Lab 2 – mythreads

This assignment is to write a user-level threads package called "mythreads." In addition, you will write a solution to the dining philosophers problem using this library. The library and program you will write have these requirements.

- You must create your own thread stacks and jump between them using setjmp/longjmp or setcontext/makecontext, etc.
- The requirements for the interface are:
  - **mt_init();**
  - **mt_create**(void (*func)(void *), void *arg);
  - **mt_join**(void *mt);
  - **mt_exit();**
  - **mt_sleep**(int seconds);
  - **mt_yield();**
  - **mt_self();**
  - **mt_joinall();**
  - **mt_kill**(void *mt);
  - **typedef void *mt_sem;**
  - **mt_sem_create(int initial_value);**
  - **mt_sem_up(my_sem sem);**
  - **mt_sem_down(my_sem sem);**
  - **mt_sem_destroy(my_sem sem);**
  - **mt_sem_getval(my_sem sem);**

- For the dining philosophers problem, you will use the dphil.h and dphil_skeleton.c files and implement the functions **initialize_v** (to create semaphores, etc) and the functions **pickup** and **putdown** that use these semaphores to ensure a correct solution. The prototypes for these functions are given in dphil.h

Test (and develop if you like) on Linux. Relevant files and a working version of the libmt.a library can be found in ~swany/lab2 (cd directly into the directory. Do not be surprised if you cannot "ls ~swany".)