Problem 1742: Maximum Number of Balls in a Box

Problem Information

Difficulty: Easy
Acceptance Rate: 74.56%
Paid Only: No
Tags: Hash Table, Math, Counting

Problem Description

You are working in a ball factory where you have `n` balls numbered from `lowLimit` up to `highLimit` **inclusive** (i.e., `n == highLimit - lowLimit + 1`), and an infinite number of boxes numbered from `1` to `infinity`.

Your job at this factory is to put each ball in the box with a number equal to the sum of digits of the ball's number. For example, the ball number `321` will be put in the box number `3 + 2 + 1 = 6` and the ball number `10` will be put in the box number `1 + 0 = 1`.

Given two integers `lowLimit` and `highLimit`, return _the number of balls in the box with the most balls._

Example 1:

Input: lowLimit = 1, highLimit = 10 **Output:** 2 **Explanation:** Box Number: 1 2 3 4 5 6 7 8 9 10 11 ... Ball Count: 2 1 1 1 1 1 1 1 1 0 0 ... Box 1 has the most number of balls with 2 balls.

Example 2:

Input: lowLimit = 5, highLimit = 15 **Output:** 2 **Explanation:** Box Number: 1 2 3 4 5 6 7 8 9 10 11 ... Ball Count: 1 1 1 1 2 2 1 1 1 0 0 ... Boxes 5 and 6 have the most number of balls with 2 balls in each.

Example 3:

Input: lowLimit = 19, highLimit = 28 **Output:** 2 **Explanation:** Box Number: 1 2 3 4 5 6 7 8 9 10 11 12 ... Ball Count: 0 1 1 1 1 1 1 1 2 0 0 ... Box 10 has the most number of balls with 2 balls.

Constraints:

* `1 <= lowLimit <= highLimit <= 105`

Code Snippets

C++:

```
class Solution {
public:
int countBalls(int lowLimit, int highLimit) {

}
};
```

Java:

```
class Solution {
public int countBalls(int lowLimit, int highLimit) {

}
}
```

Python3:

```
class Solution:
def countBalls(self, lowLimit: int, highLimit: int) -> int:
```