# 1 Ex1

**What is POSIX** The Portable Operating System Interface (POSIX) is a family of standards specified by the IEEE Computer Society for maintaining compatibility between operating systems. POSIX defines the application programming interface (API), along with command line shells and utility interfaces, for software compatibility with variants of Unix and other operating systems.

**Why do they exist?** The POSIX standard is intended to achieve software portability at the source code level. In other words, a program written for a POSIX-compliant operating system should be compiled and executed on any other POSIX operating system (even from another companies).

**What kind of things are included?** Process Creation and Control, Signals, Floating Point Exceptions, Segmentation / Memory Violations, Illegal Instructions, Bus Errors Timers, File and Directory Operations Pipes, C Library (Standard C), I/O Port Interface and Control, Process Triggers,Priority Scheduling, Real-Time Signals, Clocks and Timers,Semaphores,Message Passing,Shared Memory,Asynchronous and Synchronous I/O,Memory Locking Interface and so on.

# 2 Ex2

**1.** To let other threads to use the CPU. A programmer can decide whether a thread need the CPU anymore, if not, he/she can decide to hang a threat to let another needy threat to use the CPU.

**2.** The biggest advantage is that switching thread does not require to trap the kernel, but if a thread is blocked, the whole process containing this thread is blocked, too.

**3.** No. Because when a singel-thread process is waiting for I/O, it is blocked and cannot be forked.

**4.** It need to change its API to Win32 one, which wastes time.