**Group Project 4: CPU Scheduler**

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Group Project 5: Page Replacement

CECS326– Operating Systems

The program is designed to manage memory pages for a system that uses virtual memory, where pages are loaded into a limited number of frames. When the memory is full, the program replaces pages according to the selected page replacement algorithm. In this report, we will discuss the design and implementation of the program, as well as demonstrate the outputs for different frame sizes.

Code include: input phase, page replacement algorithms, output phase and calculation of page faults.

We used array memory[] to store the current state of memory frames, initialized to -1 to represent empty frames. isPageInMemory()to checks whether a given page is already present in memory. FIFO maintains a pointer front that indicates the oldest page in memory, which will be replaced when a new page needs to be loaded. LRU uses a usage[] array to track the last usage time of each page in memory. The page with the smallest usage time is replaced.

#### **Example Outputs of the Program**

* Page Request Sequence: [7, 0, 1, 2, 0, 3, 0, 4]
* Frame Sizes: 2, 4

Contribution:

| FIFO (First-In, First-Out) part | Nhi |
| --- | --- |
| Print, frame size functions part | Nhi |
| Main part | An |
| LRU (Least Recently Used) part | An |
| Readme | Nhi |
| Report | Nhi |
| Video | An |
| Submit + Organize | An |

Nhi: 100%

An: 100%