

Lab 5 Answers

Part 3

I set up my test cases to test both normal situations and edge situations per process, as well as running multiple processes simultaneously. In these tests, not only did I verify that every message was fully sent and received properly, but also the order of the messages. Since each queue is a FIFO queue order is important to check as well. If a process ends that has processes still in its send queue, each process' variables for the message send should be cleared to their default state and then the process should be made ready. I believe this should be the implementation since receive is not explicitly called for these messages the program then and terminated it's an assumption that the program did not need the other messages.

Part 4

My design allows XINU to implement asynchronous IPC with a callback function by checking after a process is context switched in if it has a callback function and executing it. This allows the callback to be executed in user mode. This ability to execute in user mode is also why my design is compatible with kernels that support isolation/protection.