

Coding Interview Question

Coding Interview Question: Robot Battery Management System

Problem Statement

You are managing a fleet of 5 robots with varying battery levels:

- 2 robots at 20% battery
- 2 robots at 40% battery
- 1 robot at 10% battery

Preferred language : c++/Python

Constraints

- Discharging rate: 1% per second
- Charging rate: 1.5% per second
- Available charging spots: 2
- Goal: Maintain at least 3 robots with a minimum of 20% battery charge
- Consider distance for all the robot to all the charging station is same.

Challenge Requirements

Implement an algorithm that:

1. Prioritizes charging robots with the lowest battery levels
2. Ensures continuous robot operation
3. Minimizes total charging time
4. Maximizes battery efficiency

Evaluation Criteria

- Coding style.
- Time complexity.
- Space efficiency.
- Handling edge cases.
- Charging optimization strategy.
- Documentation

of the code and algorithm.