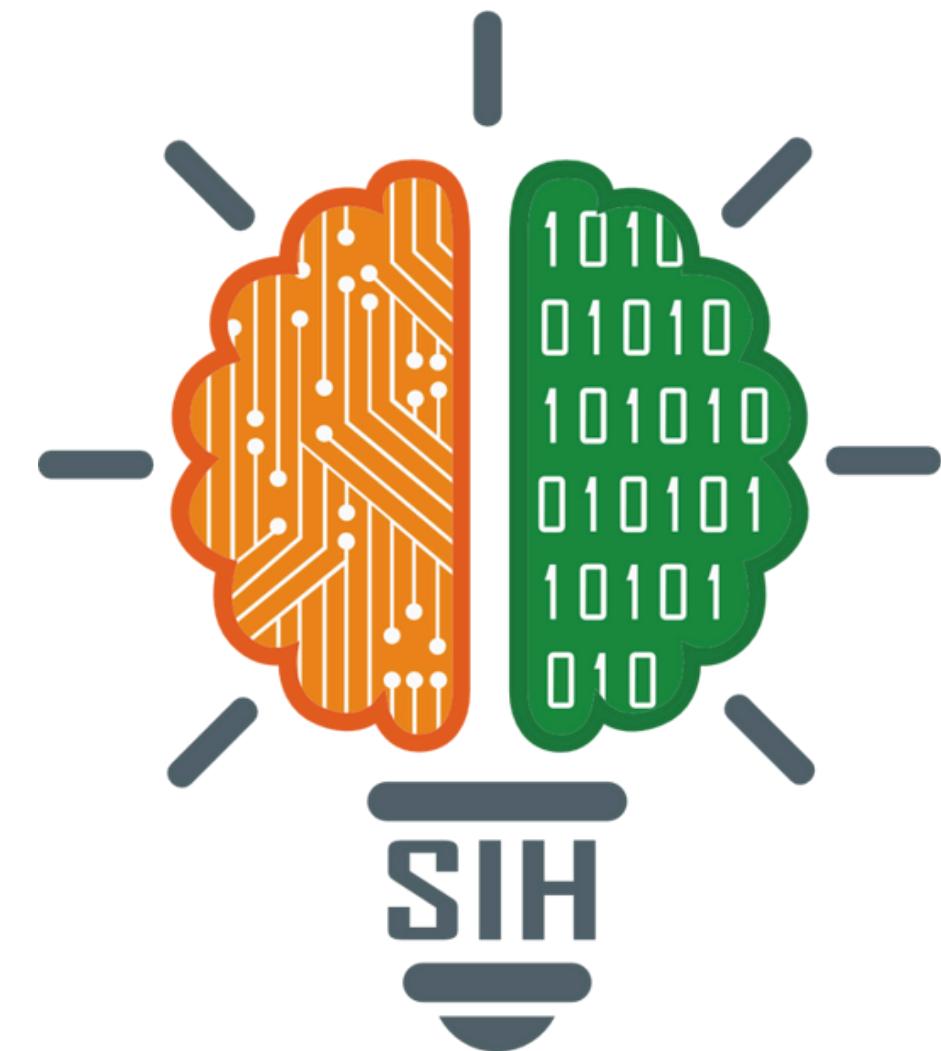


# SMART INDIA HACKATHON 2024

- **Problem Statement ID – SIH1753**
- **Problem Statement Title-** Road Transport Network Telematics . Develop a telematics solution to enable efficient trucking operations for the long haul to connect the country through route optimization, live tracking and monitoring, optimal capacity utilization analysis and to enable appropriate response.
- **Theme-** Transportation & Logistics
- **PS Category-** Software
- **Team Name -** Xtractors



# PROPOSED SOLUTION

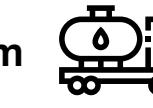
**OBJECTIVE:** To develop a comprehensive telematics system to enhance the operational efficiency and capacity utilization of long-haul trucking. This will be achieved by integrating advanced route optimization, real-time tracking, and dynamic load management, thereby streamlining the All India Road Transport Network for optimal performance and reduced environmental impact.

