

LRU:

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#include <stdio.h>
```

```
void lruPageReplacement(int pages[], int n, int frameCount) {
    int frames[frameCount], time[frameCount], pageFaults = 0, counter = 0;
    for (int i = 0; i < frameCount; i++) frames[i] = -1;

    for (int i = 0; i < n; i++) {
        int pageFound = 0, lruIndex = 0;
        for (int j = 0; j < frameCount; j++) {
            if (frames[j] == pages[i]) {
                pageFound = 1;
                time[j] = counter++; break;
            }
        }

        if (!pageFound) {
            for (int j = 1; j < frameCount; j++)
                if (time[j] < time[lruIndex]) lruIndex = j;
            frames[lruIndex] = pages[i];
            time[lruIndex] = counter++; pageFaults++;
        }

        printf("Page %d:\t", pages[i]);
        for (int j = 0; j < frameCount; j++)
            printf("%d\t", frames[j] == -1 ? '-' : frames[j]);
        printf("\n");
    }
    printf("\nTotal page faults: %d\n", pageFaults);
}

int main() {
    int n, frameCount;
    printf("Enter the number of frames: ");
    scanf("%d", &frameCount);
    printf("Enter the number of pages: ");
    scanf("%d", &n);

    int pages[n];
    printf("Enter the page reference string: ");
    for (int i = 0; i < n; i++) scanf("%d", &pages[i]);
    lruPageReplacement(pages, n, frameCount);
    return 0;
}
```

```
Enter the number of frames: 5
Enter the number of pages: 3
Enter the page reference string: 4
2
6
Page 4: 4    45    45    45    45
Page 2: 4    45    2     45    45
Page 6: 6    45    2     45    45

Total page faults: 3
```