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how did you design your program:

For program1, it is basically depends on tutorial2 slide and the reference website in it. But in program1, I add extra condition in order to run the tests. I assume the code in the slide had taught most of the things. All I need to do is to change some order and consider a little bit about the different conditions in the test files.

For program2, I fail to run it. When I insmod program2.ko , it always shows that "unknown symbol in module", I am not sure what is the reasons, maybe it is because of the failure of exporting, though I am pretty sure that I succeeded in exporting those functions. Still I assume there is not much wrong in my code. It took me a long time to finish coding it. It is a pity that I cannot run it. I was inspired by the tut2 a lot.

How to set up your development environment, including how to compile kernel:

I set it up with my classmate. I think this is the hardest part of this assignment. We encounter a lot of problems. We have to search for the internet and read the slides over and over again. (It magically work out after I cry out loud.

Screenshot of your program output: program 1

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● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./bus
Process start to fork
I'm the Parent Process, my pid = 11812
I'm the Child Process, my pid = 11812
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGBUS program

Parent process receives the signal: 135
child process get SIGBUS signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$

● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./abort
Process start to fork
I'm the Parent Process, my pid = 11890
I'm the Child Process, my pid = 11890
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGABRT program

Parent process receives the signal: 134
child process get SIGABRT signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$

root@csc3150:/home/vagrant/csc3150/Assignment1/source/program1# ./program1 ./alarm
Process start to fork
I'm the Parent Process, my pid = 13278
I'm the Child Process, my pid = 13278
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGALRM program

Parent process receives the signal: 14
child process get SIGALRM signal
root@csc3150:/home/vagrant/csc3150/Assignment1/source/program1#

● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./illegal_instr
Process start to fork
I'm the Parent Process, my pid = 14601
I'm the Child Process, my pid = 14601
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGILL program

Parent process receives the signal: 132
child process get SIGILL signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$

● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./floating
Process start to fork
I'm the Parent Process, my pid = 14330
I'm the Child Process, my pid = 14330
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGFPE program

Parent process receives the signal: 136
child process get SIGFPE signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$

● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./interrupt
Process start to fork
I'm the Parent Process, my pid = 14665
I'm the Child Process, my pid = 14665
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGINT program

Parent process receives the signal: 2
child process get SIGINT signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$
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● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./kill
Process start to fork
I'm the Parent Process, my pid = 14715
I'm the Child Process, my pid = 14715
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGKILL program

Parent process receives the signal: 9
child process get SIGKILL signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$

● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./pipe
Process start to fork
I'm the Parent Process, my pid = 14779
I'm the Child Process, my pid = 14779
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGPIPE program

Parent process receives the signal: 13
child process get SIGPIPE signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$

● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./segment_fault
Process start to fork
I'm the Parent Process, my pid = 14925
I'm the Child Process, my pid = 14925
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGSEGV program

Parent process receives the signal: 139
child process get SIGSEGV signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$

● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./terminate
Process start to fork
I'm the Parent Process, my pid = 15763
I'm the Child Process, my pid = 15763
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGTERM program

Parent process receives the signal: 15
child process get SIGTERM signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$

● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./normal
Process start to fork
I'm the Parent Process, my pid = 14741
I'm the Child Process, my pid = 14741
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the normal program

-----CHILD PROCESS END-----
Parent process receives the signal: 0
Normal termination with EXIT STATUS = 0
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$

● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./quit
Process start to fork
I'm the Parent Process, my pid = 14841
I'm the Child Process, my pid = 14841
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGQUIT program

Parent process receives the signal: 131
child process get SIGQUIT signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$

● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./stop
Process start to fork
I'm the Parent Process, my pid = 15090
I'm the Child Process, my pid = 15090
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGSTOP program

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● vagrant@csc3150:~/csc3150/Assignment1/source/program1$ ./program1 ./trap
Process start to fork
I'm the Parent Process, my pid = 15826
I'm the Child Process, my pid = 15826
Child process start to execute test program:
-----CHILD PROCESS START-----
This is the SIGTRAP program

Parent process receives the signal: 133
child process get SIGTRAP signal
○ vagrant@csc3150:~/csc3150/Assignment1/source/program1$
```

## Program2 fail to insmod

What did you learn from the tasks:

I have to admit this assignment force me to learn a lot of things. For example, the intrusion of linux system.

And the basic concept of operating system.(How does os fork a parents and a child process, the connection between process and thread...)Beside that, I have deeper understanding of virtual machine and environment setting up...

