BBB anti priority inversion exercises

Consult the Linux on-line manual
http://man7.org/linux/man-pages/dir_section_3.html
during this exercise for further explanations of the pthread library functions to be used.

The emulator template code for this exercise builds a priority inversion scenario making 3 threads: one low, one medium and one high priority. After some seconds the low one grabs the mutex and hold it for some seconds before it releases it again. The two other threads sleeps for some seconds before they start working. The high one try to grab the mutex after some seconds. In order to watch what happens download the emulator template code to your BB compile and execute it. Hopefully you will see the priority inversion on the screen. Notice that we in this way draw the schedule vertically instead of the usual horizontal way.
Each output line should last approximately one second. In the main function you find a couple of uncommented lines for adjusting the CPU-burn loop, so that each output line takes 1 second.

Priority inheritance protocol

A mutex attribute variabel of the type pthread_mutexattr_t is already defined.
Call the function pthread_mutexattr_init for initializing it.
Then call the function pthread_mutexattr_setprotocol for setting the mutex up for priority inheritance.
Finally, the mutex is initialized using this mutex attribute variable.
Try it out and check the output for the desired behaviour

Priority ceiling protocol

A mutex attribute variabel of the type pthread_mutexattr_t is already defined.
Call the function pthread_mutexattr_init for initializing it.
Then call the function pthread_mutexattr_setprotocol for setting the mutex up for priority ceiling protocol. Set the mutex priority ceiling using the function pthread_mutexattr_setprioceiling.
Finally, the mutex is initialized using this mutex attribute variable.
Try it out and check the output for the desired behavior.