

7. Write a C program to illustrate the page replacement method where the current least recently used element is replaced and determine the number of page faults for the following test case

No. of page frames: 3; Page reference sequence 1,2,3,2,1,5,2,1,6,2,5,6,3,1,3,6,1,2,4 and 3.

```
1 //lru page replacement
2
3 int findMin(int time, int *frames, int *pages, int *counter, int *time, int *flag, int *size, int *pages, int *size)
4 {
5     int i, minIndex = time, min = 0;
6
7     for (i = 0; i < size; i++)
8     {
9         if (frames[i] == time)
10             minIndex = i;
11     }
12
13     return minIndex;
14 }
15
16 int main()
17 {
18     int no_of_frames, no_of_pages, frames[10], pages[10], counter = 0, time[10], flag[10], size, i, j, min, pages[10];
19
20     printf("Enter number of frames: ");
21     scanf("%d", &no_of_frames);
22     printf("Enter number of pages: ");
23     scanf("%d", &no_of_pages);
24     printf("Enter reference string: ");
25     for (i = 0; i < no_of_pages; i++)
26     {
27         scanf("%d", &pages[i]);
28     }
29
30     for (i = 0; i < no_of_frames; i++)
31     {
32         frames[i] = -1;
33     }
34
35     for (i = 0; i < no_of_pages; i++)
36     {
37         flag[i] = 0;
38     }
39
40     for (i = 0; i < no_of_frames; i++)
41     {
42         printf("%d ", frames[i]);
43         counter++;
44     }
45     printf("\n");
46
47     for (i = 0; i < no_of_pages; i++)
48     {
49         if (frames[i] == pages[i])
50             flag[i] = 1;
51         else
52             flag[i] = 0;
53     }
54
55     for (i = 0; i < no_of_frames; i++)
56     {
57         printf("%d ", frames[i]);
58         counter++;
59     }
60     printf("\n");
61
62     for (i = 0; i < no_of_pages; i++)
63     {
64         if (flag[i] == 1)
65             continue;
66         else
67             findMin(time, no_of_frames, frames, pages, counter, time, flag, size, pages, size);
68     }
69
70     printf("\n");
71
72     for (i = 0; i < no_of_frames; i++)
73     {
74         printf("%d ", frames[i]);
75     }
76 }
```

C:\Users\hp\Documents\lru page replacement.exe

Enter number of frames: 3

Enter number of pages: 20

Enter reference string: 1 2 3 2 1 5 2 1 6 2 5 6 3 1 3 6 1 2 4 3

1	-1	-1
1	2	-1
1	2	3
1	2	3
1	2	3
1	2	5
1	2	5
1	2	5
1	2	6
1	2	6
5	2	6
5	2	6
5	3	6
1	3	6
1	3	6
1	3	6
1	3	6
1	2	6
1	2	4
3	2	4

Total Page Faults = 11

Process exited after 39.25 seconds with return value 0

Press any key to continue . . .