

2nd Question :



```
1  abstract class Furniture {
2
3      protected String color;
4      protected int width;
5      protected int height;
6      public abstract void accept();
7      public abstract void display();
8  }
9      class chair extends Furniture {
10     private int numOf_legs;
11
12     public void accept() {
13
14         color = "Brown";
15         width = 36;
16         height = 48;
17         numOf_legs = 4;
18     }
19     public void display() {
20         System.out.println("DISPLAYING VALUE FOR CHAIR");
21         System.out.println("=====");
22         System.out.println("Color is" + color);
23         System.out.println("Width is" + width);
24         System.out.println("Height is" + height);
25         System.out.println("Number of legs is" + numOf_legs);
26         System.out.println(" ");
27     }
28 }
29
30 class Bookshelf extends Furniture {
31     private int numOf_shelves;
32
33     public void accept() {
34
35         color = "Black";
36         width = 72;
37         height = 84;
38         numOf_shelves = 4;
39     }
40     public void display () {
41         System.out.println("DISPLAYING VALUES FOR BOOKSHELF");
42         System.out.println("=====");
43     }
44 }
```



←

Furniture.java

🔒

Saved

→

⋮

```
32 private int numOf_shelves;
33
34 public void accept() {
35     color = "Black";
36     width = 72;
37     height = 84;
38     numOf_shelves = 4;
39 }
40
41 public void display () {
42     System.out.println("DISPLAYING VALUES FOR E
43     System.out.println
44     ("=====");
45
46     System.out.println("Color is" + color);
47     System.out.println("Width is" + width);
48     System.out.println("Height is" + height);
49     System.out.println("Number of shelves is" +
50     System.out.println(" ");
51 }
52 }
53
54 class FurnitureDemo {
55     public static void main(String[] args) {
56         System.out.println("Host name : M.Likhitha
57         System.out.println("Sap id : 51834624");
58         Bookshelf b1 = new Bookshelf();
59         b1.accept();
60         b1.display();
61
62
63         chair c1 = new chair ();
64         c1.accept();
65         c1.display();
66
67     }
68 }
```

Try Decoder's keyboard

🎮



Output Screen :

```
× Terminal
Host name : M.Likhitha
Sap id : 51834624
DISPLAYING VALUES FOR BOOKSHELF
=====
Color isBlack
Width is72
Height is84
Number of shelves is4

DISPLAYING VALUE FOR CHAIR
=====
Color isBrown
Width is36
Height is48
Number of legs is4

Process finished.
```



