# Assignment 10

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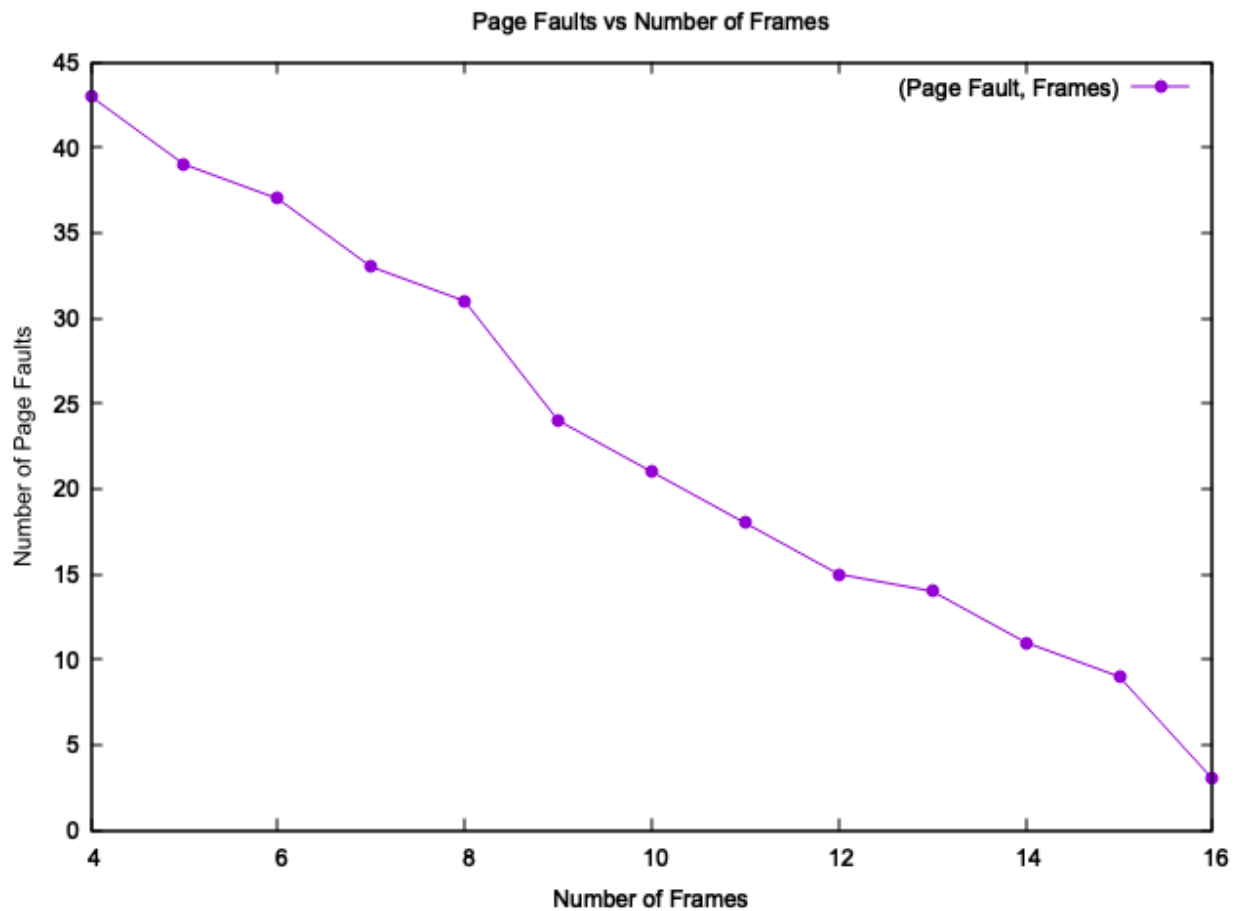
## Ans 1.



Figure 1: Producer

We can observe a decreasing trend in page faults as the number of frames increases. This is due to the fact that more frames allow for better caching and fewer page replacements as now we can have more pages stored for same length of the page trace.

# Ans 2.

## a)

| Process | Burst Time | Priority | Arrival Time |
|---------|-----------|----------|--------------|
| P1 | 7 | 4 | 0 |
| P2 | 11 | 3 | 1 |
| P3 | 4 | 1 | 1 |
| P4 | 16 | 2 | 4 |
| P5 | 6 | 1 | 5 |

Table 1: Process Information

**Shortest Remaining Time First:**

| $P_1$ | $P_3$ | $P_5$ | $P_1$ | $P_2$ | $P_4$ |
|---|---|---|---|---|---|
| 0 1 | 5 | 11 | 17 | 28 | 44 |

**Round Robin (Quantum = 2):**

| $P_1$ | $P_2$ | $P_3$ | $P_1$ | $P_4$ | $P_2$ | $P_5$ | $P_3$ | $P_1$ | $P_4$ | $P_2$ | $P_5$ | $P_1$ | $P_4$ | $P_2$ | $P_5$ | $P_4$ | $P_2$ | $P_4$ | $P_2$ | $P_4$ | $P_4$ | $P_4$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|

0   2   4   6   8   10   12   14   16   18   20   22   24   25   27   29   31   33   35   37   38   40   42   44

## b)

**Turn Around Time for all processes (msecs):**

| Process | SRTF | Round Robin |
|---------|------|-------------|
| P1 | 17 | 25 |
| P2 | 27 | 37 |
| P3 | 4 | 15 |
| P4 | 40 | 40 |
| P5 | 6 | 26 |

Table 2: Turn-Around Time (msecs)

**c)**

**Waiting Time for all processes (msecs)**:

| Process | SRTF | Round Robin |
|---------|------|-------------|
| P1 | 10 | 18 |
| P2 | 16 | 26 |
| P3 | 0 | 11 |
| P4 | 24 | 24 |
| P5 | 0 | 20 |

Table 3: Waiting Time (msecs)

**d)**

**Average Waiting Time (msecs)**:

| SRTF | Round Robin |
|------|-------------|
| 10 | 19.8 |

Table 4: Average Waiting Time (msecs)

**SRTF (Shortest Remaining Time First) takes less average waiting time across all processes.**