CS166 Final Project Proposal

https://github.com/cesar-ca/cs166-modeling-and-analysis/tree/main/CS166%20Final%20Project%20Proposal

I choose to do Waste Removal for Final Project.

A waste removal company has a truck (or a few trucks) and needs to visit farms, collecting waste and dropping it off at one or more waste sites in the area. There is a road system, represented by a network, that connects the farms, the waste removal company, and the waste drop-off sites. Edge weights in the network represent the length of each road. Different farms have different average rates of waste production, but it is not fully deterministic so there will be more waste on some days than others. The task is to determine a good collection schedule and route for the waste removal company given the uncertainty in the network. There is a possibility that a farm might have no or very little waste.

Assumptions

- Each truck has a finite capacity for carrying waste.

- Each truck has a finite fuel supply. When it is running low on fuel, it needs to return to the company headquarters to refuel.

- The waste removal company wants to optimize for time and profit by driving between farms as little as possible and conserving fuel.

- A truck might drive to another farm, wait at the current farm (using time but not fuel), go to a waste drop off site, or return to the company headquarters where it can refuel.