

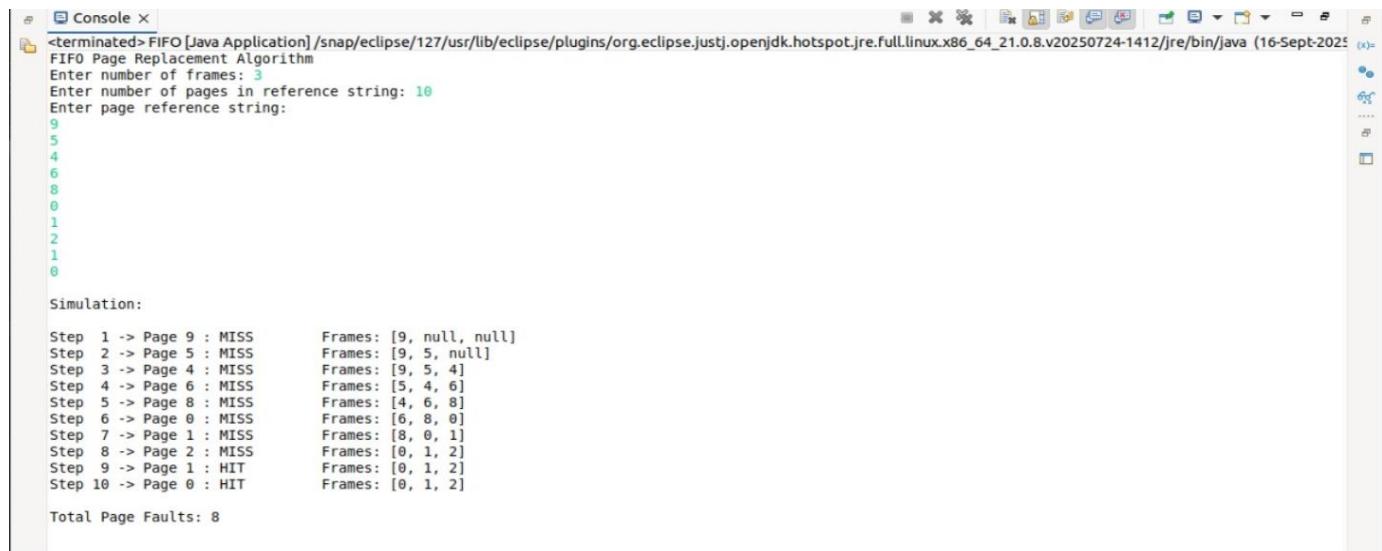
```
1 package A4;
2
3 import java.io.*;
4
5 public class FIFO {
6     public static void main(String[] args) throws IOException {
7         BufferedReader br = new BufferedReader(new InputStreamReader(System.in));
8
9         int frames, pointer = 0, hit = 0, fault = 0, ref_len;
10        int buffer[];
11        int reference[];
12        int mem_layout[][][];
13
14        System.out.println("Please enter the number of Frames: ");
15        frames = Integer.parseInt(br.readLine());
16
17        System.out.println("Please enter the length of the Reference string: ");
18        ref_len = Integer.parseInt(br.readLine());
19
20        reference = new int[ref_len];
21        mem_layout = new int[ref_len][frames];
22        buffer = new int[frames];
23
24        for (int j = 0; j < frames; j++)
25            buffer[j] = -1;
26
27        System.out.println("Please enter the reference string: ");
28        for (int i = 0; i < ref_len; i++) {
29            reference[i] = Integer.parseInt(br.readLine());
30        }
31
32        System.out.println();
33        for (int i = 0; i < ref_len; i++) {
34            int search = -1;
35
36            for (int j = 0; j < frames; j++) {
37                if (buffer[j] == reference[i]) {
38                    search = j;
39                    hit++;
40                    break;
41                }
42            }
43
44            if (search == -1) {
45                buffer[pointer] = reference[i];
46                fault++;
47            }
48        }
49    }
50}
```

```

47         pointer++;
48         if (pointer == frames)
49             pointer = 0;
50     }
51
52     for (int j = 0; j < frames; j++)
53         mem_layout[i][j] = buffer[j];
54 }
55
56 System.out.println("Memory Layout:");
57 for (int i = 0; i < frames; i++) {
58     for (int j = 0; j < ref_len; j++)
59         System.out.printf("%3d ", mem_layout[j][i]);
60     System.out.println();
61 }
62
63 System.out.println("The number of Hits: " + hit);
64 System.out.println("Hit Ratio: " + (float) hit / ref_len);
65 System.out.println("The number of Faults: " + fault);
66 }
67 }
68

```

Output :



The screenshot shows the Eclipse IDE's Console view with the following output:

```

<terminated> FIFO [Java Application] /snap/eclipse/127/usr/lib/eclipse/plugins/org.eclipse.justj.openjdk.hotspot.jre.full.linux.x86_64_21.0.8.v20250724-1412/jre/bin/java (16-Sept-2025)
FIFO Page Replacement Algorithm
Enter number of frames: 3
Enter number of pages in reference string: 10
Enter page reference string:
9
5
4
6
8
0
1
2
1
0

Simulation:
Step 1 -> Page 9 : MISS      Frames: [9, null, null]
Step 2 -> Page 5 : MISS      Frames: [9, 5, null]
Step 3 -> Page 4 : MISS      Frames: [9, 5, 4]
Step 4 -> Page 6 : MISS      Frames: [5, 4, 6]
Step 5 -> Page 8 : MISS      Frames: [4, 6, 8]
Step 6 -> Page 0 : MISS      Frames: [6, 8, 0]
Step 7 -> Page 1 : MISS      Frames: [8, 0, 1]
Step 8 -> Page 2 : MISS      Frames: [0, 1, 2]
Step 9 -> Page 1 : HIT       Frames: [0, 1, 2]
Step 10 -> Page 0 : HIT      Frames: [0, 1, 2]

Total Page Faults: 8

```