Routing in Package Delivery Systems

Swarnalatha Natarajan
swna2675@colorado.edu

Vignesh Karthikeyan
vika7879@colorado.edu

1 Objective

The objective is to find the cost-minimizing movement of packages from their origins to their destinations using a limited number of resources, such that service commitments are satisfied. This results in potential savings in annual operating costs , reductions in the fleet size required, decreases in the time required to develop operating plans, and scenario analysis capabilities for planners and analysts. Our goal is to develop models and solution procedures so that quality solutions can be generated and strategic planning issues can be analyzed rigorously.

2 Our approach

Initially, we plan to analyse Routing Problems, the existing approaches to solve them and compare their complexities. Further, we plan to implement one of these approaches on a dataset consisting of attributes such as source, destinations, hub locations, costs, resources etc. We also look forward to exploring Google OR-Tools and translating the Routing Problem accordingly.

3 Deliverable

We plan on presenting the project in the form of a recorded video, demonstrating the working of the routing algorithm and its computational results.

References

[1] https://pubsonline.informs.org/doi/10.1287/trsc.33.4.391

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[3] https://link.springer.com/article/10.1007/s12046-018-1048-y

[4] https://developers.google.com/optimization/routing/vrp