

Write a CPU bound C program and a I/O bound C program and observe the effect of their CPU share using the top command and its variants.

```
26297 prime number
26298 prime number
```

```
top - 23:31:02 up 8 min, 1 user, load average: 0.48, 0.50, 0.38
Tasks: 200 total, 4 running, 196 sleeping, 0 stopped, 0 zombie
%Cpu(s): 41.3 us, 10.0 sy, 0.0 ni, 48.6 id, 0.0 wa, 0.0 hi, 0.1 si, 0.0 st
MiB Mem : 3311.6 total, 1350.8 free, 772.2 used, 1188.5 buff/cache
MiB Swap: 3210.0 total, 3210.0 free, 0.0 used. 2335.7 avail Mem
```

USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
ayushma+	20	0	2772	948	856	R	99.3	0.0	0:09.89	a.out
ayushma+	20	0	4804520	345472	134428	S	36.2	10.2	0:30.66	gnome-shell

CPU bound C program

```
= 120Result = 280Result = 440Result = 600Result = 90Result = 202Result = 314Res
ult = 426Result = 100Result = 228Result = 356Result = 484Result = 110Result = 25
4Result = 398Result = 542Result = 120Result = 280Result = 440Result = 600Result
= 90Result = 202Result = 314Result = 426Result = 100Result = 228Result = 356Resu
lt = 484Result = 110Result = 254Result = 398Result = 542Result = 120Result = 280
Result = 440Result = 600Result = 90Result = 202Result = 314Result = 426Result =
100Result = 228Result = 356Result = 484Result = 110Result = 254Result = 398Resul
t = 542Result = 120Result = 280Result = 440Result = 600Result = 90Result = 202Re
sult = 314Result = 426Result = 100Result = 228Result = 356Result = 484Result = 1
```

```
top - 23:43:06 up 20 min, 1 user, load average: 0.17, 0.22, 0.34
Tasks: 201 total, 2 running, 199 sleeping, 0 stopped, 0 zombie
%Cpu(s): 32.2 us, 10.3 sy, 0.0 ni, 57.2 id, 0.0 wa, 0.0 hi, 0.3 si, 0.0 st
MiB Mem : 3311.6 total, 1313.3 free, 805.0 used, 1193.2 buff/cache
MiB Swap: 3210.0 total, 3210.0 free, 0.0 used. 2302.9 avail Mem
```

USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
ayushma+	20	0	645368	60752	41784	R	85.7	1.8	0:45.47	gnome-terminal-
ayushma+	20	0	2772	944	856	S	21.3	0.0	0:01.69	a.out

I/O bound C program

ayushmaan@ASJ:~/Music/7\$./a.out

Enter any number:50

Enter any number :60

50

Current local time and date: Wed Nov 16 23:51:06 2022

Enter any number:█

```
top - 23:51:38 up 28 min,  1 user,  load average: 0.16, 0.11, 0.24
Tasks: 203 total,   2 running, 201 sleeping,   0 stopped,   0 zombie
%Cpu(s): 23.7 us, 29.7 sy,   0.0 ni, 45.9 id,   0.5 wa,   0.0 hi,   0.2 si,   0.0 st
MiB Mem :  3311.6 total,  1310.5 free,   806.7 used,  1194.4 buff/cache
MiB Swap:  3210.0 total,  3210.0 free,    0.0 used.  2301.1 avail Mem
```

USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
ayushma+	20	0	644944	60596	41868	S	63.1	1.8	1:16.54	gnome-terminal-
ayushma+	20	0	2772	1164	1076	R	56.8	0.0	0:02.25	a.out