

EXP NO: 11A

FIFO

DATE:

CODE:

```
#include <stdio.h>

#define MAX_PAGES 100
#define MAX_FRAMES 10

int main() {
    int pages[MAX_PAGES], frames[MAX_FRAMES];
    int n, frameSize, pageFaults = 0;
    int front = 0; // For FIFO replacement
    int i, j, k, found;

    // Input size of reference string
    printf("Enter the size of the reference string: ");
    scanf("%d", &n);

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

    // Input frame size
    printf("Enter the page frame size: ");
    scanf("%d", &frameSize);

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

    // Header for display
    printf("\n%-10s%-20s%-15s\n", "Page", "Frames", "Page Fault");
    printf("-----\n");

    // FIFO page replacement
    for (i = 0; i < n; i++) {
        found = 0;
```

```

// Check if page is already in frame
for (j = 0; j < frameSize; j++) {
    if (frames[j] == pages[i]) {
        found = 1;
        break;
    }
}

// Display current page
printf("%-10d", pages[i]);

// If not found, it's a page fault
if (!found) {
    frames[front] = pages[i];
    front = (front + 1) % frameSize;
    pageFaults++;
}

// Display current frame content
for (k = 0; k < frameSize; k++) {
    if (frames[k] != -1)
        printf("%d ", frames[k]);
    else
        printf("- ");
}

// Indicate page fault
if (!found)
    printf("%15s\n", "Yes");
else
    printf("%15s\n", "No");
}

// Total page faults
printf("\nTotal number of page faults: %d\n", pageFaults);

return 0;
}

```

OUTPUT:

```
main.c
1 #include <stdio.h>
2
3 #define MAX_PAGES 100
4 #define MAX_FRAMES 10
5
6 int main() {
7     int pages[MAX_PAGES], frames[MAX_FRAMES];
8     int n, frameSize, pageFaults = 0;
9     int front = 0; // For FIFO replacement
10    int i, j, k, found;
11
12    // Input size of reference string
13    printf("Enter the size of the reference string: ");
14    scanf("%d", &n);
15
16    // Input the reference string
17    printf("Enter the reference string (space-separated page numbers):\n");
18    for (i = 0; i < n; i++) {
19        scanf("%d", &pages[i]);
20    }
21
22    // Input frame size
23    printf("Enter the page frame size: ");
24    scanf("%d", &frameSize);
25
26    // Initialize frames to -1
27    for (i = 0; i < frameSize; i++) {
28        frames[i] = -1;
29    }
30
31    // Header for display
32    printf("\n%-10s%-20s%-15s\n", "Page", "Frames", "Page Fault");
33    printf("-----\n");
34
35    // FIFO page replacement
36    for (i = 0; i < n; i++) {
```

Output

```
Enter the size of the reference string: 20
Enter the reference string (space-separated page numbers):
7 0 1 2 0 3 0 4 2 3 0 3 2 1 2 0 1 7 0 1
Enter the page frame size: 3

Page      Frames      Page Fault
-----
7         7 - -      Yes
0         7 0 -      Yes
1         7 0 1      Yes
2         2 0 1      Yes
0         2 0 1      No
3         2 3 1      Yes
0         2 3 0      Yes
4         4 3 0      Yes
2         4 2 0      Yes
3         4 2 3      Yes
0         0 2 3      Yes
3         0 2 3      No
2         0 2 3      No
1         0 1 3      Yes
2         0 1 2      Yes
0         0 1 2      No
1         0 1 2      No
7         7 1 2      Yes
0         7 0 2      Yes
1         7 0 1      Yes

Total number of page faults: 15

=== Code Execution Successful ===
```

RESULT :

Thus the program is executed successfully.

