

Page replacement algorithms are used to determine which pages should be removed from memory (swapped out) when there is not enough space to hold all of the pages needed by the running processes.

Fifo : The First-In-First-Out (FIFO) page replacement algorithm works by removing the oldest page in memory first. When a page fault occurs, the operating system checks the page table to determine which page was loaded into memory first. The page that has been in memory for the longest time is then swapped out to the hard disk, making room for the new page.

Beladys anomaly:

In the case of LRU and optimal page replacement algorithms, it is seen that the number of page faults will be reduced if we increase the number of frames. However, Belady found that, In FIFO page replacement algorithm, the number of page faults will get increased with the increment in number of frames.

This is the strange behavior shown by FIFO algorithm in some of the cases. This is an Anomaly called as Belady' sAnoma ly.

LRU: The Least Recently Used (LRU) page replacement algorithm works by removing the page that has not been used for the longest time. This algorithm assumes that pages

that have not been accessed recently are less likely to be used in the near future, and therefore, it removes the least recently used page to make room for the new page.

MRU: The Most Recently Used (MRU) page replacement algorithm works in the opposite way to the LRU algorithm. Instead of removing the least recently used page, the MRU algorithm removes the most recently used page when a page fault occurs. The idea behind MRU is that pages that were recently accessed are more likely to be accessed again in the near future, and therefore, they should be kept in memory.

Optimal : The Optimal page replacement algorithm is an idealized algorithm that selects the page that will not be used for the longest time in the future for replacement. In other words, it looks ahead in time and determines which page will be accessed furthest into the future, and replaces that page.

The Optimal algorithm is considered the best possible page replacement algorithm because it results in the lowest number of page faults.