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:-

"C:\Program Files\Java\jdk-22\bin\java.exe" "-javaagent:C:\Users\AISHWARYA\AppData\Local\JetBrains\IntelliJ IDEA Community Edition 2024.1\lib\idea\_rt.jar=50773:C:\Users\TEJASWINI CHANDARGI\AppData\Local\JetBrains\IntelliJ IDEA Community Edition 2024.1\bin" -Dfile.encoding=UTF-8 -Dsun.stdout.encoding=UTF-8 -Dsun.stderr.encoding=UTF-8 -classpath "C:\Users\AISHWARYA\IdeaProjects\helloprogram\out\production\helloprogram" lp1

Please enter the number of Frames:

3

Please enter the length of the Reference string:

12

Please enter the reference string:

2

4

7

5

2

4

7

2

4

6

3

7

2 2 2 5 5 5 7 7 7 7 7 7

-1 4 4 4 2 2 2 2 2 6 6 6

-1 -1 7 7 7 4 4 4 4 4 3 3

The number of Hits: 3

Hit Ratio: 0.25

The number of Faults: 9