

Project 2B Report: xv6 System Call

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Acknowledgement: I acknowledge that I am submitting this project late and will get points off due to late submission.

To implement the system call `getreadcount(void)`, I make the following changes to the source files of xv6, in a top-down order.

In `user.h`, add `int getreadcount(void);` which is a C function declaration;

In `syscall.h`, add `#define SYS_getreadcount 22` which define a system constant for `getreadcount` syscall;

In `syscall.c`, add `extern int sys_getreadcount(void);` which prepares for syscall by linking the C function `int getreadcount(void)` to the C function pointer;

In `syscall.c`, add `[SYS_getreadcount] sys_getreadcount`, within static int `(*syscalls[])(void)` which adds the C function into the C function pointer;

In `usys.S`, add `SYSCALL(getreadcount)` which enables this newly added syscall to be invoked;

In `sysfile.c`, add a global variable `static int readcount = 0;`, add `++readcount;` in the definition of `int sys_read(void)` and define `int sys_getreadcount(void)` by simply return the global variable `readcount`.

These changes enable us to add a new system call `getreadcount`, which works exactly the same as any other system calls such as `read` and `write` alike.

Both test cases passed.