import java.io.\***;**import java.util.\***;**public class lp1  
{  
 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**;** Boolean isFull = false**;** int buffer[]**;** ArrayList<Integer> stack = new ArrayList<Integer>()**;** 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++)  
 {  
 if(stack.contains(reference[i]))  
 {  
 stack.remove(stack.indexOf(reference[i]))**;** }  
 stack.add(reference[i])**;** int search = -**1;** for(int j = **0;** j < frames**;** j++)  
 {  
 if(buffer[j] == reference[i])  
 {  
 search = j**;** hit++**;** break**;** }  
 }  
 if(search == -**1**)  
 {  
 if(isFull)  
 {  
 int min\_loc = ref\_len**;** for(int j = **0;** j < frames**;** j++)  
 {  
 if(stack.contains(buffer[j]))  
 {  
 int temp = stack.indexOf(buffer[j])**;** if(temp < min\_loc)  
 {  
 min\_loc = temp**;** pointer = j**;** }  
 }  
 }  
 }  
 buffer[pointer] = reference[i]**;** fault++**;** pointer++**;** if(pointer == frames)  
 {  
 pointer = **0;** isFull = true**;** }  
 }  
 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:

7

Please enter the reference string:

3

6

2

4

3

6

2

3 3 3 4 4 4 2

-1 6 6 6 3 3 3

-1 -1 2 2 2 6 6

The number of Hits: 0

Hit Ratio: 0.0

The number of Faults: 7

Process finished with exit code 0