**Problem 1. Digits**

Ivancho knows how important the powers of two are. Therefore, he decided to write down the powers of two on a paper, one after another. The sequence starts with 1 and ends with 2^60. Now Ivancho has 583 digits, attached one after another. He wants to know which is the digit on position with number K. The numeration starts from 1.

**Input**: On a single line of the input file **digits.in** will be written K.

**Output**: The output file **digits.out** must contain a single digit – the digit on Kth position in the sequence.

**Constraints:**

1 K583

**TIME LIMIT – 2 sec**

**Note**: You can scan from a file and print into a file by using an operator for that. You can use operator freopen including fstream library and adding the following two lines in the beginning of your main function:

freopen ( "digits.in", "r", stdin );

freopen ( “digits.out”, “w” , stdout );

**Example:**

|  |  |
| --- | --- |
| **digits.in** | **digits.out** |
| 11 | 1 |