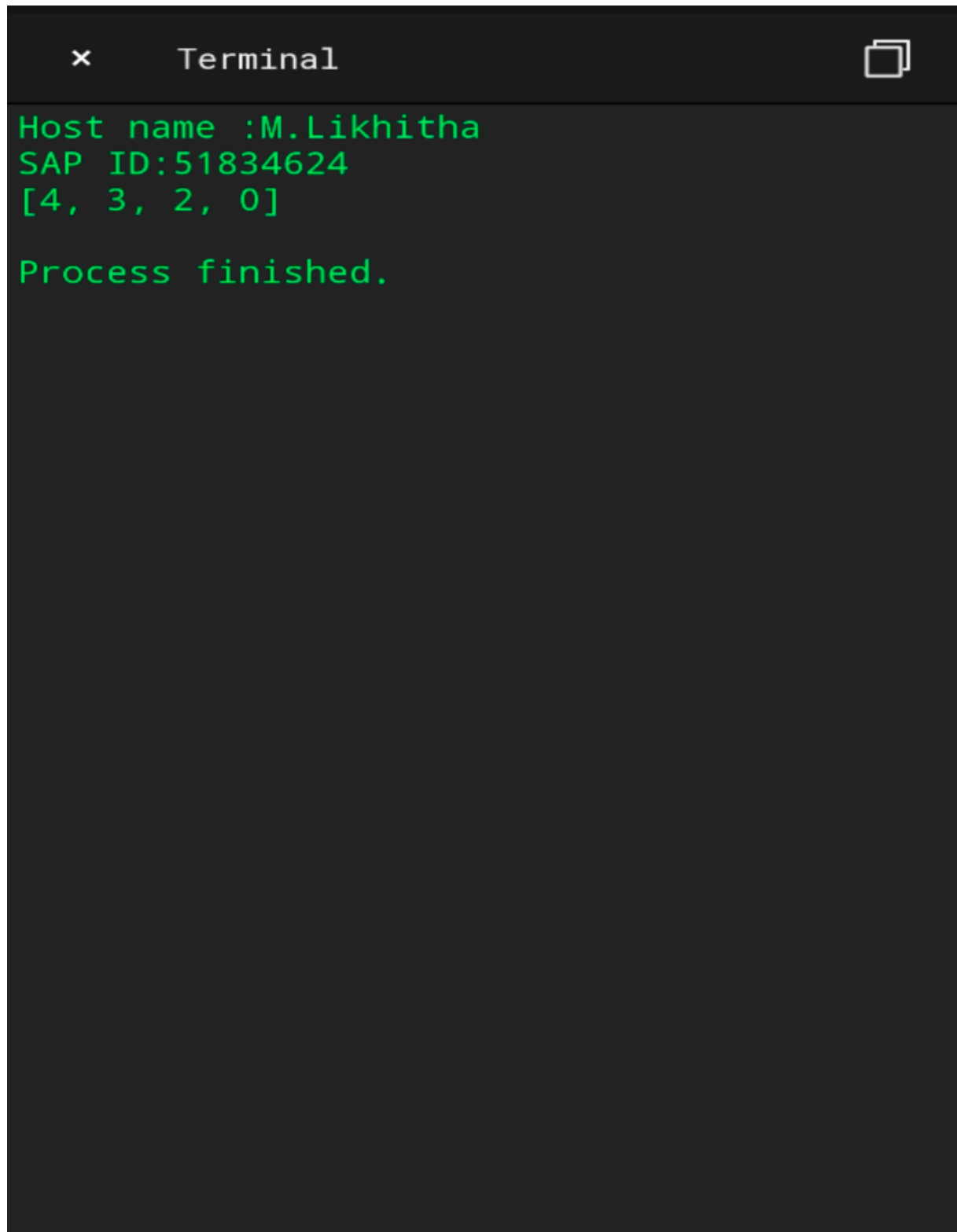
### 3rd Question :

```
Stream.java
Saved

1  import java.util.*;
2
3  class Main
4  {
5      public static int[] remove(int[] x, int key)
6      {
7          List<Integer> result = new ArrayList<>();
8
9          for (int y: x) {
10             if (y != key) {
11                 result.add(y);
12             }
13         }
14
15         return result.stream()
16             .mapToInt(Integer::intValue)
17             .toArray();
18     }
19
20     public static void main(String[] args) {
21         int[] x = { 1, 4, 1, 3, 1, 2, 1, 0 };
22         int key = 1;
23
24         x = remove(x, key);
25         System.out.println("Author:M.Likhitha\r\n");
26         System.out.println(Arrays.toString(x));
27     }
28 }
```



Output Screen :

A screenshot of a terminal window with a dark background. The title bar at the top shows a close button (X), the word "Terminal", and a maximize button. The terminal content is displayed in green text on a black background. It shows the host name "M.Likhitha", the SAP ID "51834624", and an array "[4, 3, 2, 0]". The message "Process finished." is shown on a new line.

```
Host name :M.Likhitha  
SAP ID:51834624  
[4, 3, 2, 0]  
  
Process finished.
```



