## Problem 5 - Wave Bits

Did you know that you can find waves in bits? They are sequences such as 1010101 (bits going up and down) which **always** start and end with 1. This is the binary representation of **1397221**. There are two wave sequences in it. The first one is nine bits long and the second – only three.

00000000000**101010101**000111100**101**

Your task is to find the longest of those sequences. After that, you have to delete it. In the current example, the resulting number would be

00000000000000000000000111100**101**

Its decimal representation is **485**. If there are **several wave sequences of equal length**, delete the **rightmo**st and do **not** touch the others!

Deleting the bits means removing them completely from the number, not setting them to zeroes! See the examples below to understand your task better.

Write a program that does the described operations and prints the resulting number on the console.

### Input

On the only line of input, you will receive a single integer number.

The input will always be valid and in the format described, there is no need to check it explicitly.

### Output

There is only line of output.

Print the decimal representation of the number after you delete the longest wave in it. If no such number is found, print “No waves found!”

### Constraints

* The number will be an integer in range [0.. 18,446,744,073,709,551,615]
* There cannot be negative numbers in the input or output!
* Allowed working time: 0.1 seconds. Allowed memory: 16 MB.

### Examples

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 66408933 | 127461 | 11111**101010101**000111100101 – We remove the wave bits and pad the number with a few zeroes to the left. The obtained number is  00000000011111000111100101 -> 127461 |

|  |  |  |
| --- | --- | --- |
| **Input** | **Output** | **Comments** |
| 67105255 | No waves found! | Binary representation of **67105255:**  11111111111111000111100111. There are no waves in it. |