CS 61 Problem Set 3

Fill out both this file and AUTHORS.md before submitting. We grade anonymously, so put all personally identifying information, including collaborators, in AUTHORS.md.

Grading notes (if any)

Extra credit attempted (if any)

- Copy-on-write fork
- `kill` system call
- `sleep` system call

`p-sleepkill` test file: parent forks a child, sleeps for a bit, and then kills the child once it runs out of memory. It can be accessed by pressing the `s` key after `make run`.

Additional extra credit in this commit:

- `mmap` system call: extended version of `sys_page_alloc` which supports multi-page allocations and page protections for newly allocated pages
- `munmap` system call: removes mapping for a given region
- replaced implementation of `sys_page_alloc` with `sys_mmap`

`p-map` test file: parent forks 3 children, then each process iteratively calls `sys_mmap(nullptr, PAGESIZE*rand_factor, PTE_PWU)` to get page mappings in chunks (of pseudo-random size). `sys_mmap(heap_top, PAGESIZE, PTE_PWU) == nullptr)` is also called to test `mmap` starting at specified address. After they run of memory, the processes call `sys_munmap(heap_bottom, heap_top - heap_bottom)` to unmap all heap memory, then do nothing forever. It can be run by pressing the