

Aim:

Aim: Simulate FIFO page replacement algorithms.

Description:**THEORY:****FIFO algorithm:**

The simpler page replacement algorithm is a FIFO algorithm. A FIFO replacement algorithm associates with each page the time when that page was brought into memory. When a page must be replaced, the oldest page is chosen. We can create a FIFO queue to hold all pages in memory. We replace the page at the head of the queue when a page is brought into memory; we insert it at the tail of the queue.

7	0	1	2	0	3	0	4	2	3	0	3	2	1	2	0	1	7	0	1
7	7	7	2		2	2	4	4	4	0			0	0			7	7	7
	0	0	0		3	3	3	2	2	2			1	1			1	0	0
		1	1		4	0	0	0	3	3			3	2			2	2	1

Algorithm:

1. Start
2. Read the number of frames
3. Read the number of pages
4. Read the page numbers
5. Initialize the values in frames to -1
6. Allocate the pages into frames in First in first out order.
7. Display the number of page faults.
8. Stop

Source Code:**FIFOPage.c**

```
#include<stdio.h>
#include<conio.h>
int i,j,nof,nor,flag=0,ref[50],frm[50],pf=0,victim=-1;
void main()
{
    printf("FIFO PAGE REPLACEMENT ALGORITHM");
    printf("\nEnter no.of frames: ");
    scanf("%d",&nof);
    printf("Enter number of Pages: ");
    scanf("%d",&nor);
    printf("Enter the Page No: ");
    for(i=0;i<nor;i++)
        scanf("%d",&ref[i]);
    printf("The given Pages are: ");
    for(i=0;i<nor;i++)
        printf("%4d",ref[i]);
    for(i=1;i<=nof;i++)
        frm[i]=-1;
    printf("\n");
    for(i=0;i<nor;i++)
    {
```

```

    flag = 0;
    printf("page no %d->\t",ref[i]);
    for(j=0;j<nof;j++)
    {
        if(frm[j] == ref[i])
        {
            flag = 1;
            break;
        }
    }
    if(flag == 0)
    {
        pf++;
        victim++;
        victim = victim % nof;
        frm[victim]=ref[i];
        for(j=0;j<nof;j++)
            printf("%4d",frm[j]);
        printf("\n");
    }
}
printf("No.of pages faults:%d",pf);
}

```

Execution Results - All test cases have succeeded!

Test Case - 1									
User Output									
FIFO PAGE REPLACEMENT ALGORITHM 4									
Enter no.of frames: 4									
Enter number of Pages: 5									
Enter the Page No: 4 1 2 3 5									
The given Pages are: 4 1 2 3 5									
page no 4->	4	-1	-1	-1					
page no 1->	4	1	-1	-1					
page no 2->	4	1	2	-1					
page no 3->	4	1	2	3					
page no 5->	5	1	2	3					
No.of pages faults:5									

Test Case - 2									
User Output									
FIFO PAGE REPLACEMENT ALGORITHM 4									
Enter no.of frames: 4									
Enter number of Pages: 6									
Enter the Page No: 5 6 4 1 2 3									
The given Pages are: 5 6 4 1 2 3									
page no 5->	5	-1	-1	-1					
page no 6->	5	6	-1	-1					
page no 4->	5	6	4	-1					
page no 1->	5	6	4	1					
page no 2->	2	6	4	1					

page no 3->	2	3	4	1
No.of pages faults:6				