1. In your own words, describe what `ls proc/` is. Why is it here? What if you just type `/proc`?

ls is list the files within a directory

proc is a process virtual file system containing the info about process and system, which is mapped to /proc and started at boot time; it includes a bunch of numbered directories which is the pid of processes containing the individual command, consisting the info about this command; for the system info within proc, it has meminfo(memory info), cpuinfo(cpu info) and the filesystems. specific directories are listed below

1. **/proc/cmdline** – Kernel command line information.
2. **/proc/console** – Information about current consoles including tty.
3. **/proc/devices** – Device drivers currently configured for the running kernel.
4. **/proc/dma** – Info about current DMA channels.
5. **/proc/fb** – Framebuffer devices.
6. **/proc/filesystem**s – Current filesystems supported by the kernel.
7. **/proc/iomem** – Current system memory map for devices.
8. **/proc/ioports** – Registered port regions for input output communication with device.
9. **/proc/loadavg** – System load average.
10. **/proc/locks** – Files currently locked by kernel.
11. **/proc/meminfo** – Info about system memory (see above example).
12. **/proc/misc** – Miscellaneous drivers registered for miscellaneous major device.
13. **/proc/modules** – Currently loaded kernel modules.
14. **/proc/mounts** – List of all mounts in use by system.
15. **/proc/partitions** – Detailed info about partitions available to the system.
16. **/proc/pci** – Information about every PCI device.
17. **/proc/stat** – Record or various statistics kept from last reboot.
18. **/proc/swap** – Information about swap space.
19. **/proc/uptime** – Uptime information (in seconds).
20. **/proc/version** – Kernel version, gcc version, and Linux distribution installed.

2. In your own words, describe the top command.

top(table of processes) shows the current processes running in the system, summary system info(CPU, memory usage) and list the process/thread managed by Kernel; and allow interactive display info; basically a task manager; Details info about process is listed below:

- **PID:** Shows task's unique process id.
- **PR:** Stands for priority of the task.
- **SHR:** Represents the amount of shared memory used by a task.
- **VIRT:** Total virtual memory used by the task.
- **USER:** User name of owner of task.
- **%CPU:** Represents the CPU usage.
- **TIME+:** CPU Time, the same as 'TIME', but reflecting more granularity through hundredths of a second.
- **SHR:** Represents the Shared Memory size (kb) used by a task.
- **NI:** Represents a Nice Value of task. A Negative nice value implies higher priority, and positive Nice value means lower priority.
- **%MEM:** Shows the Memory usage of task.

3. In your own words, describe the `ps` command.

ps(Process Status) list current running process and their PID with other related info and options to limit the output format/info, it reads from /proc virtual file system's virtual files.

4. In your own words, describe the kill command.

kill can terminate specified process given pid number/sig prefix/without sig prefix, it sends a signal to a process and terminate it; default term signal is sent without user specified number; detail about sig is listed below:

kill -L : This command is used to list available signals in a table format.
kill -s : To show how to send signal to processes.
kill pid : To show how to use a *PID* with the *kill* command.