gitlog.tex)

# 1  COMMANDS

Log of commands:

- mkdir /scratch/fall2015/cs444-24; cd /scratch/fall2015/cs444-24

- git clone git://git.yoctoproject.org/linux-yocto-3.14

- cp /scratch/opt/environment-setup-i586-poky-linux .

- cd linux-yocto-3.14; source ../environment-setup-i586-poky-linux

- cp /scratch/spring2015/files/config-3.14.26-yocto-qemu ./.config

- make -j4

- qemu-system-i386 -gdb tcp::5524 -S -nographic -kernel arch/i386/boot/bzImage -drive file=core-image-lsb-sdk-qemux86.ext3,if=virtio -enable-kvm -net none -usb -localtime –no-reboot –append ”root=/dev/vda rw console=ttyS0 debug”.

- $GDB

- target target remote :5524

# 2  REFLECTIONS

1. I think the point of the assignment was to refresh us on using pthreads and to get us thinking in concurrency.
2. I approached the problem piece by piece. First, how to create a thread, then buffer implementation, prouducer implementation, consumer implementation, random number generation, then handling of the full and empty buffers. This piece by piece approach made the algoriths/constructs fall into place.
3. I tested by running the program as normal, but also testing the extremes. I filled the buffer with items and then tried to add onother to test the blocking when the buffer is full, and did the opposite to test when the buffer is empty. I also tested on different platforms to make sure the random number generation was handled correctly.
4. I (re)learned about pthreads. I also leared about including asm inline, and the basics of concurrecy programming.

| Detail | Author | Description |
|--------|--------|-------------|
| 1ca4174 | Your Name | Added linux kernel |
| 15a4c12 | Your Name | Added concurrency |
| d4c0a88 | Taylor Fahlman | Makefile: Added make file will the most common flags for style and debugging. Used |
| e2d0eed | Taylor Fahlman | Makefile and assignment1.c update |
| 4d9e3d8 | Taylor Fahlman | Filled general outline of produce function |
| 2244c72 | Taylor Fahlman | Assigned buffer pointer correctly to the address of the item with dummy values |
| 607fa54 | Taylor Fahlman | Filled consume function |
| f4facc9 | Taylor Fahlman | Fixed compile issues |
| 6445be5 | Taylor Fahlman | Added sleep and print in consume function |
| 4b56781 | Taylor Fahlman | Changed the buffer to be a pointer to an array of 32 buffer items |
| 2c5734f | Taylor Fahlman | Updated assignment 1 |
| 5d9edbd | Taylor Fahlman | Removed unneeded semaphore .h¿ |
| 209f751 | Taylor Fahlman | Added comments for placeholders and fixed print statement |
| d09e230 | Taylor Fahlman | Changed the global buffer to a struct |
| 7ff17bd | Taylor Fahlman | Outlined needed steps in produce |
| c5c13a9 | Taylor Fahlman | Changed pthread create functions to not segfault |
| 50cf977 | Taylor Fahlman | Changed global buffer pointer to a variable. Changed reference to it so that it could |
| 050904e | Taylor Fahlman | Added mutex init, and locking/releasing on produce |
| 7249be0 | Taylor Fahlman | Fixed issues with printing to stdout |
| 2274e68 | Taylor Fahlman | Added mutex lock/unlock to consumer |
| 29e0fd1 | Taylor | Added signal catch and reimplemented buffer as queue |
| a4f7c99 | Taylor | typo fixes |
| 95628a0 | Taylor | Added signal.h so signals can work |
| 1a04be2 | Taylor | Added random number generation function |
| 4d08be2 | Taylor Fahlman | Moved function defintions to correct place |
| a61e632 | Taylor Fahlman | Removed return that will never be executed |
| 12d413c | Taylor Fahlman | Added CPUID definition and fixed compiler errors and warning about function defini |
| 97b39eb | Taylor Fahlman | Corrected CPUID define to differ from other global variables. Added rdrand generate |
| 056005c | Taylor Fahlman | Fixed cpuid function |
| f927d9b | Taylor Fahlman | Fixed prototype of number generator function |
| 4bcd392 | Taylor Fahlman | Added pthread condition variables, and fixed rdrand macro |
| 6bc6226 | Taylor Fahlman | Added blocking on full or empty buffer. Added calls to random number generation. |
| 8e614a9 | Taylor Fahlman | Added mersene twister generation. Added more cleanup in the signal catch. Moved p |
| 9fb3e85 | Taylor Fahlman | Added mersene twister files |
| 0078163 | Taylor | Removed producer sleep time because I couldn't get it to work |
| 6a7edbe | Taylor | Fixed blocking on full buffer |
| c96174c | Taylor Fahlman | Fixed tabbing |
| 629da73 | Taylor Fahlman | Merge branch 'master' of https://github.com/fahlmant/cs444 |
| 2d45427 | Taylor Fahlman | Added writeup skeleton |
| 27eb373 | Taylor Fahlman | Added bash file to transform gitlog to latex. Added in makefile targets |
| e9a0637 | Taylor | Finished writeup tex and pdf |
| 084ab15 | Taylor Fahlman | Moved assignment 1 to subdir, added assignment2 |
| 13edff9 | Taylor Fahlman | Fixed merge conflicts |
| d43a10f | Taylor Fahlman | added mutexes |
| 4795134 | Taylor Fahlman | Labled philosophers |
| 5d024e0 | Taylor Fahlman | added eat and think functions |
| 1f5b835 | Taylor Fahlman | Added mutex locks/unlocks to plato |
| 0773ca1 | Taylor Fahlman | Changed mutex pairs to int flags, and initiliazed mutexs |
| b2297cd | Taylor Fahlman | Restructed to use infinite loop |
| 0b270f9 | Taylor Fahlman | Added flag checking for forks |
| ffa8a6d | Taylor Fahlman | Added pthread condition signals |
| 51d58b7 | Taylor Fahlman | Added plato thread |
| f76dbb7 | Taylor Fahlman | Added function pointer for proper pthread creation |
| 3426649 | Taylor Fahlman | Added infinite for loop |
| 5e17f74 | Taylor Fahlman | Added random num generator, eat, and think functions |
| b48fefd | Taylor Fahlman | Added mt19937.h |
| ebf0d4a | Taylor Fahlman | Cleaned up after signal catch |