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I pledge my honor that I have abided by the Stevens Honor System.

Analysis of Experimentation

By analyzing the data gathered from 20 test cases, with 3 trials each, we have noticed some key differences between two scheduling algorithms: First Come First Served (FCFS) and Round Robin (RR). In nearly every test case, FCFS was observed as the better algorithm; In some cases, the total runtime for RR was nearly 6 times longer than FCFS. Additionally, FCFS almost always produced a better throughput, wait time, and turnaround time than RR. When there is a heavy imbalance between the number producers and consumers, there is no significant difference in runtime, turnaround time, wait time, and throughput when using the FCFS algorithm. However, RR is much more efficient when there are more consumers than producers, as opposed to having more producers than consumers. Another thing to note is that RR’s efficiency is essentially equal to FCFS when a high quantum is used.

From this data and the analysis above, we can conclude that FCFS is more efficient overall than RR. However, RR would be more efficient in cases where large processes are executed early, as shorter processes would have to wait for the longer ones if FCFS was used. This is not observed in our data, because none of the products have a long enough lifespan to produce a significant delay in the FCFS algorithm.