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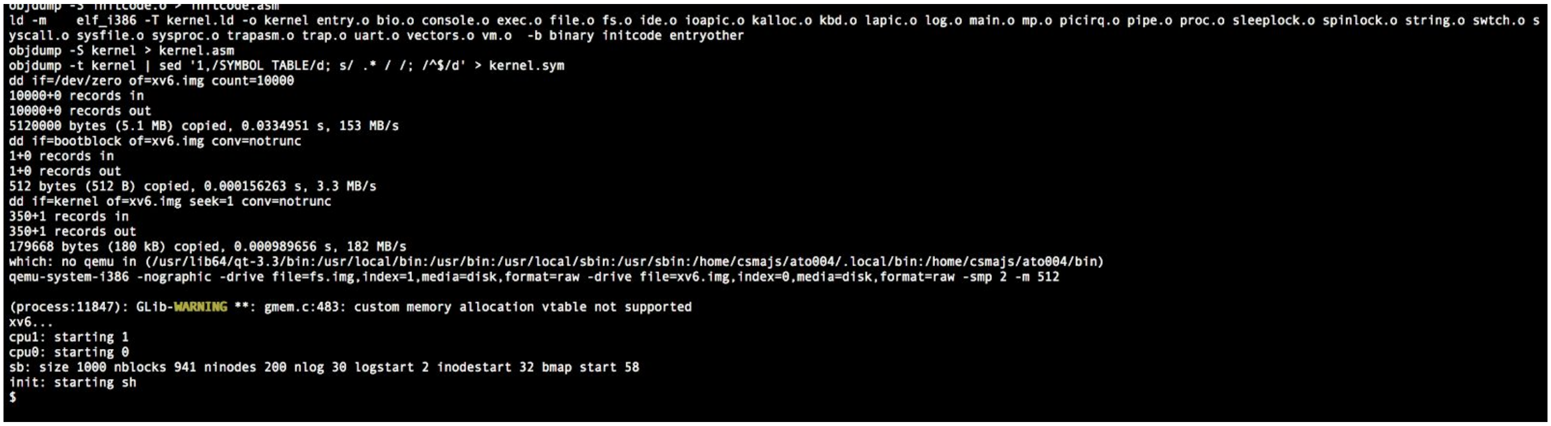
CS153

Lab 1 Report

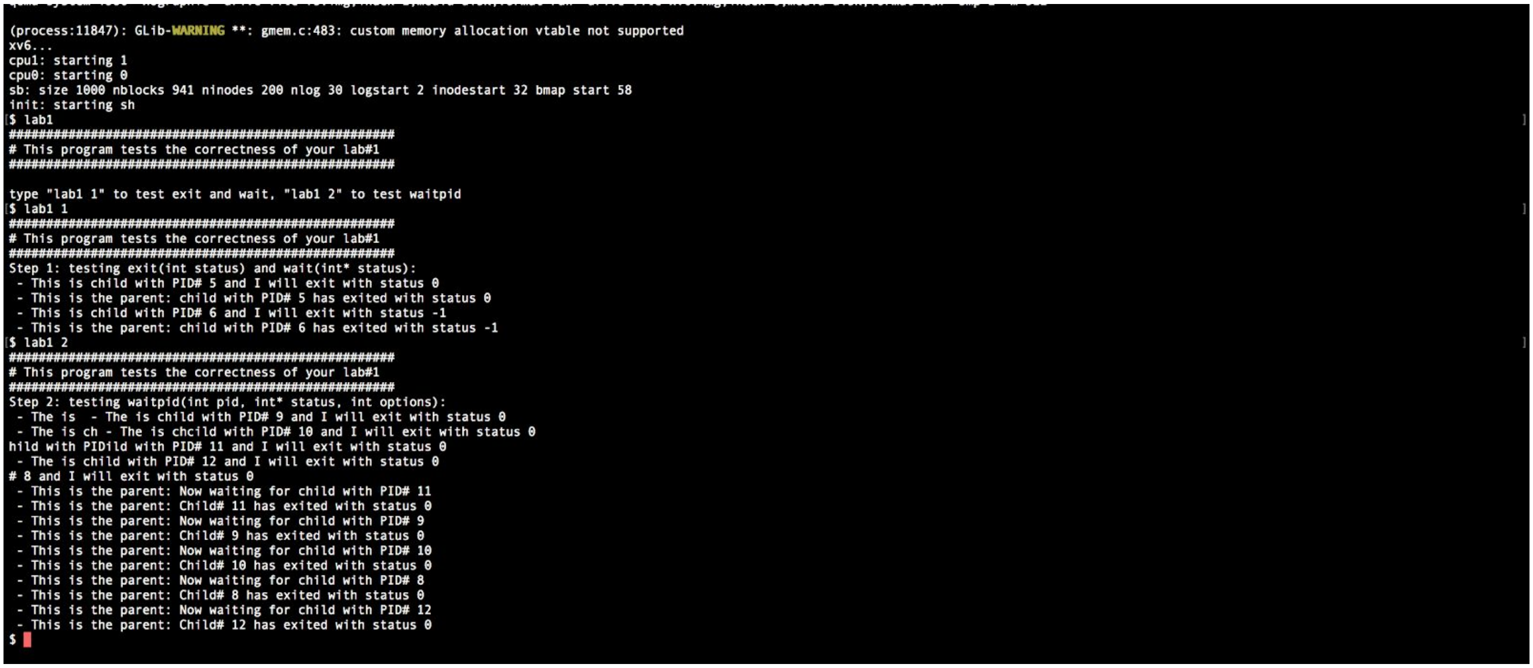
1. In our lab, we changed multiple files in order to meet the specifications of lab 1. We changed the files defs.h, proc.h, proc.c, user.h, usertests.c. We also had to change the following files in order to adjust the exit and wait signatures: wc.c, trap.c, sh.c, mkdir.c, ln.c, ls.c, cat.c, forktest.c, grep.c, rm.c, zombie.c, kill.c, init.c. We added waitpid and changed the following files if they were not listed yet: syscall.c, sysproc.c, usys.S, syscall.h.

