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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);
```

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}
}
```