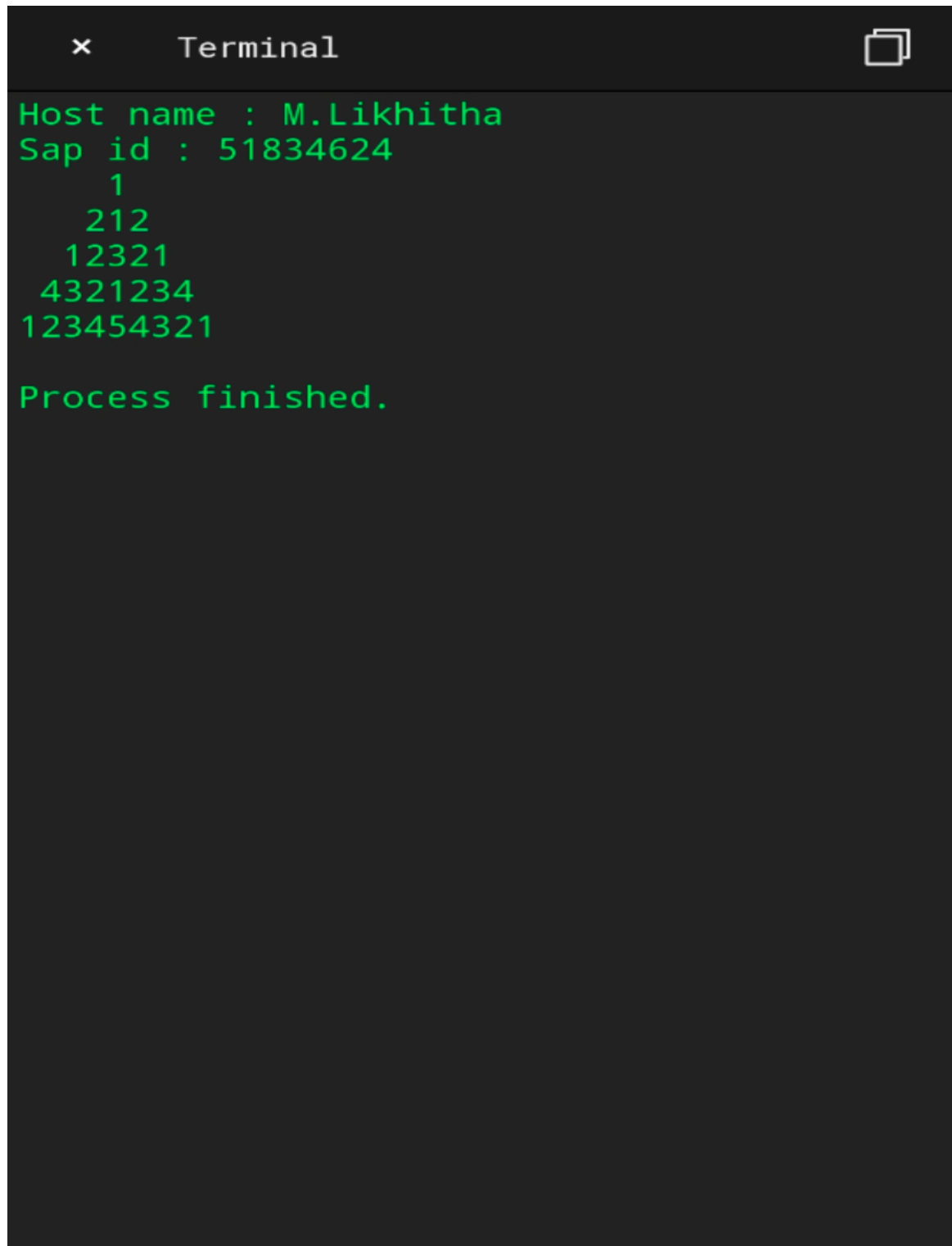
#### 4th Question :

```
PatternNum.java
Saved

1 public class Main
2 {
3     public static void main(String[] args)
4     {
5         System.out.println("Host name : M.Likhitha");
6         int i,j,k;
7         for(i=1;i<=5;i++)
8         {
9             for(j=5;j>i;j--)
10            {
11                System.out.print(" ");
12            }
13            if(i%2!=0){
14                for(j=1,k=1;j<=2*i-1;j++)
15                {
16                    if(j<i) {
17                        System.out.print(k);
18                        k++;
19                    }
20                    else {
21                        System.out.print(k);
22                        k--;
23                    }
24                }
25            }
26            else {
27                for(j=1,k=i;j<=2*i-1;j++)
28                {
29                    if(j<i)
30                    {
31                        System.out.print(k);
32                        k--;
33                    }
34                    else
35                    {
36                        System.out.print(k);
37                        k++;
38                    }
39                }
40            }
41            System.out.println();
42        }
43    }
44 }
```



Output Screen :

A screenshot of a terminal window with a dark background. The window has a title bar with a close button (x), the text 'Terminal', and a maximize button. The output is displayed in green text. It shows the host name and sap id, followed by a series of numbers arranged in a triangular pattern, and finally a message indicating the process is finished.

```
Host name : M.Likhitha
Sap id : 51834624
  1
 212
12321
4321234
123454321

Process finished.
```



**Marks in mcq test : 16/20**

**Grade : 8/10**

