1)

```
import java.util.*;

class Height
{
	private int feet;
	private int inches;

	public void getDistance()
	{
		Scanner sc=new Scanner(System.in);

		System.out.print("Enter feet: ");
		feet=sc.nextInt();
		System.out.print("Enter inches: ");
		inches=sc.nextInt();
	}
	public void showDistance()
	{
		System.out.println("Feet: "+ feet + "\tInches: "+ inches);
	}

	public void addDistance(Height H1, Height H2)
	{
		inches=H1.inches+H2.inches;
		feet=H1.feet+H2.feet+(inches/12);
		inches=inches%12;
	}
}

public class Main
{
	public static void main(String []s)
	{
		try
		{

			Height H1=new Height();
			Height H2=new Height();
			Height H3=new Height();

			//read first Height
			System.out.println("Author:D.Aditya Varma\nSAP ID:51834693");
			System.out.println("Enter first Height: ");
			H1.getDistance();

			//read second Height
			System.out.println("Enter second Height: ");
			H2.getDistance();

			//add heights
			H3.addDistance(H1,H2);
```

```
                //print Height
                System.out.println("Total Height is:" );
                H3.showDistance();
            }
            catch (Exception e)
            {
                System.out.println("Exception occurred :"+ e.toString());
            }
        }
}
```

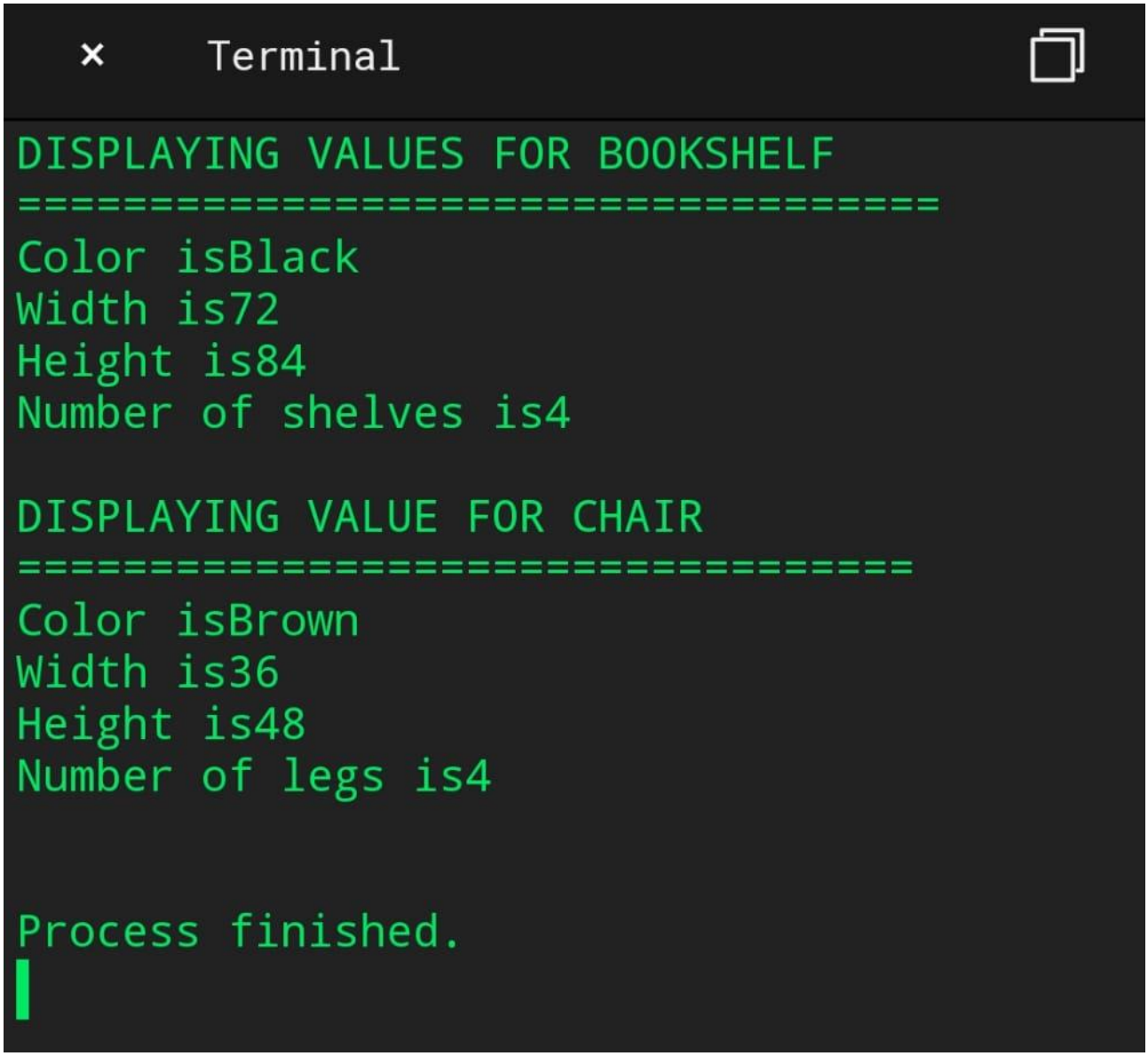
Output:

