Technical Interview Takeaway Assignment: Fleet Management

Objective

Your challenge is to design and implement a simulation of a fleet management system, showcasing your strengths in back-end development and system design. The task is intentionally open-ended to allow you to demonstrate your creativity and problem-solving skills in these areas.

The Challenge

You are tasked with creating two key components of a fleet management system: an API Server and a Remote Agent. This challenge will test your ability to build robust and scalable back-end systems, as well as your understanding of client-server interactions.

- **API Server**: Design and implement a server that manages commands and responses for a fleet of remote agents. This server should handle requests to post commands to specific agents and retrieve responses.
- **Remote Agent**: Develop a remote agent that can execute commands received from the API server. This agent should be capable of simulating command execution and communicating results back to the server.

While your main focus will be on these two components, you should also provide a conceptual overview of how they fit into a larger fleet management system. Explain your design and architecture choices, and how you would scale this system to manage a larger number of agents.

Expectations

This challenge is designed to reflect real-world software development scenarios:

1. **Creativity and Problem-Solving**: There are multiple ways to approach this challenge. We are interested in your unique problem-solving methods and creative solutions.
2. **System Design**: Even if you focus on specific components, we want to understand your vision for the overall system and how your components integrate within it.
3. **Communication**: Be prepared to discuss your architectural choices, how you handle potential system bottlenecks and scalability, and your general approach to software development.
4. **Resourcefulness**: Feel free to use any external libraries, frameworks, and resources. We value your ability to utilise available tools to solve complex problems effectively.

Submission

Submit your work through a GitHub repository link. Ensure that your repository includes thorough documentation for setting up and running your applications, as well as a detailed explanation of your system's architecture. We look forward to your innovative approach to this challenge. Good luck!