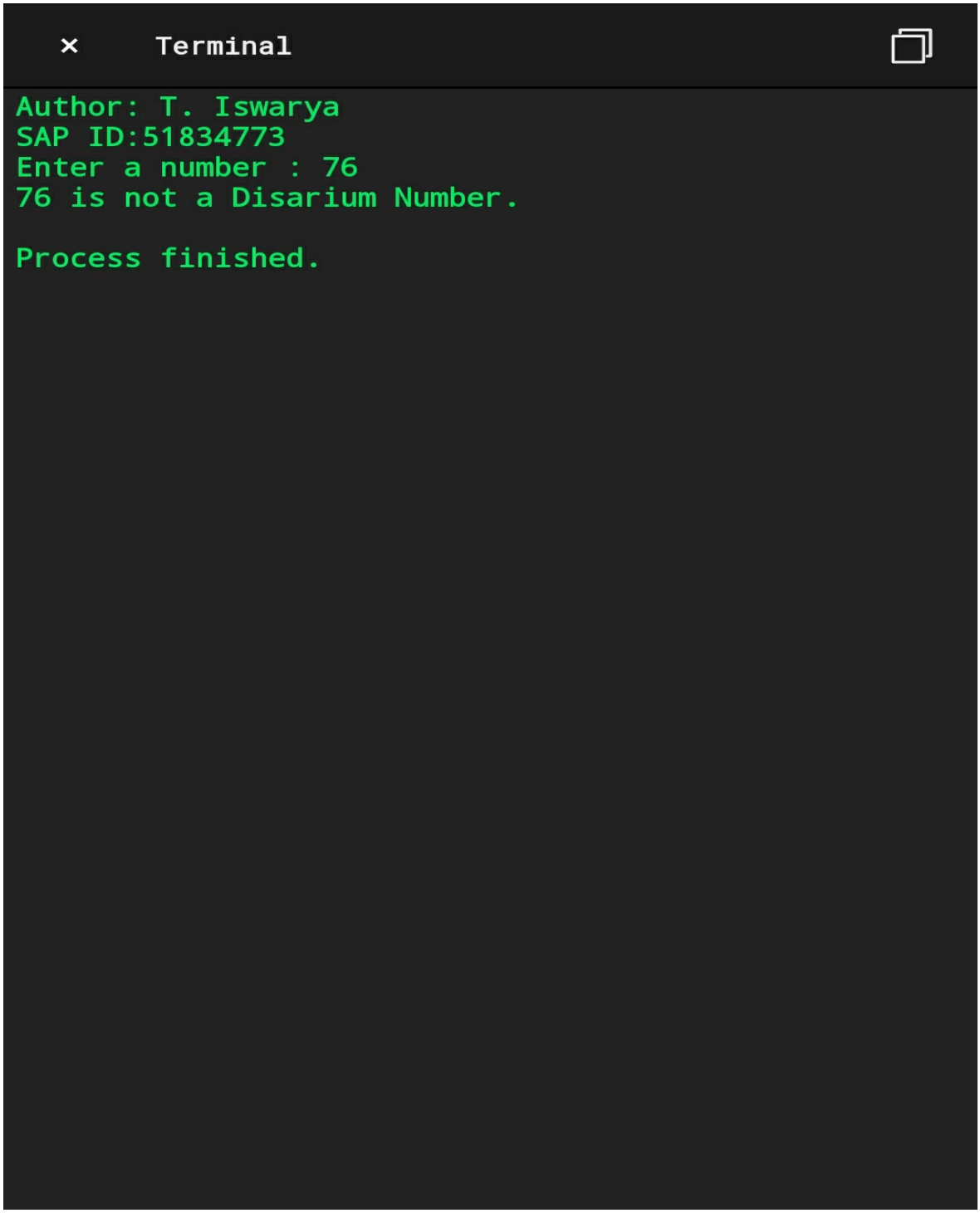
July-23 Assignment

Question1:

```
import java.io.*;
public class Main
   {
    public static void main(String[] args)throws
IOException
        {
            BufferedReader br=new BufferedReader
(new InputStreamReader(System.in));
            System.out.println("Author: T.
Iswarya\nSAP ID:51834773");
            System.out.print("Enter a number : ");
            int n = Integer.parseInt(br.readLine());
            int copy = n, a = 0, sum = 0;
            String b = Integer.toString(n);
            int len = b.length();
```

```
            while(copy>0)
            {
                a = copy % 10;
                sum = sum + (int)Math.pow(a,len);
                len--;
                copy = copy / 10;
            }

            if(sum == n)
                System.out.println(n+" is a Disarium
Number.");
            else
                System.out.println(n+" is not a
Disarium Number.");
        }
    }
```

Output:



