

```

1  import java.io.*;
2  public class Main {
3
4      public static void main(String[] args) throws IOException
5      {
6          BufferedReader br = new BufferedReader(new
7  InputStreamReader(System.in));
8          int frames, pointer = 0, hit = 0, fault = 0, ref_len;
9          int buffer[];
10         int reference[];
11         int mem_layout[][];
12
13         System.out.println("Please enter the number of Frames: ");
14         frames = Integer.parseInt(br.readLine());
15
16         System.out.println("Please enter the length of the Reference string: ");
17         ref_len = Integer.parseInt(br.readLine());
18
19         reference = new int[ref_len];
20         mem_layout = new int[ref_len][frames];
21         buffer = new int[frames];
22         for(int j = 0; j < frames; j++)
23             buffer[j] = -1;
24
25         System.out.println("Please enter the reference string: ");
26         for(int i = 0; i < ref_len; i++)
27         {
28             reference[i] = Integer.parseInt(br.readLine());
29         }
30         System.out.println();
31         for(int i = 0; i < ref_len; i++)
32         {
33             int search = -1;
34             for(int j = 0; j < frames; j++)
35             {
36                 if(buffer[j] == reference[i])
37                 {
38                     search = j;
39                     hit++;
40                     break;
41                 }
42             }
43             if(search == -1)
44             {
45                 buffer[pointer] = reference[i];
46                 fault++;
47                 pointer++;
48                 if(pointer == frames)
49                     pointer = 0;
50             }
51             for(int j = 0; j < frames; j++)
52                 mem_layout[i][j] = buffer[j];
53         }
54
55         for(int i = 0; i < frames; i++)
56         {
57             for(int j = 0; j < ref_len; j++)
58                 System.out.printf("%3d ", mem_layout[j][i]);
59             System.out.println();
60         }
61
62         System.out.println("The number of Hits: " + hit);
63         System.out.println("Hit Ratio: " + (float)((float)hit/ref_len));
64         System.out.println("The number of Faults: " + fault);
65     }
66

```

