

Threading Library

We have implemented a threading library with the functions `thread_create()`, which accepts a function pointer and an argument, and `thread_join()`, in which the calling thread will wait on one of its children, or return -1 if it has none. We also created a user-level spinlock for threads.

Our design was to simply create a new process that shares address space, current working directory, and file descriptors with its parent. This meant that much of the code was similar to `fork()`, except that the stack and EIP are set according to the arguments passed. We struggled to find a way to pass page-sized and page-aligned memory blocks to the syscall while ensuring that the same pointer would be returned. Our solution was to pass a 2 page block of memory, in order to guarantee that a page aligned block would be contained in it, find the upper section of this block, and store the original pointer.