**FIFO Page Replacement algorithm in java**

**code in Java:**

import java.io.\*;

public class FIFO {

public static void main(String[] args) throws IOException

{

BufferedReader br = new BufferedReader(new InputStreamReader(System.in));

int frames, pointer = 0, hit = 0, fault = 0,ref\_len;

int buffer[];

int reference[];

int mem\_layout[][];

System.out.println("Please enter the number of Frames: ");

frames = Integer.parseInt(br.readLine());

System.out.println("Please enter the length of the Reference string: ");

ref\_len = Integer.parseInt(br.readLine());

reference = new int[ref\_len];

mem\_layout = new int[ref\_len][frames];

buffer = new int[frames];

for(int j = 0; j < frames; j++)

buffer[j] = -1;

System.out.println("Please enter the reference string: ");

for(int i = 0; i < ref\_len; i++)

{

reference[i] = Integer.parseInt(br.readLine());

}

System.out.println();

for(int i = 0; i < ref\_len; i++)

{

int search = -1;

for(int j = 0; j < frames; j++)

{

if(buffer[j] == reference[i])

{

search = j;

hit++;

break;

}

}

if(search == -1)

{

buffer[pointer] = reference[i];

fault++;

pointer++;

if(pointer == frames)

pointer = 0;

}

for(int j = 0; j < frames; j++)

mem\_layout[i][j] = buffer[j];

}

for(int i = 0; i < frames; i++)

{

for(int j = 0; j < ref\_len; j++)

System.out.printf("%3d ",mem\_layout[j][i]);

System.out.println();

}

System.out.println("The number of Hits: " + hit);

System.out.println("Hit Ratio: " + (float)((float)hit/ref\_len));

System.out.println("The number of Faults: " + fault);

}

}

**output:-**

Please enter the number of Frames:

3

Please enter the length of the Reference string:

20

Please enter the reference string:

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 2 4 4 4 0 0 0 0 0 0 0 7 7 7

-1 0 0 0 0 3 3 3 2 2 2 2 2 1 1 1 1 1 0 0

-1 -1 1 1 1 1 0 0 0 3 3 3 3 3 2 2 2 2 2 1

The number of Hits: 5

Hit Ratio: 0.25

The number of Faults: 15

--------------------------------

The Simplest page replacement algorithm is First In First Out (FIFO) .A First In First Out (FIFO) replacement algorithm associated 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 First In First Out (FIFO) queue to hold all pages in memory.The First In First Out (FIFO) page replacement algorithm is easy to understand and program.  
  
  
import java.io.\*;  
class FIFO  
{  
  
        public static void main(String args[]) throws IOException  
        {  
                  
                int n;  
                int f;  
  
                float rat;  
                BufferedReader br=new BufferedReader(new InputStreamReader(System.in));  
                System.out.println("Enter the number of FRAMES :");  
                f=Integer.parseInt(br.readLine());  
                int fifo[]=new int[f];  
                System.out.println("Enter the number of INPUTS :");  
                n=Integer.parseInt(br.readLine());  
                int inp[]=new int[n];  
                System.out.println("Enter INPUT:");  
                for(int i=0;i<n;i++)  
                inp[i]=Integer.parseInt(br.readLine());  
                System.out.println("----------------------");  
                for(int i=0;i<f;i++)  
                        fifo[i]=-1;  
                int Hit=0;  
                int Fault=0;  
                int j=0;  
                boolean check;  
                for(int i=0;i<n;i++)  
                {  
                        check=false;  
  
  
                                for(int k=0;k<f;k++)  
                                if(fifo[k]==inp[i])  
                                {  
                                        check=true;  
                                        Hit=Hit+1;  
                                }  
                                if(check==false)  
                                {  
                                        fifo[j]=inp[i];  
                                        j++;  
                                        if(j>=f)  
                                        j=0;  
                                        Fault=Fault+1;  
                                }  
  
                }  
                rat = (float)Hit/(float)n;  
                System.out.println("HIT:"+Hit+"  FAULT:"+Fault+"   HIT RATIO:"+rat);  
        }  
}  
/\*  
First In First Out (FIFO) page replacement algorithm Output:  
run:  
Enter the number of FRAMES :  
3  
Enter the number of INPUTS :  
12  
Enter INPUT:  
1  
2  
3  
4  
1  
2  
5  
1  
2  
3  
4  
5  
----------------------  
HIT:3  FAULT:9   HIT RATIO:0.25  
BUILD SUCCESSFUL (total time: 37 seconds)  
\*/