#include <stdio.h>

#include <stdbool.h>

#define MAX\_FRAMES 4

#define PAGE\_REQUESTS 20

void fifo(int pages[], int n) {

int frame[MAX\_FRAMES];

int queue[MAX\_FRAMES];

int page\_faults = 0;

int front = 0, rear = -1;

int page\_hits=0;

for (int i = 0; i < MAX\_FRAMES; i++) {

frame[i] = -1;

}

for (int i = 0; i < n; i++) {

int page = pages[i];

bool page\_found = false;

for (int j = 0; j < MAX\_FRAMES; j++) {

if (frame[j] == page) {

page\_found = true;

page\_hits++;

break;

}

}

if (page\_found) {

printf("Page %d: hit\t", page);

} else {

printf("Page %d: fault\t", page);

page\_faults++;

if (rear < MAX\_FRAMES - 1) {

rear++;

frame[rear] = page;

queue[rear] = page;

} else {

frame[front] = page;

front = (front + 1) % MAX\_FRAMES;

}

}

printf("\tCurrent Page Frame: ");

for (int j = 0; j < MAX\_FRAMES; j++) {

if (frame[j] != -1) {

printf("%d ", frame[j]);

}

}

printf("\n");

}

printf("\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\n");

printf("Total Page Faults: %d\n", page\_faults);

printf("Total Page Hits: %d\n", page\_hits);

}

int main() {

int pages[PAGE\_REQUESTS] = {1,2,3,4,2,1,5,6,2,1,2,3,7,6,3,2,1,2,3,6};

int n = sizeof(pages) / sizeof(pages[0]);

fifo(pages, n);

return 0;

}

