Threads and parallelism

In shared memory multiprocessor architectures, such as SMPs, threads can be used to implement parallelism. Historically, hardware vendors have implemented their own proprietary versions of threads, making portability a concern for software developers.

Recently, a standardized C language threads programming interface has been specified by the IEEE POSIX 1003.1c standard. Implementations that adhere to this standard are referred to as POSIX threads, or Pthreads.

Pthreads come in a package called **pthreads** for UNIX−based systems. Win32 versions exist but seem incomplete ((click here for details).

When you use pthreads you will need to specify that threads are used by giving a compiler flage, such as:

- gcc -pthread code.c

- gcc code.c -lthreads

- or similar.

Some references:

- Tutorial from LLNatLab: all the details, lots of colours and code.

- YoLinux tutorial: lots of informative code.

- Another tutorial

- LUPG tutorial, long

These references contain working code written in **C**.

You may also check the notes for lab #6.