

Lab 1: System Call Implementation

Add a new system call `info(int param)` that takes one integer parameter with value 1, 2, 3, or 4. Depending on the value, it returns:

- (1) A count of the processes in the system;
- (2) A count of the number of times the system call “info” has been made by the current process so far;
- (3) The number of memory pages the current process is using above the address `0xF000000`.
- (4) The address of the kernel stack.

What to submit:

You need to submit the following:

- (1) A diff of xv6 code you have modified (hint: use “git diff”)
- (2) A detailed explanation what changes you have made and necessary screenshots to show your work and results
- (3) A detailed description of XV6 source code (including your modifications) about how the `info` system call is processed, from the user-level program into the kernel code, and then back into the user-level program.

Grades breakdown:

Correct implementation and demo of `info()` system call: 70%

- count of the processes in the system: 20%
- report the number of times the system call “info” has been invoked by this program: 15%
- report the number of memory pages the current process is using above address `0xF000000`: 20%
- report the number of memory pages the current process is using: 15%

Clear and detailed explanation of the changes made: 15%

Clear and detailed explanation of system call workflow: 15%