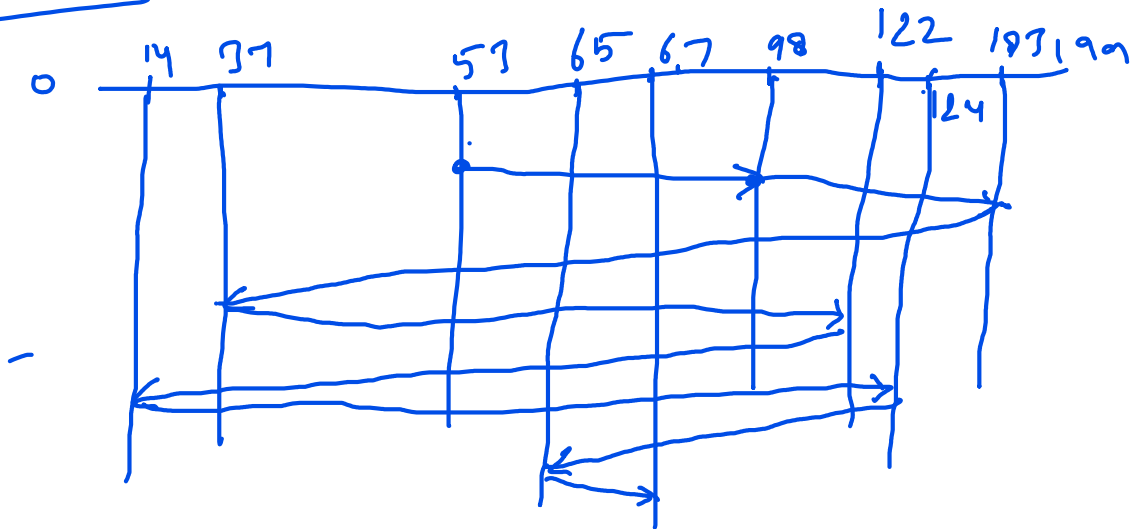


# Disk scheduling

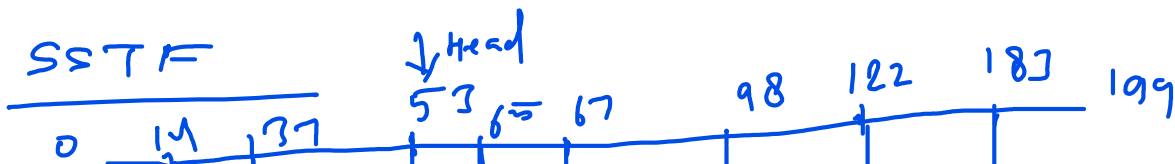
head = 53

Queue - 98, 183, 37, 122, 14, 124, 65, 67

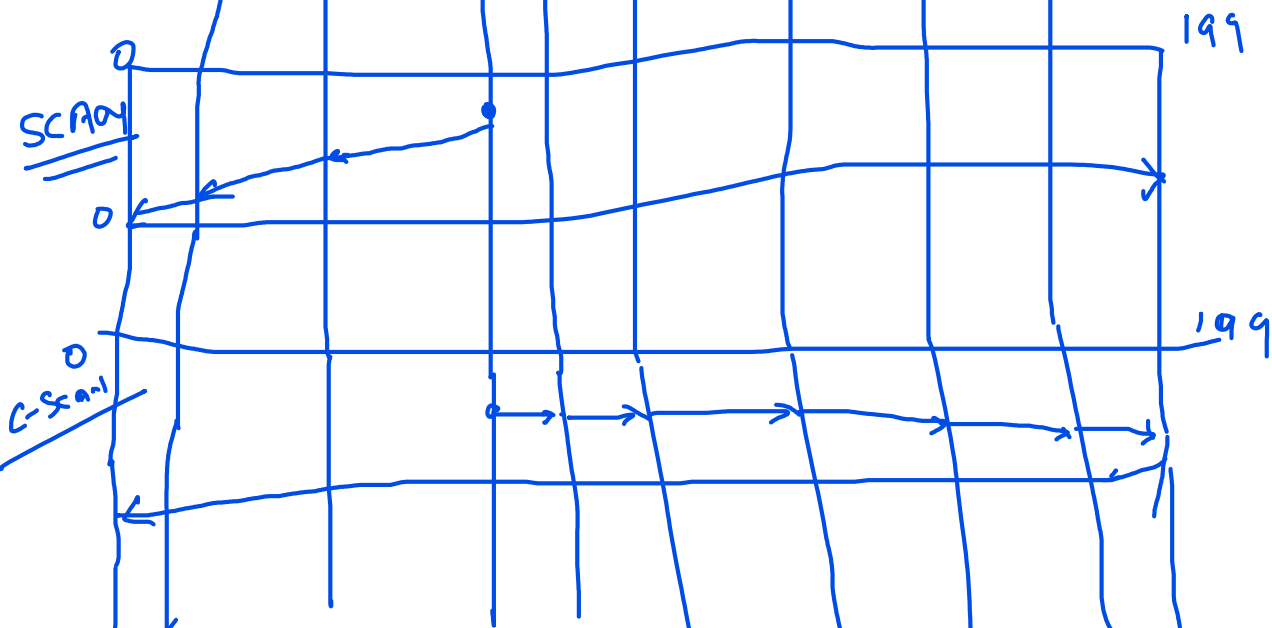
FCFS-



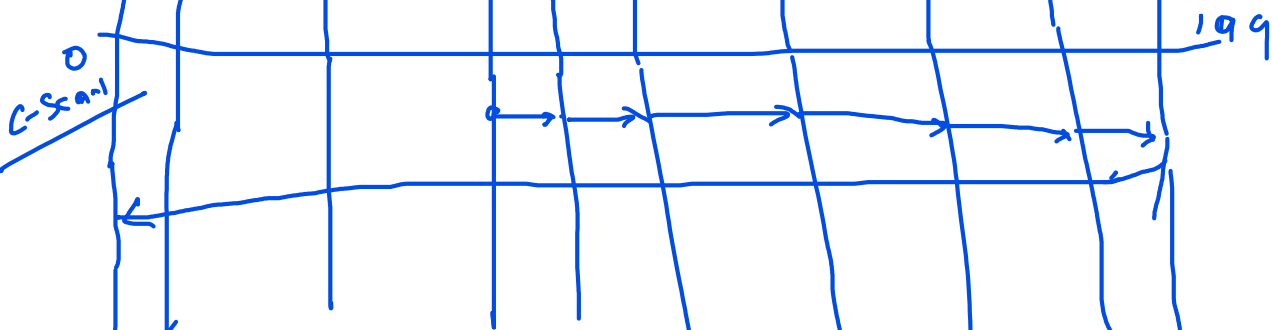
SSTF

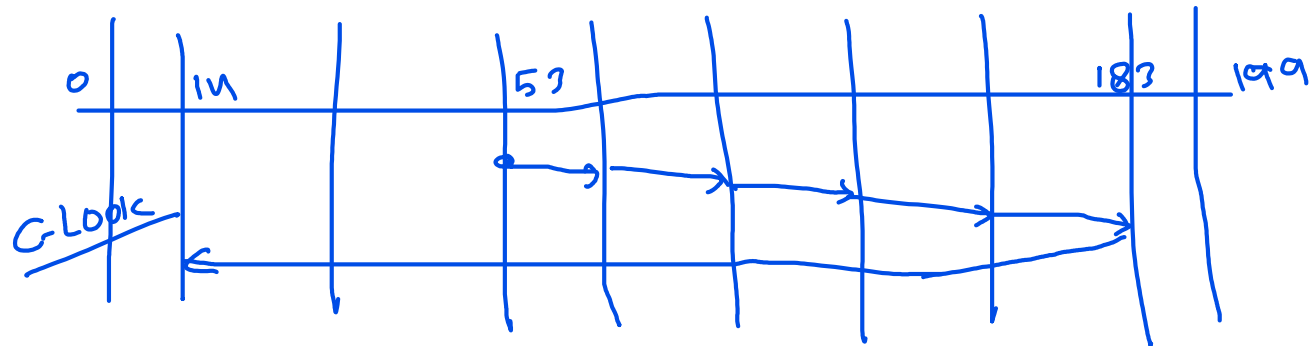


SCAN



C-SCAN





## Deadlock

| P              | Allocation | max   | Avail | Need = max - Al |
|----------------|------------|-------|-------|-----------------|
| P <sub>0</sub> | 0 1 0      | 7 5 3 | 3 3 2 | 7 4 3           |
| P <sub>1</sub> | 2 0 0      | 3 2 2 |       | 1 2 2           |
| P <sub>2</sub> | 3 0 2      | 9 0 2 |       | 6 0 0           |
| P <sub>3</sub> | 2 1 1      | 2 2 2 |       | 0 1 1           |
| P <sub>4</sub> | 0 0 2      | 4 3 3 |       | 4 3 1           |

Safe Seq  $\Rightarrow \langle P_1, P_3, P_4, P_2, P_0 \rangle$

$$\begin{array}{r}
 332 \quad \text{Avail - Need} \\
 - 122 \\
 \hline
 210 \\
 + 322 \quad \text{max} \\
 \hline
 532 \quad \text{Avail} \\
 - 011 \\
 \hline
 521 \\
 + 222 \\
 \hline
 743
 \end{array}
 \quad \left. \begin{array}{l} P_1 \\ P_3 \end{array} \right\}$$

$$\begin{array}{r}
 743 \\
 - 431 \\
 \hline
 312 \\
 + 433 \\
 \hline
 745 \\
 - 600 \\
 \hline
 145 \\
 + 902 \\
 \hline
 1047
 \end{array}
 \quad \left. \begin{array}{l} P_4 \\ P_2 \end{array} \right\}$$