LRU PAGING

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#include <stdio.h>
int main() {
    int n, frames, pages[50], temp[10], counter[10];
    int i, j, k, pos, pageFaults = 0, flag1, flag2;

    // Input number of pages
    printf("Enter number of pages: ");
    scanf("%d", &n);

    // Input reference string
    printf("Enter the reference string: ");
    for (i = 0; i < n; i++) {
        scanf("%d", &pages[i]);
    }

    // Input number of frames
    printf("Enter number of frames: ");
    scanf("%d", &frames);

    // Initialize frames
    for (i = 0; i < frames; i++) {
        temp[i] = -1;
        counter[i] = 0;
    }

    printf("\nPage Replacement Process (LRU):\n");

    for (i = 0; i < n; i++) {
        flag1 = flag2 = 0;
```

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// Check if page already in frame
for (j = 0; j < frames; j++) {
    if (temp[j] == pages[i]) {
        counter[j] = i + 1; // update recent use
        flag1 = flag2 = 1;
        break;
    }
}

// If empty frame available
if (flag1 == 0) {
    for (j = 0; j < frames; j++) {
        if (temp[j] == -1) {
            temp[j] = pages[i];
            counter[j] = i + 1;
            pageFaults++;
            flag2 = 1;
            break;
        }
    }
}

// If replacement needed
if (flag2 == 0) {
    int min = counter[0];
    pos = 0;
    for (j = 1; j < frames; j++) {
        if (counter[j] < min) {
            min = counter[j];
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                pos = j;
            }
        }
        temp[pos] = pages[i];
        counter[pos] = i + 1;
        pageFaults++;
    }

    // Print current frame contents
    printf("For %d : ", pages[i]);
    for (k = 0; k < frames; k++) {
        if (temp[k] != -1)
            printf("%d ", temp[k]);
        else
            printf("- ");
    }
    printf("\n");
  }

  printf("\nTotal Page Faults = %d\n", pageFaults);

  return 0;
}
```