

EXP NO: 11B

LRU

DATE:

CODE:

```
#include <stdio.h>

int main() {
    int pages[] = {7, 0, 1, 2, 0, 3, 0, 4, 2, 3}; // Reference String
    int n = 10;                                // Number of pages
    int frames = 3;                             // Number of Frames
    int frame[10], recent[10];                  // recent[] tracks usage
    int pageFaults = 0, time = 0;

    // Initialize all frames as empty (-1)
    for (int i = 0; i < frames; i++) {
        frame[i] = -1;
    }

    printf("Page\tFrames\n");

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

        // Check if page is already present
        for (int j = 0; j < frames; j++) {
            if (frame[j] == pages[i]) {
                found = 1;
                recent[j] = time++; // Update recent time
                break;
            }
        }

        // Page not found (Page Fault)
        if (found == 0) {
            int pos = 0, min = recent[0];

            // Find least recently used page
            for (int j = 1; j < frames; j++) {
                if (recent[j] < min) {
                    min = recent[j];
                    pos = j;
                }
            }
        }
    }
}
```

```

    }

    frame[pos] = pages[i];    // Replace the page
    recent[pos] = time++;    // Update usage time
    pageFaults++;
}

// Display current Frame Status
printf("%d\t", pages[i]);
for (int j = 0; j < frames; j++) {
    if (frame[j] != -1)
        printf("%d ", frame[j]);
    else
        printf("- ");
}
printf("\n");
}

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

return 0;
}

```

OUTPUT:

main.c

Share

Run

```
1 #include <stdio.h>
2
3 int main() {
4     int pages[] = {7, 0, 1, 2, 0, 3, 0, 4, 2, 3}; // Reference String
5     int n = 10; // Number of pages
6     int frames = 3; // Number of Frames
7     int frame[10], recent[10]; // recent[] tracks usage
8     int pageFaults = 0, time = 0;
9
10    // Initialize all frames as empty (-1)
11    for (int i = 0; i < frames; i++) {
12        frame[i] = -1;
13    }
14
15    printf("Page\tFrames\n");
16
17    for (int i = 0; i < n; i++) {
18        int found = 0;
19
20        // Check if page is already present
21        for (int j = 0; j < frames; j++) {
22            if (frame[j] == pages[i]) {
23                found = 1;
24                recent[j] = time++; // Update recent time
25                break;
26            }
27        }
28
29        // Page not found (Page Fault)
30        if (found == 0) {
31            int pos = 0, min = recent[0];
```

Output

Page	Frames
7	- - 7
0	- 0 7
1	- 0 1
2	- 2 1
0	- 2 0
3	- 3 0
0	- 3 0
4	- 4 0
2	- 4 2
3	- 3 2

Total Page Faults = 9

=== Code Execution Successful ===

RESULT :

Thus the program is executed successfully.