2)abstract class Furniture {

```
 protected String color;
 protected int width;
 protected int height;
 public abstract void accept();
 public abstract void display();
}
   class chair extends Furniture {
 private int numOf_legs;

 public void accept() {

 color = "Brown";
 width = 36;
 height = 48;
 numOf_legs = 4;
}
  public void display()    {
 System.out.println("DISPLAYING VALUE FOR CHAIR");
 System.out.println("================================");
 System.out.println("Color is" + color);
 System.out.println("Width is" + width);
 System.out.println("Height is" + height);
 System.out.println("Number of legs is" + numOf_legs);
 System.out.println(" ");
 }
}

class Bookshelf extends Furniture {

 private int numOf_shelves;

 public void accept()  {

  color ="Black";
  width = 72;
  height = 84;
  numOf_shelves = 4;
 }
 public void display ()  {
  System.out.println("DISPLAYING VALUES FOR BOOKSHELF");
  System.out.println
 ("================================");

 System.out.println("Color is" + color);
 System.out.println("Width is" + width);
 System.out.println("Height is" + height);
 System.out.println("Number of shelves is" + numOf_shelves);
 System.out.println(" ");
 }
}
```

```
class FurnitureDemo  {
 public static void main(String[] args)   {
  Bookshelf b1 = new Bookshelf();
  b1.accept();
  b1.display();


  chair c1 = new chair ();
  c1.accept();
  c1.display();

 }
 }
```

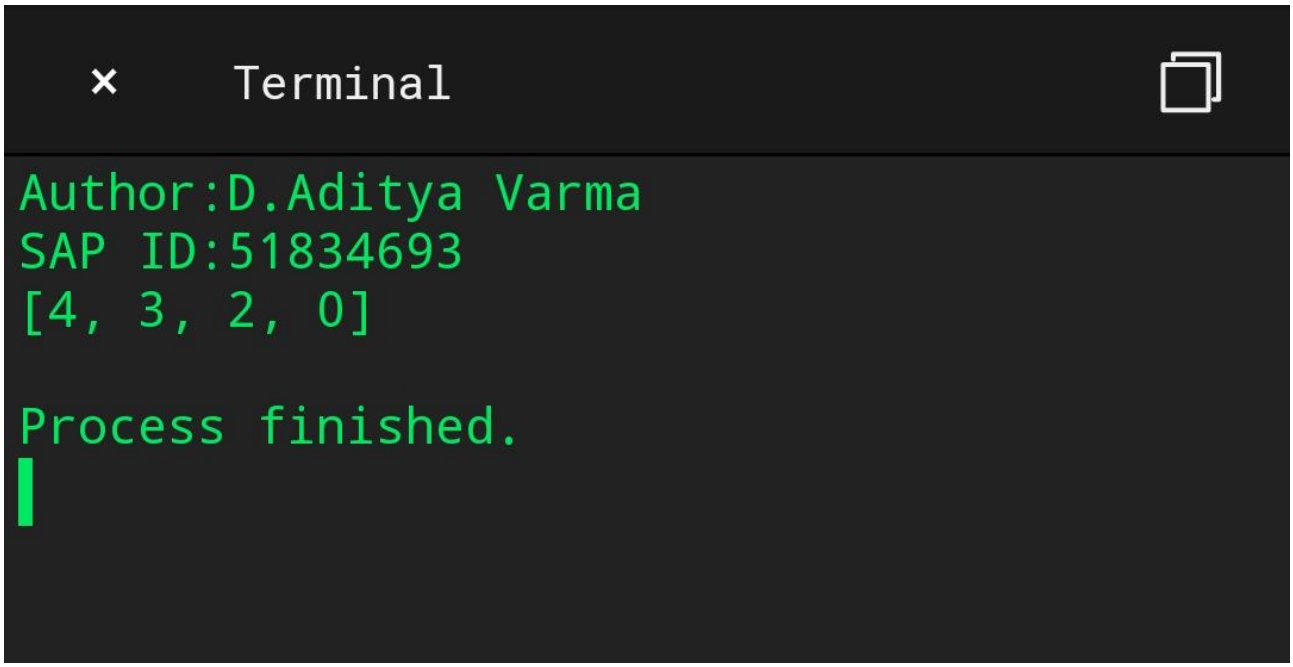
Output:



