

CS450 Operating System

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Programming Assignment 2

Introduction

Add the `countTraps()` system call in `xv6`. When a user program calls `countTraps`, it will print out the number of times the user process has been trapped to the OS, and what types of traps has occurred and their corresponding number of occurrences.

Build & Run Instructions

```
cs450@ubuntu:~$ cd xv6-public 1
cs450@ubuntu:~/xv6-public$ make qemu-nox 2
dd if=/dev/zero of=xv6.img count=10000
10000+0 records in
10000+0 records out
5120000 bytes (5.1 MB, 4.9 MiB) copied, 0.0335819 s, 152 MB/s
dd if=bootblock of=xv6.img conv=notrunc
1+0 records in
1+0 records out
512 bytes copied, 0.000157489 s, 3.3 MB/s
dd if=kernel of=xv6.img seek=1 conv=notrunc
372+1 records in
372+1 records out
190884 bytes (191 kB, 186 KiB) copied, 0.000932747 s, 205 MB/s
qemu-system-i386 -nographic -drive file=fs.img,index=1,media=disk,format=raw -drive file=xv6.img,index=0,media=disk,format=raw -smp 2 -m 512
xv6...
cpu1: starting
cpu0: starting
sb: size 1000 nblocks 941 ninodes 200 nlog 30 logstart 2 inodestart 32 bmap start 58
init: starting sh
$
```

```
init: starting sh
$ countTraps 3
countTraps test 1
get pid 3 ALL Traps 9853
get pid 3 system call 64
get pid 3 IRQ TIMER 9731
get pid 3 IRQ COM1 21
get pid 3 IRQ IDE 37
countTraps test 2
get pid 3 ALL Traps 9997
get pid 3 system call 203
get pid 3 IRQ TIMER 9736
get pid 3 IRQ COM1 21
get pid 3 IRQ IDE 37
```