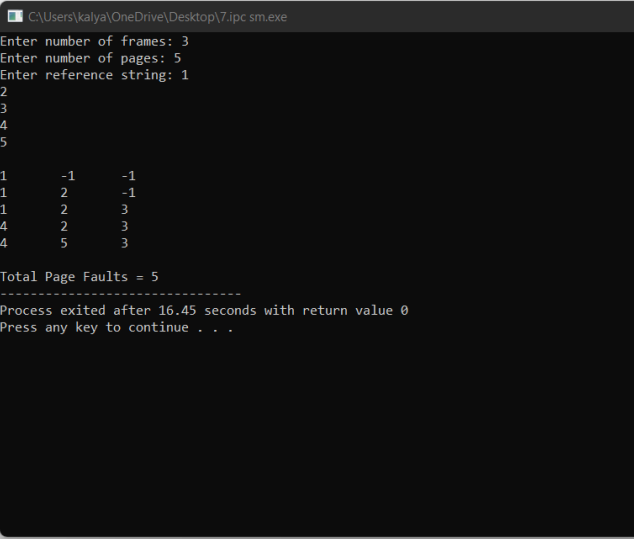


## 18. Construct a C program to simulate the optimal paging technique of memory management

```

1  #include<stdio.h>
2
3  int findLRU(int time[], int n){
4      int i, minimum = time[0], pos = 0;
5
6      for(i = 1; i < n; ++i){
7          if(time[i] < minimum){
8              minimum = time[i];
9              pos = i;
10         }
11     }
12     return pos;
13 }
14
15 int main()
16 {
17     int no_of_frames, no_of_pages, frames[10], pages[30], counter = 0, time[10], flag1, flag2, i, j, pos, faults = 0;
18     printf("Enter number of frames: ");
19     scanf("%d", &no_of_frames);
20     printf("Enter number of pages: ");
21     scanf("%d", &no_of_pages);
22     printf("Enter reference string: ");
23     for(i = 0; i < no_of_pages; ++i){
24         scanf("%d", &pages[i]);
25     }
26
27     for(i = 0; i < no_of_frames; ++i){
28         frames[i] = -1;
29     }
30     for(i = 0; i < no_of_pages; ++i){
31         flag1 = flag2 = 0;
32
33         for(j = 0; j < no_of_frames; ++j){
34             if(frames[j] == pages[i]){
35                 counter++;
36                 time[j] = counter;
37                 flag1 = flag2 = 1;
38                 break;
39             }
40         }
41
42         if(flag1 == 0){
43             for(j = 0; j < no_of_frames; ++j){
44                 if(frames[j] == -1){
45                     counter++;
46                     faults++;
47                     frames[j] = pages[i];
48                     time[j] = counter;
49                     flag2 = 1;
50                     break;
51                 }
52             }
53         }
54
55         if(flag2 == 0){
56             pos = findLRU(time, no_of_frames);
57             counter++;
58             faults++;
59             frames[pos] = pages[i];
60             time[pos] = counter;
61         }
62
63         printf("\n");
64     }
65     for(j = 0; j < no_of_frames; ++j){
66         printf("%d\t", frames[j]);
67     }
68     printf("\n\nTotal Page Faults = %d", faults);
69
70     return 0;
71 }

```



```

C:\Users\kalya\OneDrive\Desktop\7.ipc sm.exe
Enter number of frames: 3
Enter number of pages: 5
Enter reference string: 1
2
3
4
5
1      -1      -1
1      2      -1
1      2      3
4      2      3
4      5      3

Total Page Faults = 5
-----
Process exited after 16.45 seconds with return value 0
Press any key to continue . . .

```