Faculty of Engineering and Applied Science

SOFE 3950 Operating Systems

Tutorial Activity 7

Group Member 1

Name: Daniel Nucci
Student ID: 100655384

Group Member 2

Name: Avdon Racki
Student ID: 100661246

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Conceptual Questions

1. A signal is an interrupt that the system sends to a process. Their purpose is mostly for error / exceptional circumstance / event reporting from the system to other locations. In C, there are many types of signals for a variety of events, for a variety of purposes.
2.
    a. SIGINT, standing for signal interrupt, is a signal that interrupts the current process from the keyboard.
    b. SIGSTP, standing for signal stop, is a signal sent to the process that pauses it in its current state.
    c. SIGCONT, standing for signal continue, is a signal sent to a process that resumes it.

    These signals are often used for job control and process management.

3. The kill() function sends a signal to a process to terminate it specified by its pid, and the signal is chosen from <signal.h>. waitpid() obtains the status information of the callers child processes identified by a pid.k
4. A linked list is a group of cells connected together by each others id's one at a time. The first node is linked to the first cell's head and then the tail is connected to the second cell etc. FIFO is a property of the queue data structure, standing for First In First Out, or in other words, the first item added to a queue is the first item to get addressed in the data. Linked lists need to be able to add, remove, and identify cells.
5. The structure of the linked list is what was described above but in the C language. The Insertion operation is conducted by first locating the position in the list and then allocating the tail of the previous node to the node you wish to add and the head of the node that came after the index to the current node. To delete a node from a linked list you must identify the node first and change the tail of the previous to the index of the node after the selected node, then the head of the node after the selected node to the node previous node to the selected node and then remove the selected node.

Application Questions

See attached code.