1.

```
1   import java.io.*;
2   public class Main
3      {
4      public static void main(String[] args)throws IOException
5         {
6            BufferedReader br=new BufferedReader (new InputS
7            System.out.println("Author: P.JaganMohan\nSAP ID:518
8            System.out.print("Enter a number : ");
9            int n = Integer.parseInt(br.readLine());
10           int copy = n, a = 0, sum = 0;
11           String b = Integer.toString(n);
12           int len = b.length();
13
14           while(copy>0)
15           {
16              a = copy % 10;
17              sum = sum + (int)Math.pow(a,len);
18              len--;
19              copy = copy / 10;
20           }
21
22           if(sum == n)
23              System.out.println(n+" is a Disarium Number.");
24           else
25              System.out.println(n+" is not a Disarium Number.");
26        }
27     }
```

```
×    Terminal
Author: P.JaganMohan
SAP ID:51834796
Enter a number : 175
175 is a Disarium Number.

Process finished
```

2.

```
1   import java.util.Arrays;
2
3   public class Main
4   {
5       private static void sortBinaryArray(int[] inputArray)
6       {
7           int zeroCount = 0;
8
9           System.out.println("Author: P.JaganMohan\nSAP ID:51
10          System.out.println("Input Array Before Sorting : "+Arr
11
12
13          for (int n = 0; n < inputArray.length; n++)
14          {
15              if (inputArray[n] == 0)
16              {
17                  zeroCount++;
18              }
19          }
20
21
22          for (int n = 0; n < zeroCount; n++)
23          {
24              inputArray[n] = 0;
25          }
26
27
28          for (int n = zeroCount; n < inputArray.length; n++)
29          {
30              inputArray[n] = 1;
31          }
32
33          System.out.println("Input Array After Sorting : "+Arra
34      }
35
36      public static void main(String[] args)
37      {
38          sortBinaryArray(new int[] {1, 0, 1, 1, 0, 1, 0, 0});
39      }
40  }
```

```
Terminal
Author: P.JaganMohan
SAP ID:51834796
Input Array Before Sorting : [1, 0, 1, 1, 0, 1, 0, 0]
Input Array After Sorting : [0, 0, 0, 0, 1, 1, 1, 1]

Process finished
```

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 = 77986, numbertobereplaced = 6, replacingnumber
    System.out.println("Author: P.JaganMohan\nSAP ID:51834
    System.out.println(replaceDigit(a, numbertobereplaced, re
}
}
```

```
Terminal
Author: P.JaganMohan
SAP ID:51834796
77985

Process finished.
```

5.

```java
public class Main
{
    public static int binarySearch(int[] M, int left, int right, int
    {
        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, 6, 8, 9, 10 };
        int key = 9;

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

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

        System.out.println("Author: P.Jaganmohan\nSAP ID: 51
        if (index != -1) {
            System.out.println("Element found at index " + inde
        } else {
            System.out.println("Element not found in the array
        }
    }
```

Terminal

```
Author: P.Jaganmohan
SAP ID: 51834796
Element found at index 4

Process finished.
```