2002/2003 SOUTHERN CALIFORNIA REGIONAL
ACM INTERNATIONAL COLLEGIATE PROGRAMMING CONTEST

Problem 0
Unary Numbers

What could be simpler than binary numbers? Unary numbers! A Unary number, $n > 0$, is coded as n-1 one bits followed by a zero bit. Thus the code for 5 is 11110. Here are some unary numbers.

decimal	*unary*
1	0
2	10
3	110
4	1110
5	11110
6	111110
7	1111110

Input consists of decimal numbers, one per line, with no leading or trailing whitespace. Each number will be in the range 1–76. Input is terminated by end-of-file.

For each number, produce a single line of output consisting of the input decimal number, with no leading zeros or spaces, a single space, and the unary equivalent with no leading or trailing spaces.

Sample Input

```
76
37
5
28
14
8
1
```

Sample Output

```
76 1111111111111111111111111111111111111111111111111111111111111111111111111110
37 1111111111111111111111111111111111110
5 11110
28 11111111111111111111111111110
14 11111111111110
8 11111110
1 0
```