

```

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++;
39                    break;
40                }
41            }
42            if(search == -1)
43            {
44                buffer[pointer] = reference[i];
45                fault++;
46                pointer++;
47                if(pointer == frames)
48                    pointer = 0;
49            }
50            for(int j = 0; j < frames; j++)
51                mem_layout[i][j] = buffer[j];
52        }
53
54        for(int i = 0; i < frames; i++)
55        {
56            for(int j = 0; j < ref_len; j++)
57                System.out.printf("%3d ",mem_layout[j][i]);
58            System.out.println();
59        }
60
61        System.out.println("The number of Hits: " + hit);
62        System.out.println("Hit Ratio: " + (float)((float)hit/ref_len));
63        System.out.println("The number of Faults: " + fault);
64    }
65
66

```

