

Candy

For this problem we need to distribute candies according to two rules:

1. Every child must have at least 1 candy.
2. Children with higher ratings than their neighbors must get more candies.

We must minimize the total candies distributed.

[Key Idea: Two-Pass Greedy:]

Steps: 1. Initialize all candies to 1 (minimum requirement)

2. Left to right pass:

- If $\text{rating}[i] > \text{rating}[i-1]$, give candies $[i] = \text{candies}[i-1] + 1$

3. Right to left pass:

- If $\text{rating}[i] > \text{rating}[i+1]$, ensure $\text{candies}[i] = \max(\text{candies}[i], \text{candies}[i+1] + 1)$.

4. Sum candies.

[Complexity:]

Time: $O(n)$ (two passes)

Space: $O(n)$ (candies array) - can be optimized to $O(1)$ but more complex