## IN A STEP-WISE MANNER

① Web application -> Fleet owners and Clients

② PHASE 1:  
FOR FLEET OWNERS :

Fleet owners have authority to --->

1. ROUTE OPTIMIZATION --> By using Dijkstra's Algorithm 
2. CHECKING TRUCK AVAILABILITY --> By Using Scheduling Algorithm 
3. SECURITY --> By Using RFID or QR code Algorithms 
4. CAPACITY UTILIZATION --> By Using FFD ( First Fit Decreasing ) Algorithm 

PHASE 2 :

FOR CLIENTS :

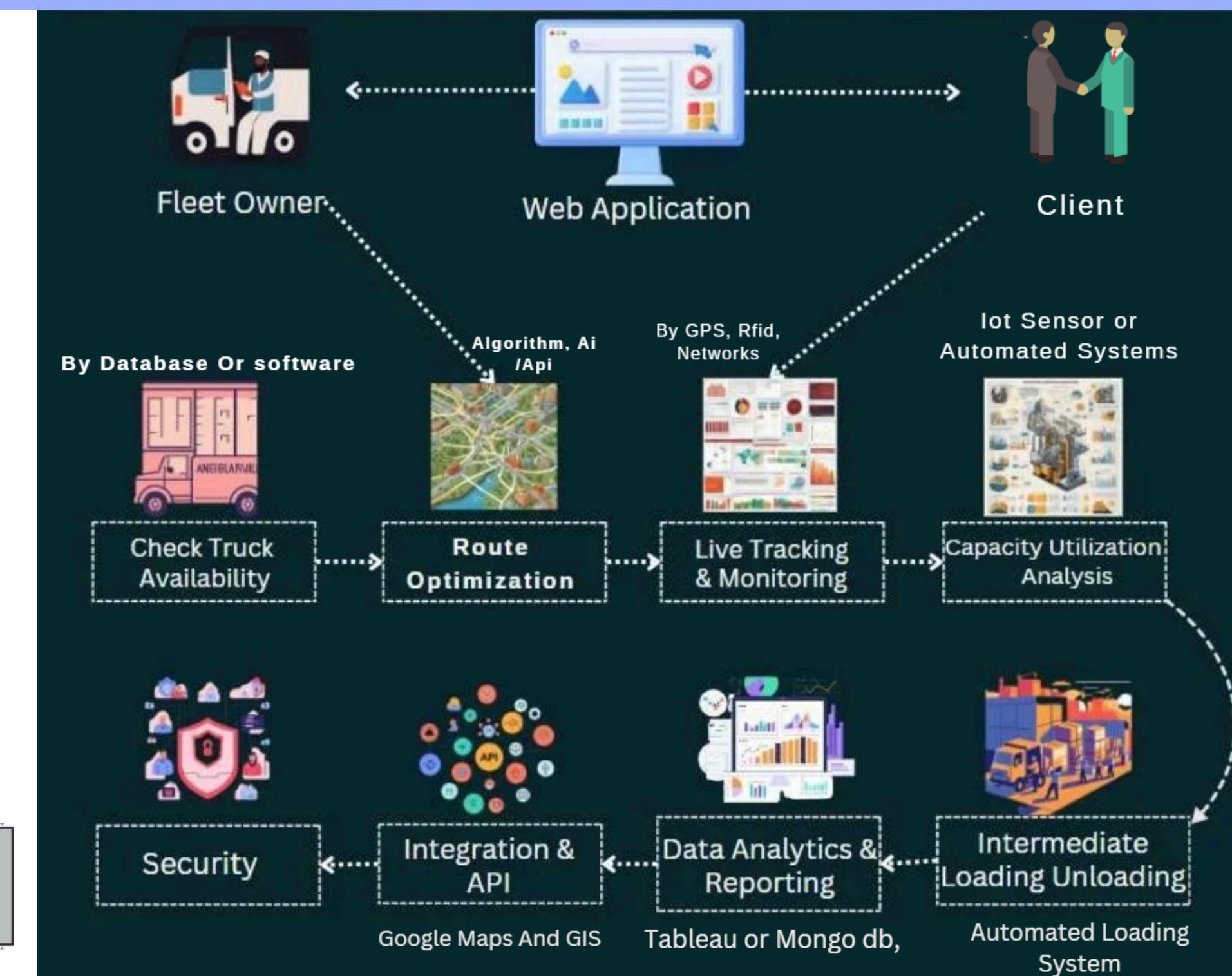
Clients have authority to --->

1. LIVE TRACKING --> By Using Geofencing Algorithm 
2. SECURITY --> By Using RFID or QR code Algorithms
3. CAPACITY UTILIZATION --> By Using FFD ( First Fit Decreasing ) Algorithm
4. ROUTE OPTIMIZATION --> By using Dijkstra's Algorithm 

