Ex. No.: 11a)
Date: 12/4/2025

FIFO PAGE REPLACEMENT

Aim:

To find out the number of page faults that occur using First-in First-out (FIFO) page replacement technique.

Algorithm:

1. Declare the size with respect to page length
2. Check the need of replacement from the page to memory
3. Check the need of replacement from old page to new page in memory 4.
Form a queue to hold all pages
5. Insert the page require memory into the queue
6. Check for bad replacement and page fault
7. Get the number of processes to be inserted
8. Display the values

Program Code:

```
#include<stdio.h>
int main() {
    int n, j, i, page, frame_size, page_faults =0;
    int ref_str[100], memory[10], index = 0, found;
    Printf("Enter size of reference string: ");
    Scanf("%d", &n);
    for(i=0;i<n;i++){
        Printf("Enter ["%d"]: i+1);
        Scanf("%d", &ref_str[i]);
    }
    Printf("Enter page frame size :");
    Scanf("%d", &frame_size);
    for(i=0;i<frame_size;i++){
        memory[i] = -1;
    }
Printf("\n");
for(i=0;i<n;i++){
    Page=ref_str[i];
 found=0;
 for(j=0;j<frame_size;j++){
     if(memory[j]==page){
        found=1;
        break;
     }
   }
  if(!found){
    memory[index]=page;
    index=(index+1)%frame_size;
    Page_faults++;
    Printf("%d->",page);
   for(j=0;j<frame_size;j++){
   if(memory[j]==-1)
      Printf["-"];
   else
      Printf("%d",memory[j]);

   }
     Printf("\n");
   } else {
       Printf("%d"->No page fault\n",page);

   }
  }
 Printf("\nTotal page fault:%d\n",page_faults);
 return 0;
}
```

Sample Output:

```
[root@localhost student]# python fifo.py

 Enter the size of reference string: 20
 Enter [ 1] : 7
 Enter [ 2] : 0
 Enter [ 3] : 1
 Enter [ 4] : 2
 Enter [ 5] : 0
 Enter [ 6] : 3
 Enter [ 7] : 0
 Enter [ 8] : 4
 Enter [ 9] : 2
 Enter [10] : 3
 Enter [11] : 0
 Enter [12] : 3
 Enter [13] : 2
 Enter [14] : 1
 Enter [15] : 2
 Enter [16] : 0
 Enter [17] : 1
 Enter [18] : 7
 Enter [19] : 0
 Enter [20] : 1

 Enter page frame size : 3

 7 ->7 - -
 0 ->7 0 -
 1 ->7 0 1
 2 ->2 0 1
 0 -> No Page Fault


 3 ->2 3 1
 0 ->2 3 0
 4 ->4 3 0
 2 ->4 2 0
 3 ->4 2 3
 0 ->0 2 3
 3 -> No Page Fault
 2 -> No Page Fault
 1 ->0 1 3
 2 ->0 1 2
 0 -> No Page Fault
 1 -> No Page Fault
 7 ->7 1 2
 0 ->7 0 2
```

```
1 ->7 0 1
Total page faults: 15.
[root@localhost student]#
```

Sample input

Enter number of pages : 12

Enter the reference string : 130356306917

Enter frame size : 3

Output

```
1 : 1
3 : 13
0 : 130
3 : 130
5 : 530
6 : 560
3 : 563
0 : 063
6 : 063
4 : 463
1 : 413
7 : 417
```

Total page fault : 9

Result : Thus no of page fault is calculated using FIFO page replacemant algorthim