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I created a struct to represent a linked list node, which stores data on each process. I used the kernel linked list to store the processes. I made sure to use spin\_lock\_irqsave() and spin\_lock\_irqrestore() to protect data against corruption anytime I did linked list operations.

I defined a ‘proc\_ops’ structure to link the procfileRead and procFileWrite functions so they would be called when reading from and writing to the proc file. procfileRead reads process data from the linked list and copies it into a user-space buffer. procFileWrite gets process data from a user-space buffer and writes it into the linked list.

I implemented a timer handler function, which resets the timer every 5 seconds, and calls the work queue handler, which calls get\_cpu\_time() to update the cpu times of each process, and deallocates processes that are terminated.

I initialized the proc entries, linked list, and timer in the kmlab init function, and made sure to deallocate everything in the kmlab exit function, to ensure there are no memory leaks.

A computer screen shot of a computer program

Description automatically generated

A close up of a number

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