2. Test correctness of code:



```
objdump -S initcode.o > initcode.asm
ld -m    elf_i386 -T kernel.ld -o kernel entry.o bio.o console.o exec.o file.o fs.o ide.o ioapic.o kalloc.o kbd.o lapic.o log.o main.o mp.o picirq.o pipe.o proc.o sleeplock.o spinlock.o string.o swtch.o s
yscall.o sysfile.o sysproc.o trapasm.o trap.o uart.o vectors.o vm.o  -b binary initcode entryother
objdump -S kernel > kernel.asm
objdump -t kernel | sed '1,/SYMBOL TABLE/d; s/ .* / /; /^$/d' > kernel.sym
dd if=/dev/zero of=xv6.img count=10000
10000+0 records in
10000+0 records out
5120000 bytes (5.1 MB) copied, 0.0334951 s, 153 MB/s
dd if=bootblock of=xv6.img conv=notrunc
1+0 records in
1+0 records out
512 bytes (512 B) copied, 0.000156263 s, 3.3 MB/s
dd if=kernel of=xv6.img seek=1 conv=notrunc
350+1 records in
350+1 records out
179668 bytes (180 kB) copied, 0.000989656 s, 182 MB/s
which: no qemu in (/usr/lib64/qt-3.3/bin:/usr/local/bin:/usr/bin:/usr/local/sbin:/usr/sbin:/home/csmajs/ato004/.local/bin:/home/csmajs/ato004/bin)
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

(process:11847): GLib-WARNING **: gmem.c:483: custom memory allocation vtable not supported
xv6...
cpu1: starting 1
cpu0: starting 0
sb: size 1000 nblocks 941 ninodes 200 nlog 30 logstart 2 inodestart 32 bmap start 58
init: starting sh
$
```



```
(process:11847): GLib-WARNING **: gmem.c:483: custom memory allocation vtable not supported
xv6...
cpu1: starting 1
cpu0: starting 0
sb: size 1000 nblocks 941 ninodes 200 nlog 30 logstart 2 inodestart 32 bmap start 58
init: starting sh
$ lab1
####################################################
# This program tests the correctness of your lab#1
####################################################

type "lab1 1" to test exit and wait, "lab1 2" to test waitpid
$ lab1 1
####################################################
# This program tests the correctness of your lab#1
####################################################
Step 1: testing exit(int status) and wait(int* status):
 - This is child with PID# 5 and I will exit with status 0
 - This is the parent: child with PID# 5 has exited with status 0
 - This is child with PID# 6 and I will exit with status -1
 - This is the parent: child with PID# 6 has exited with status -1
$ lab1 2
####################################################
# This program tests the correctness of your lab#1
####################################################
Step 2: testing waitpid(int pid, int* status, int options):
 - The is  - The is child with PID# 9 and I will exit with status 0
 - The is ch - The is chcild with PID# 10 and I will exit with status 0
hild with PIDild with PID# 11 and I will exit with status 0
 - The is child with PID# 12 and I will exit with status 0
# 8 and I will exit with status 0
 - This is the parent: Now waiting for child with PID# 11
 - This is the parent: Child# 11 has exited with status 0
 - This is the parent: Now waiting for child with PID# 9
 - This is the parent: Child# 9 has exited with status 0
 - This is the parent: Now waiting for child with PID# 10
 - This is the parent: Child# 10 has exited with status 0
 - This is the parent: Now waiting for child with PID# 8
 - This is the parent: Child# 8 has exited with status 0
 - This is the parent: Now waiting for child with PID# 12
 - This is the parent: Child# 12 has exited with status 0
$
```