

```
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 = "Black";  
15        width = 40;  
16        height = 45;  
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_l  
26        System.out.println(" ");  
27    }  
28 }  
29  
30 class Bookshelf extends Furniture {  
31  
32    private int numOf_shelves;  
33  
34    public void accept() {  
35  
36        color = "Brown";  
37        width = 72;  
38        height = 80;  
39        numOf_shelves = 5;  
40    }  
41    public void display () {  
42        System.out.println("DISPLAYING VALUES FOR BOOKS  
43        System.out.println(" ");  
44    }  
45 }
```

```
45 System.out.println("Color is" + color);
46 System.out.println("Width is" + width);
47 System.out.println("Height is" + height);
48 System.out.println("Number of shelves is" + numOfShelves);
49 System.out.println(" ");
50 System.out.println(" ");
51 }
52 }
53
54 class FurnitureDemo {
55     public static void main(String[] args) {
56         Bookshelf b1 = new Bookshelf();
57         b1.accept();
58         b1.display();
59
60
61         chair c1 = new chair ();
62         c1.accept();
63         c1.display();
64
65     }
66 }
```

DISPLAYING VALUES FOR BOOKSHELF

=====

Color isBrown

Width is72

Height is80

Number of shelves is5

DISPLAYING VALUE FOR CHAIR

=====

Color isBlack

Width is40

Height is45

Number of legs is4

Process finished.

```
1 import java.util.*;
2
3 class Height
4 {
5     private int feet;
6     private int inches;
7
8     public void getDistance()
9     {
10         Scanner sc=new Scanner(System.in);
11
12         System.out.print("Enter feet: ");
13         feet=sc.nextInt();
14         System.out.print("Enter inches: ");
15         inches=sc.nextInt();
16     }
17     public void showDistance()
18     {
19         System.out.println("Feet: "+ feet + "\tInches: "
20     }
21
22     public void addDistance(Height H1, Height H2)
23     {
24         inches=H1.inches+H2.inches;
25         feet=H1.feet+H2.feet+(inches/12);
26         inches=inches%12;
27     }
28 }
29
30 public class Main
31 {
32     public static void main(String []s)
33     {
34         try
35         {
36
37             Height H1=new Height();
38             Height H2=new Height();
39             Height H3=new Height();
40
41             //read first Height
42             System.out.println("Name:pavan kumar");
43             System.out.println("Sap id:51834695");
44             System.out.println("Enter first Height: ");
```

```
44     System.out.println("Enter first Height: ");
45     H1.getDistance();
46
47     //read second Height
48     System.out.println("Enter second Height: ");
49     H2.getDistance();
50
51     //add heights
52     H3.addDistance(H1,H2);
53     //print Height
54     System.out.println("Total Height is: " );
55     H3.showDistance();
56 }
57 catch (Exception e)
58 {
59     System.out.println("Exception occurred :"+ e.
60 }
61 }
62 }
```

Name:pavan kumar

Sap id:51834695

Enter first Height:

Enter feet: 6

Enter inches: 20

Enter second Height:

Enter feet: 5

Enter inches: 25

Total Height is:

Feet: 14 Inches: 9

Process finished.

```
1 import java.util.*;
2 public class Main
3 {
4     public static void main(String[] args)
5     {
6         int i,j,k;
7         Scanner sc=new Scanner(System.in);
8         System.out.println("Name:pavan kumar");
9         System.out.println("Sap id:51834695");
10        System.out.println("enter no.of rows");
11
12        int n=sc.nextInt();
13
14        for(i=0; i<n; i++)
15        {
16            //initializing k as one
17            k=1;
18            for(j=0; j<(n+i); j++)
19            {
20                if(j<n-i-1)
21                    //prints space in the less than n-i-
22                    System.out.print(" ");
23                else
24                {
25                    // else prints k
26                    System.out.print(+ k);
27                    if(j<(n-1))
28                        // if j is greater than n-1
29                        //increases to k+1
30                        k++;
31
32                else
33                    //if not k as k-1
34                    k--;
35            }
36        }
37        System.out.println(" ");
38    }
39 }
40
41
42 }
```

Name:pavan kumar  
Sap id:51834695  
enter no.of rows  
5

1  
121  
12321  
1234321  
123454321

Process finished.

```
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, 6, 1, 2, 3, 1, 0 };
22         int key = 1;
23
24         x = remove(x, key);
25         System.out.println("Name:pavan kumar");
26         System.out.println ("Sap id:51834695");
27         System.out.println(Arrays.toString(x));
28     }
29 }
```

Name:pavan kumar  
Sap id:51834695  
[4, 6, 2, 3, 0]

Process finished.