Inter-Process Communications Test Interface Requirements

CSE325, due March 22, 2012

For your Inter-Process Communications (IPC) manager, I am providing the specifications of a test interface. Your project should be able to accept commands, as defined in this document, as a way to exercise your IPC manager. As other managers are added, additional commands may be introduced to enhance testing of the new functionality.

The commands listed are not necessarily all the commands you might need to test your design. I have only designed commands to test specific functionality that is required for the assignment. If you have other internal functionality, you might have to add new commands to be able to fully test your implementation.

Initialization Commands

1. init_IPC manager1 manager2 [manager3, …]

   The directive initializes your IPC manager with message queues setup for each manager listed on the commandline. The queues will be initialized as empty.

Status Commands

1. LIST [queuename]

   The directive "list" has arguments of optionally a queue name. The command will list the elements of the named queue. With no arguments, it will list the elements of all queues, separated by queue with the name of the queue listed.

Action Commands

1. Send *source destination message*

   This command tells the IPC manager that the *source* manager wants to send a message to the *destination* manager. Source and destination should be valid managers in the system, such as process, memory, filesystem, etc. It will enqueue the message in the appropriate message queue.

2. Retrieve *destination*

   This command tells the IPC manager to return the next message for *destination*. It will dequeue the message and display the contents.

Expected use of this test interface will be like:

- Multiple "Send" commands to put messages in the queues

- An occasional “list” to see what is where
- Specific “retrieve” commands to consume messages.