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| **Operating Systems Lab** |
| Lab 1 |

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# Lab 1: Introduction

## Question 1: /proc filesystem.

### Processor and Core:

#### Processor:

A central processing unit (CPU) is the electronic circuitry within a computer that carries out the instructions of a computer program by performing the basic arithmetic, logical, control and input/output (I/O) operations specified by the instructions. Traditionally, the term "CPU" refers to a processor, more specifically to its processing unit and control unit (CU), distinguishing these core elements of a computer from external components such as main memory and I/O circuitry.

#### Core:

A processor core (or simply “core”) is an individual processor within a CPU. Processing performance of computers is increased by using multi-core processors, which essentially is plugging two or more individual processors (called cores in this sense) into one integrated circuit.

### How many cores?

There are 2 cores per processor/CPU.

### How many processors?

There are 2 processors, 0 and 1.

### Frequency of each Processor.

Frequency of each processor is **2904.004 MHZ.**

### Total Physical Memory.

The total available memory is **4803296 kB**. It was found using command, **cat/proc/meminfo**.

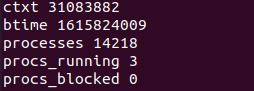
### Free Memory.

The freed memory is **1217500 kB**. It was found using command, **cat/proc/meminfo**.



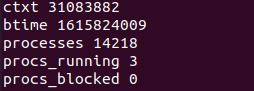
### Number of Forks since boot.

The number of processes that have been created since the last bootup is, processes **14218**. It was found using the command, **cat /proc/stat.**



### Context Switches since bootup.

The number of context switches that the system has performed, since the bootup are, **ctxt 31668818.** It was found using the command, **cat /proc/stat.**



## Question 2:



### PID:

The PID of the process running the cpu command is **14251**.

### CPU and Memory usage.

This process is using **99.7% of CPU** and **0.0% of memory**.

### Current State of Process.

The current state of the process is **Running**.

## Question 3:

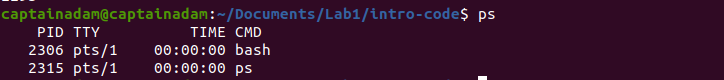
### PID:

The PID of process running cpu-print command is **2293**.



### PID of Shell and ancestors.

PID of Shell process is **2306**.



Ancestral tree is



PID of cpu-print:2293

PID of bash:2306

PID of gnome-terminal: 2158

PID of systemd: 1248

## GitHub Link:

<https://github.com/MuhammadIrfan92/Operating_Systems_lab.git>