

Make

sudo insmod lab7.ko

sudo ./lab7_user

```
root@mycroft-VMware-Virtual-Platform:/home/mycroft/hw7# ./lab7_user
=== Kernel Output ===
elapsed: 0 ms
ppid: 4957

Kernel elapsed: 0 ms
Kernel ppid: 4957
User measured elapsed: 0 ms
User getppid(): 4957
```

In this assignment, I implemented a Linux kernel module that registers as a misc character device `/dev/lab7dev` and provides `open()` and `read()` operations. The `open()` function records the current jiffies value, and the first `read()` call returns a C-string containing the elapsed time in milliseconds (computed from jiffies) and the parent PID obtained from `current->parent->pid`. A user-space program was written to open the device, read the kernel-generated data, measure its own elapsed time using `gettimeofday()`, and compare the kernel-reported parent PID with the result of `getppid()`. The outputs match correctly, demonstrating proper timing measurement, parent PID retrieval, and user - kernel communication via a misc character device.