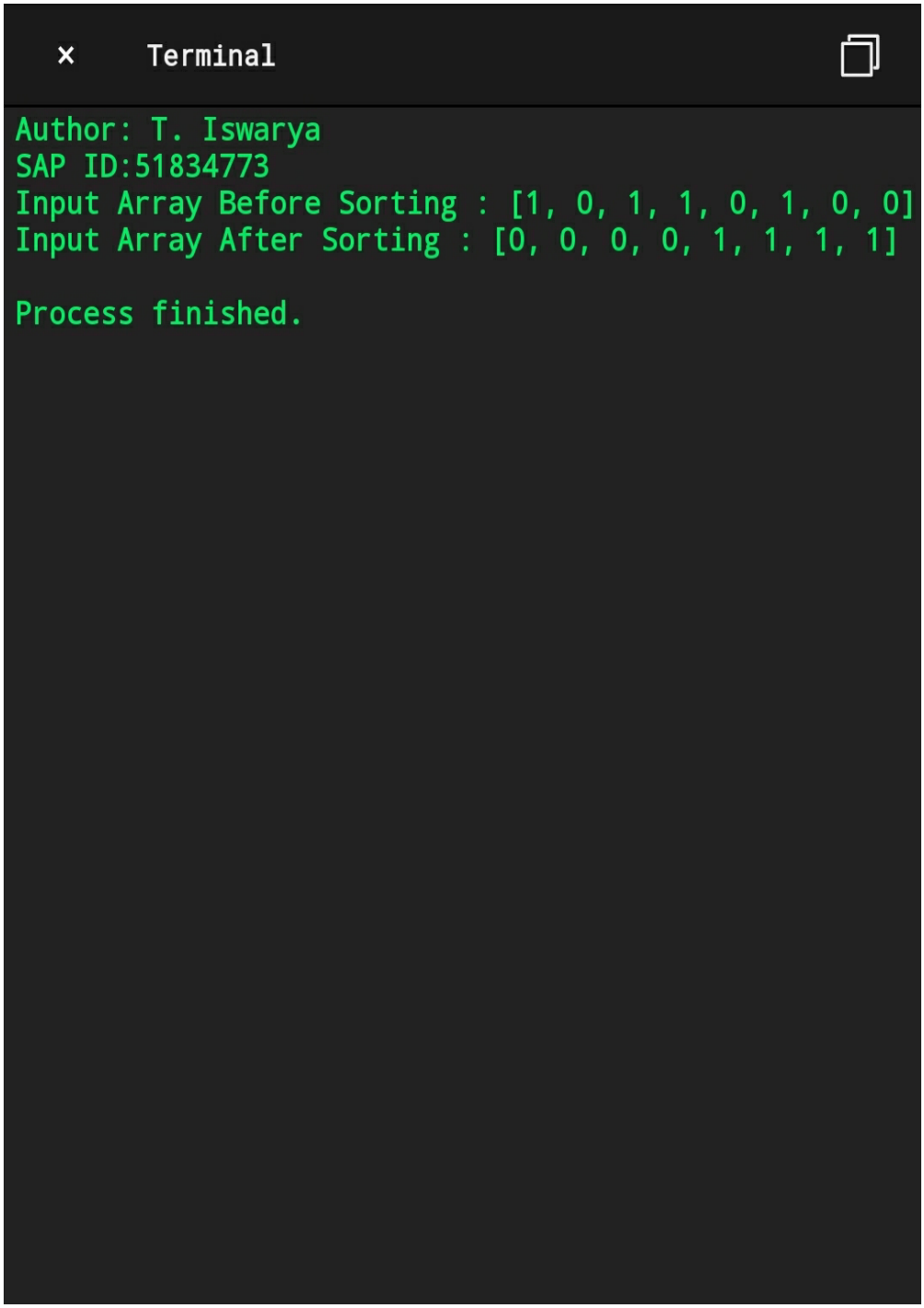
Question2:

```
import java.util.Arrays;


public class Main
{
  private static void sortBinaryArray(int[] inputArray)
  {
    int zeroCount = 0;


    System.out.println("Author: T. Iswarya\nSAP ID:51834773");
    System.out.println("Input Array Before Sorting : "+Arrays.toString(inputArray));



    for (int n = 0; n < inputArray.length; n++)
    {
```

```
        if (inputArray[n] == 0)
        {
          zeroCount++;
        }
      }


      for (int n = 0; n < zeroCount; n++)
      {
        inputArray[n] = 0;
      }


      for (int n = zeroCount; n < inputArray.length;
n++)
      {
        inputArray[n] = 1;
```

```
        }

        System.out.println("Input Array After Sorting :
"+Arrays.toString(inputArray));
    }

    public static void main(String[] args)
    {
      sortBinaryArray(new int[] {1, 0, 1, 1, 0, 1, 0, 0});
    }
  }
```

Output:



Question 3:

```
public class Main
{
static int replaceDigit(int a, int
numbertobereplaced,
                int replacingnumber)
{
  int result = 0, multiply = 1;

  while (a % 10 > 0)
  {

    int remainder = a % 10;

    if (remainder == numbertobereplaced)
      result = result + replacingnumber * multiply;
```

```
        else
          result = result + remainder * multiply;

        multiply *= 10;
        a = a / 10;
      }
      return result;
    }

    public static void main(String[] args)
    {
      int a = 945, numbertobereplaced = 9,
replacingnumber = 5;
      System.out.println("Author:T. Iswarya\nSAP
ID:51834773");
      System.out.println(replaceDigit(a,
numbertobereplaced, replacingnumber));
    }
```

```
}
```

Output:

Question 5:

```
public class Main
{
  public static int binarySearch(int[] M, int left,
int right, int n)
  {
    if (left > right) {
      return -1;
    }


    int mid = (left + right) / 2;


    if (n == M[mid]) {
      return mid;
    }
```

```
  else if (n < M[mid]) {
    return binarySearch(M, left, mid - 1, n);
  }

  else {
    return binarySearch(M, mid + 1, right, n);
  }
}

public static void main(String[] args)
{
  int[] M = { 2, 5, 8, 12, 14, 16 };
  int key = 8;

  int left = 0;
  int right = M.length - 1;
```

```
        int index = binarySearch(M, left, right, key);


        System.out.println("Author:T. Iswarya\nSAP ID: 51834773");
        if (index != -1) {
          System.out.println("Element found at index " + index);
        } else {
          System.out.println("Element not found in the array");
        }
      }
    }
```

Output: