Development of Multimodal Transportation Optimization System

Abstract:

This project is aimed at developing a Optimization System for transportation which offers numerous benefits, including enhanced connectivity, reduced congestion, lower costs, improved logistics, and increased sustainability for our clients.

Why is it needed?

One of the key advantages of multimodal transportation is its ability to leverage the strengths of different modes of transport. For example, rail transport is efficient for long-distance haulage of bulky goods, while trucks are more flexible and accessible for door-to-door deliveries. By integrating these two modes, goods can be transported economically over long distances and then distributed locally. Similarly, water transport, with its large carrying capacity, is ideal for bulk shipments, and air transport provides high-speed connections for time-sensitive goods or perishable items. By combining these modes strategically, multimodal transportation optimizes the use of resources and infrastructure, leading to improved efficiency.

Actors:

Customer: Submits shipment requests

Shipper: Shipper is the shipping/logistics arm of the organization that wants to move goods. They manage multimodal shipments.

Carrier: Carrier provides the actual transportation services either within a mode (like trucking) or multimodal (shipping line). They manage transportation assets and capacity.

Network Planner: Maintains transportation network data

System Admin: Manages system configuration and access

Use Cases:

Customer:

Submit shipment request

Shipper

Manage shipment requests

Optimize shipments

Execute shipments

Carrier:

Manage transportation orders

Network Planner:

Manage network data

System Admin:

User and access management

Use Case Diagram: