Problem 660: Remove 9

Problem Information

Difficulty: Hard
Acceptance Rate: 57.41%
Paid Only: Yes
Tags: Math

Problem Description

Start from integer `1`, remove any integer that contains `9` such as `9`, `19`, `29`...

Now, you will have a new integer sequence `[1, 2, 3, 4, 5, 6, 7, 8, 10, 11, ...]`.

Given an integer `n`, return _the_ `nth` (**1-indexed**) integer in the new sequence.

Example 1:

Input: n = 9 **Output:** 10

Example 2:

Input: n = 10 **Output:** 11

Constraints:

* `1 <= n <= 8 * 108`

Code Snippets

C++:

```
class Solution {
public:
int newInteger(int n) {
```

```
}
};
```

Java:

```
class Solution {
public int newInteger(int n) {

}
}
```

Python3:

```
class Solution:
def newInteger(self, n: int) -> int:
```