3)import java.util.*;

```
class Main
{
	public static int[] remove(int[] x, int key) {

		List<Integer> result = new ArrayList<>();

		for (int y: x) {
			if (y != key) {
				result.add(y);
			}
		}

		return result.stream()
					.mapToInt(Integer::intValue)
					.toArray();
	}

	public static void main(String[] args) {
		int[] x = { 1, 4, 1, 3, 1, 2, 1, 0 };
		int key = 1;

		x = remove(x, key);
		System.out.println("Author:D.Aditya Varma\nSAP ID:51834693");
		System.out.println(Arrays.toString(x));
	}
}
```

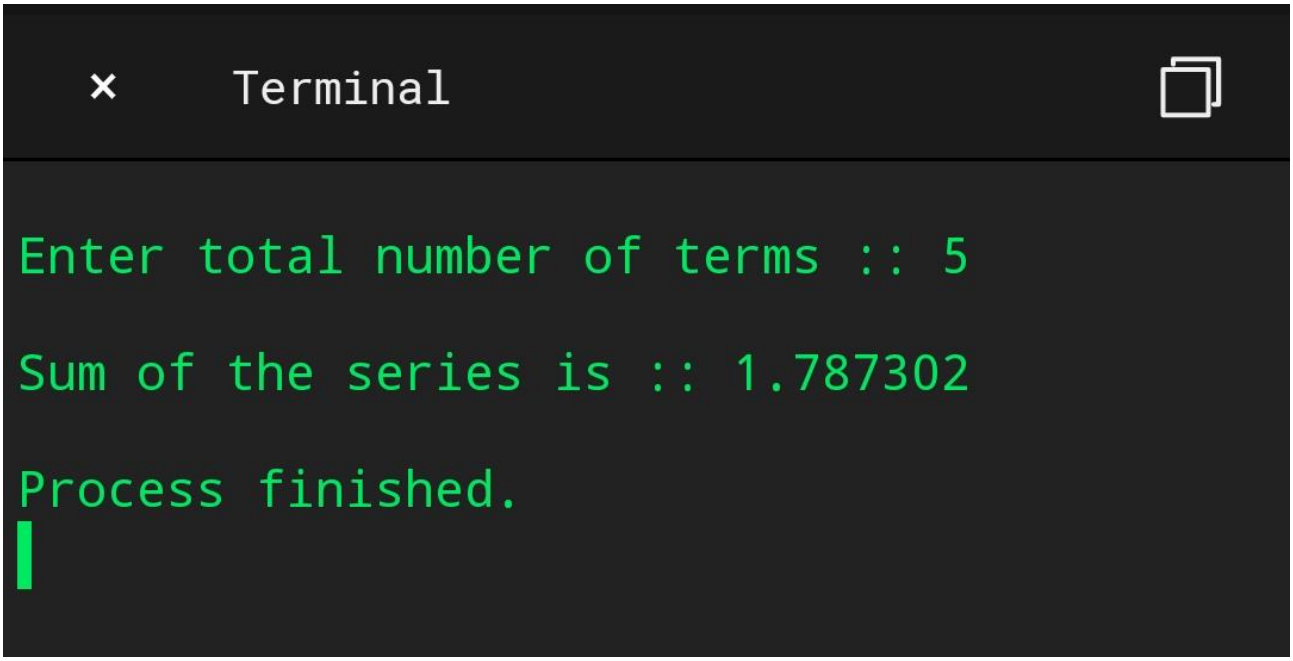
Output:



4)

```
public class Main
{
	public static void main(String[] args)
	{
	   int i,j,k;
	   for(i=1;i<=5;i++)
	   {
	      for(j=5;j>i;j--)
	      {
	         System.out.print(" ");
	      }
	      if(i%2!=0)
	      {
	         for(j=1,k=1;j<=2*i-1;j++)
	         {
	            if(j<i)
	            {
	               System.out.print(k);
	               k++;
	            }
	            else
	            {
	               System.out.print(k);
	               k--;
	            }
	         }
	      }
	      else
	      {
	         for(j=1,k=i;j<=2*i-1;j++)
	         {
	            if(j<i)
	            {
	               System.out.print(k);
	               k--;
	            }
	            else
	            {
	               System.out.print(k);
	               k++;
	            }
	         }
	      }
	            System.out.println();
	   }
	}
}
```

Output:


Terminal
Enter total number of terms :: 5
Sum of the series is :: 1.787302
Process finished.

5)import java.util.Scanner;

```
public class DemoTranslation {
public static void main(String[] args) {
int n;
float sum;
int count;



System.out.print("\nEnter total number of terms :: ");
n = STDIN_SCANNER.nextInt();


sum = 0.0f;


count = 1;
for(int i = 1; i <= n; i++) {
sum = sum + (float)Math.pow(count, 2) / (float)Math.pow(count, 3);
count += 2;
}

System.out.printf("\nSum of the series is :: %f\n", sum);
}

public final static Scanner STDIN_SCANNER = new Scanner(System.in);
}
```

Output: