July-31 Assignment

Question1:

```
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:T. Iswarya\nSAP ID:51834773");
      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


Terminal
Author:T. Iswarya
SAP ID:51834773
Enter first Height:
Enter feet: 4
Enter inches: 3
Enter second Height:
Enter feet: 6
Enter inches: 5
Total Height is:
Feet: 10 Inches: 8
Process finished.

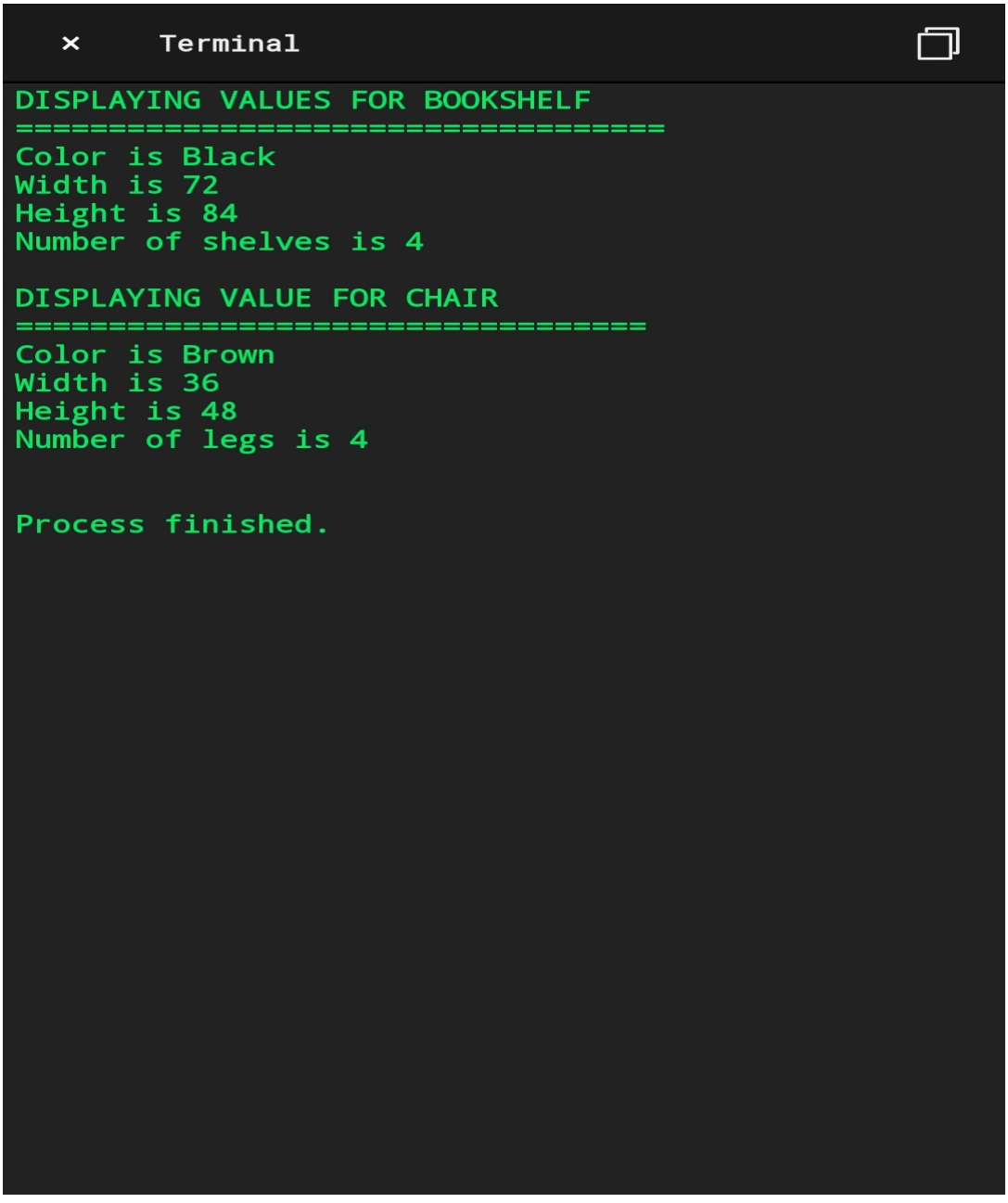
Question 2

```
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:


Terminal
DISPLAYING VALUES FOR BOOKSHELF
==========
Color is Black
Width is 72
Height is 84
Number of shelves is 4
DISPLAYING VALUE FOR CHAIR
==========
Color is Brown
Width is 36
Height is 48
Number of legs is 4
Process finished.

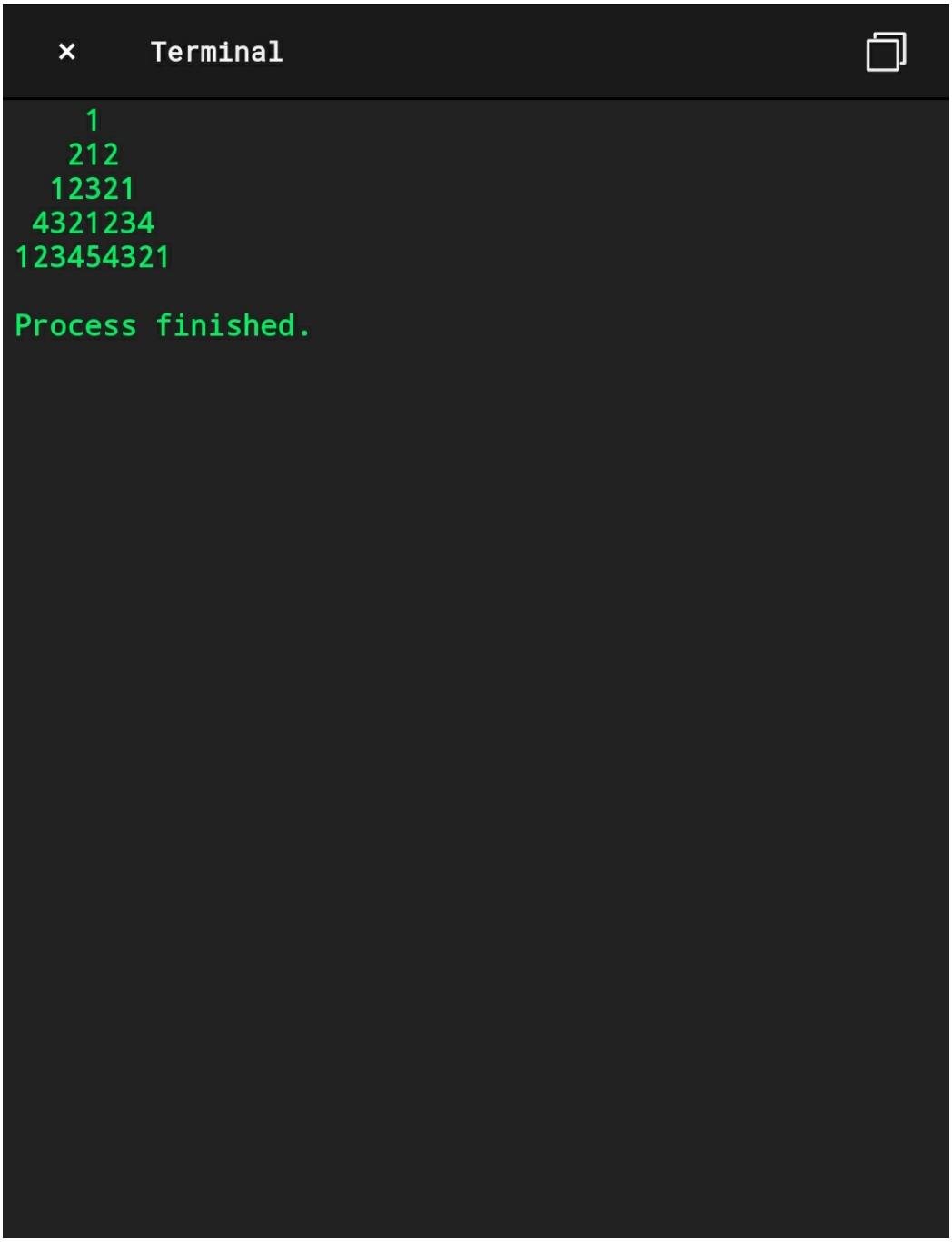
Question 4

```
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



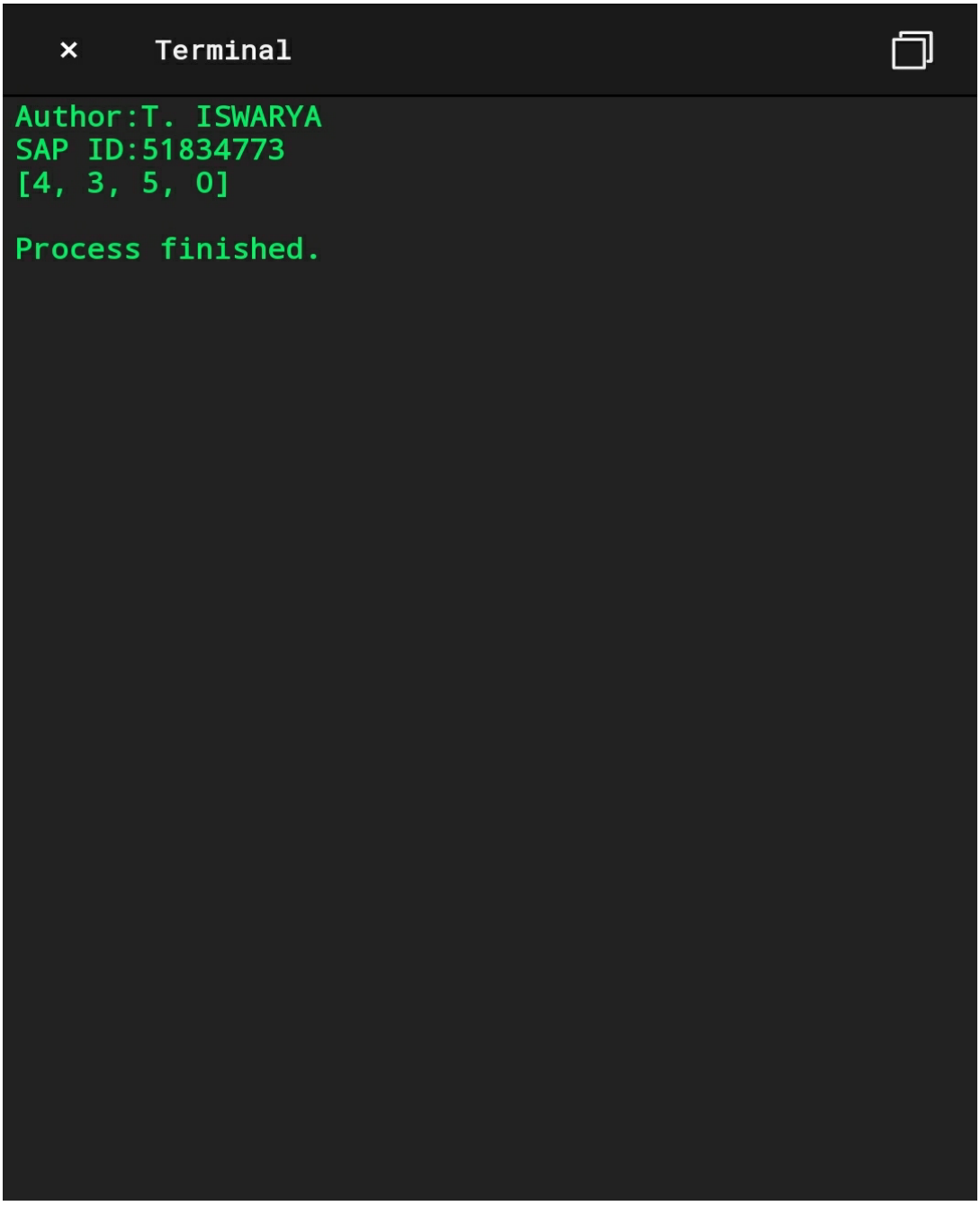
Question 3

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 = { 2, 4, 2, 2, 3, 2, 5, 0 };
    int key = 2;

    x = remove(x, key);
    System.out.println("Author:T. ISWARYA\nSAP
ID:51834773");
    System.out.println(Arrays.toString(x));
  }
}
```

Output:


Terminal
Author:T. ISWARYA
SAP ID:51834773
[4, 3, 5, 0]
Process finished.