GETTING INFO ABOUT PROCESSES...
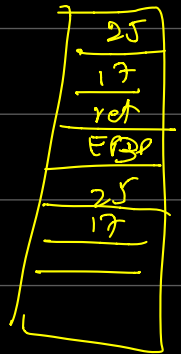
/proc

→ "virtual filesystem"

cat   /proc/cpuinfo
           meminfo
           interrupts

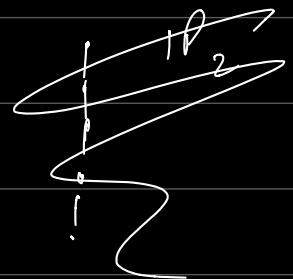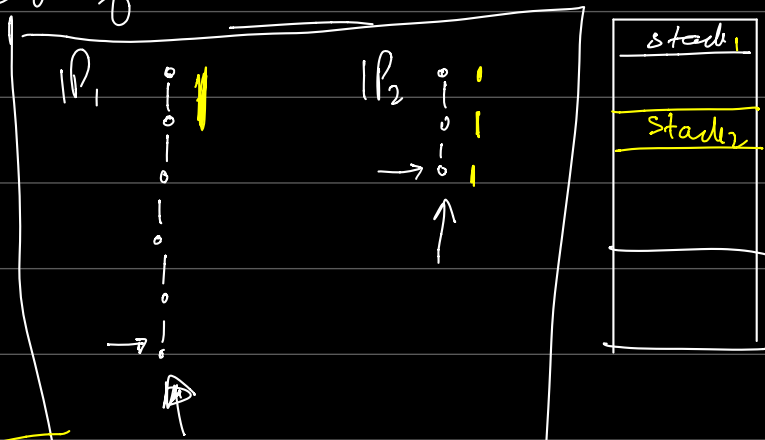ls -l   /proc/1

cat   /proc/1/maps
              status

/*/ status

x ————————— x

" Light weight processes".

" Thread of   Execution"

Operating Systems Design

5. Threads

Paul Krzyzanowski

pxk@cs.rutgers.edu

Thread of execution

Single sequence of instructions
- Pointed to by the program counter (PC)
- Executed by the processor

Conventional programming model & OS structure:
- Single threaded
- One process = one thread

Multi-threaded model

A thread is a subset of a process:
- A process contains one or more kernel threads

Share memory and open files
- BUT:
  separate program counter, registers, and stack
- Shared memory includes the heap and global/static data
- No memory protection among the threads

Preemptive multitasking:
- Operating system preempts & schedules threads

stack 1
stack 2
heap
data+bss
text

concurrent : actually in parallel
simultaneous : illusion of concurrency