6109. Number of People Aware of a Secret

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On day `1`, one person discovers a secret.

You are given an integer `delay`, which means that each person will **share** the secret with a new person **every day**, starting from `delay` days after discovering the secret. You are also given an integer `forget`, which means that each person will **forget** the secret `forget` days after discovering it. A person **cannot** share the secret on the same day they forgot it, or on any day afterwards.

Given an integer `n`, return *the number of people who know the secret at the end of day* `n`. Since the answer may be very large, return it **modulo** $10^9 + 7$.

User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Medium

Example 1:

```
Input: n = 6, delay = 2, forget = 4
Output: 5
Explanation:
Day 1: Suppose the first person is named A. (1 person)
Day 2: A is the only person who knows the secret. (1 person)
Day 3: A shares the secret with a new person, B. (2 people)
Day 4: A shares the secret with a new person, C. (3 people)
Day 5: A forgets the secret, and B shares the secret with a new person, D. (3 people)
Day 6: B shares the secret with E, and C shares the secret with F. (5 people)
```

Example 2:

```
Input: n = 4, delay = 1, forget = 3
Output: 6
Explanation:
Day 1: The first person is named A. (1 person)
Day 2: A shares the secret with B. (2 people)
Day 3: A and B share the secret with 2 new people, C and D. (4 people)
Day 4: A forgets the secret. B, C, and D share the secret with 3 new people. (6 people)
```

Constraints:

- `2 <= n <= 1000`
- `1 <= delay < forget <= n`

JavaScript

```javascript
const mod = 1e9 + 7;

const peopleAwareOfSecret = (n, delay, forget) => {
    let dp = Array(n + 1).fill(0), res = 0;
    dp[1] = 1;
    for (let d = 2; d <= n; d++) {
        for (let i = 1; i < d; i++) {
            if (d - i >= delay && d - i < forget) {
                dp[d] += dp[i];
                dp[d] %= mod;
            }
        }
    }
    for (let i = 1; i <= n; i++) {
        if (n - i < forget) res = (res + dp[i]) % mod;
    }
    return res;
};
```

Custom Testcase Use Example Testcases

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Submission Result: Accepted (/submissions/detail/737152121/) More Details (/submissions/detail/737152121/)

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