

Binary Counting

```

1  import java.math.BigInteger;
2  public class C2_BinaryCounting{
3      static String numStr="";
4      public static void main(String[] args) {
5          String input="3333333";
6          System.out.println(solver(input));
7      }
8
9      public static String binary(String input){
10         StringBuilder output = new StringBuilder();
11         for (int i = 0; i < input.length(); i++) {
12             int ascii = (int) input.charAt(i);
13             String binary = Integer.toBinaryString(ascii);
14             binary = String.format("%8s", binary).replace(' ', '0');
15             output.append(binary);
16         }
17         return output.toString();
18     }
19
20     public static String reducer(String input, int base){
21         int n=0;
22         while (true) {
23             String candidate = Integer.toString(n, base);
24             int first=input.indexOf(candidate);
25             if (first == -1) {
26                 numStr = candidate;
27                 break;
28             }
29
30             input = input.substring(0, first) + input.substring(first + candi
date.length());
31             int last = input.lastIndexOf(candidate);
32             if(last != -1 && last != first){
33                 input = input.substring(0,last)+input.substring(last+candidat
e.length());
34             }
35             n++;
36         }
37         return input;
38     }
39
40     public static long solver(String input){
41         String initial = binary(input);
42         String reduced_1 = reducer (initial, 2);
43         String reduced_1_octal = new BigInteger(reduced_1, 2).toString(8);
44         //String reduced_1_octal=Long.toOctalString(Long.parseLong(reduced_1_
noSpaces,2));
45         numStr="";
46         reducer(reduced_1_octal, 8);

```

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47         if(numStr.equals("")){  
48             return -1;  
49         }  
50         long result=Long.parseLong(numStr, 8);  
51         return result-1;  
52     }  
53  
54 }
```