem1.2

Solution:

Find code in folder.