1230. Toss Strange Coins Premium

Medium | Topics | Companies | Hint

You have some coins. The `i`-th coin has a probability `prob[i]` of facing heads when tossed.

Return the probability that the number of coins facing heads equals `target` if you toss every coin exactly once.

Example 1:

```
Input: prob = [0.4], target = 1
Output: 0.40000
```

Example 2:

```
Input: prob = [0.5,0.5,0.5,0.5,0.5], target = 0
Output: 0.03125
```

Constraints:

- `1 <= prob.length <= 1000`
- `0 <= prob[i] <= 1`
- `0 <= target <= prob.length`
- Answers will be accepted as correct if they are within `10^-5` of the correct answer.

Seen this question in a real interview before? 1/5

Yes No

Accepted 21.5K | Submissions 37K | Acceptance Rate 58.2%

Topics

Array Math Dynamic Programming Probability and Statistics

Companies

0 - 6 months

Twitch 2

Hint 1

What about solving the problem with DP?

Hint 2

Use DP with two states dp[pos][cnt], where pos represents the pos-th coin and cnt is the number of heads seen so far.

Hint 3

You can do the transitions with a little bit math.

Hint 4

For the base case, when pos == n return (cnt == target) to filter out the invalid scenarios.

Discussion (9)