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EECS678 Lab9 Report
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1. There are two special signals (KILL and STOP) which are not handled by the process they are sent to. When a KILL or STOP signal is generated, the operating system itself handles this signal and kills or stops the appropriate process. Considering what you learned in today's lab, speculate as to why the system designers chose to include signals which are handled solely by the operating system.

Even though most signals could allow user processes to define signal handlers to override the signal's default disposition, the signal KILL and STOP are still the exceptions because they are caught by the operating system. In addition, a signal is a kind of software interrupt which communicates information to a process about the operating system or the state of other processes.

2. What benefit do we gain from using the pause system call as opposed to an infinite while loop?

The pause system call can cause the calling process to wait until any signal is received. In other words, it can invoke process to sleep until a signal is received that either terminates it or causes it to call a signal-catching function. But infinite while loop is too expensive to waste the algorithm efficiency.

3. Why do we mask other signals while inside the signal handler?

During execution time of the signal handler, we need to mask or block a set of signals. Because we want the signal handler to finish without being interrupted by another signal when we invoke a signal handler. In order to avoid corrupt data, we have to block signals when the handler starts unless it has been finished. By implementation, if a signal invokes a handler function, the signal will be blocked directly when the handler is executing.

4. When we implement the time out, we do not mask the SIGALRM signal. Why?

In order to arrange a SIGALRM signal to be delivered to the calling process in seconds, we can invoke alarm system call. But we do not mask the SIGALRM when initializing the SIGINT signal handler because we need to use SIGALRM, the SIGALRM will be handled when the timeout occurs.