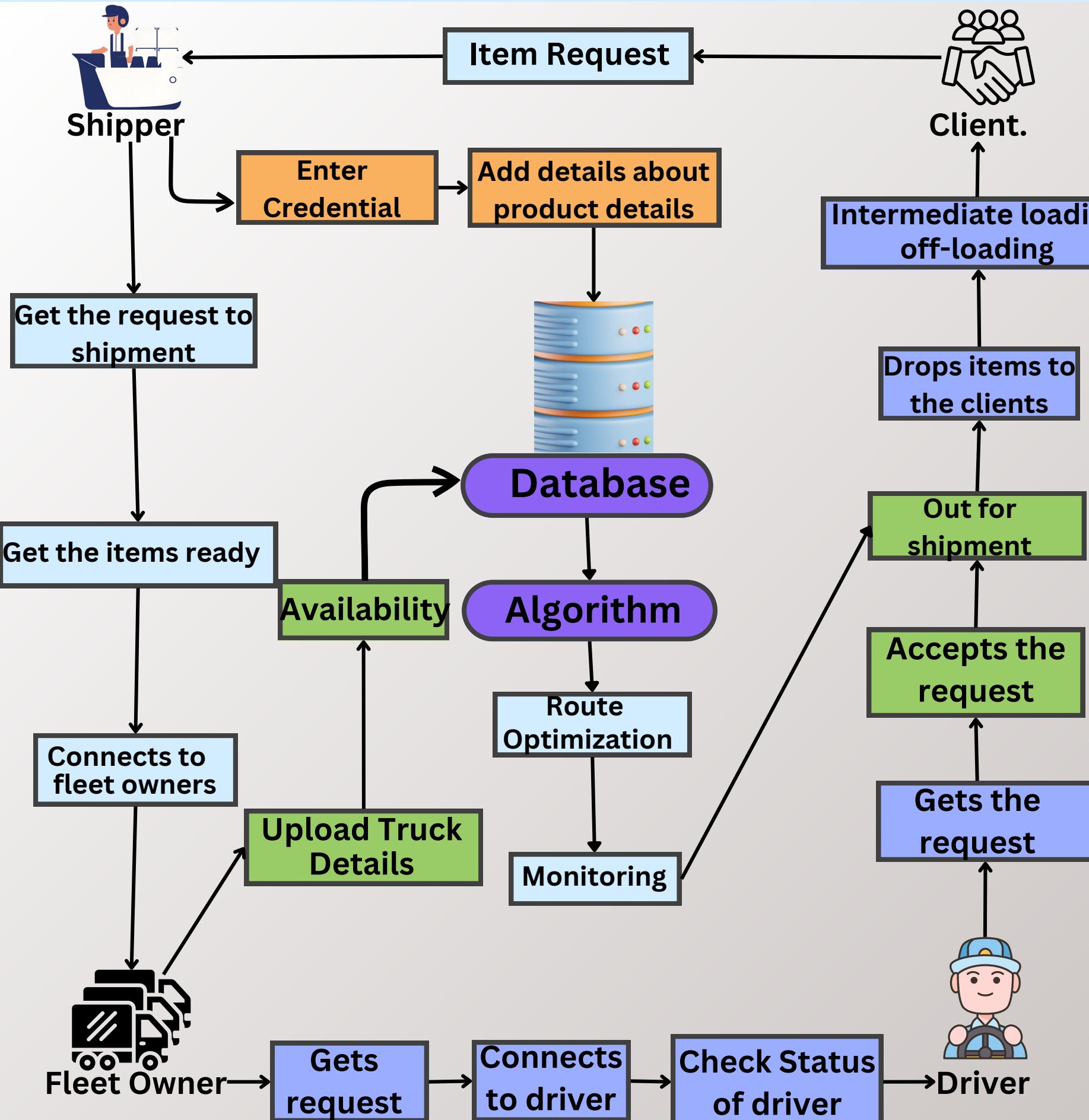
③ Common Functionalites -->  
Real -time notifications , Data Analytics



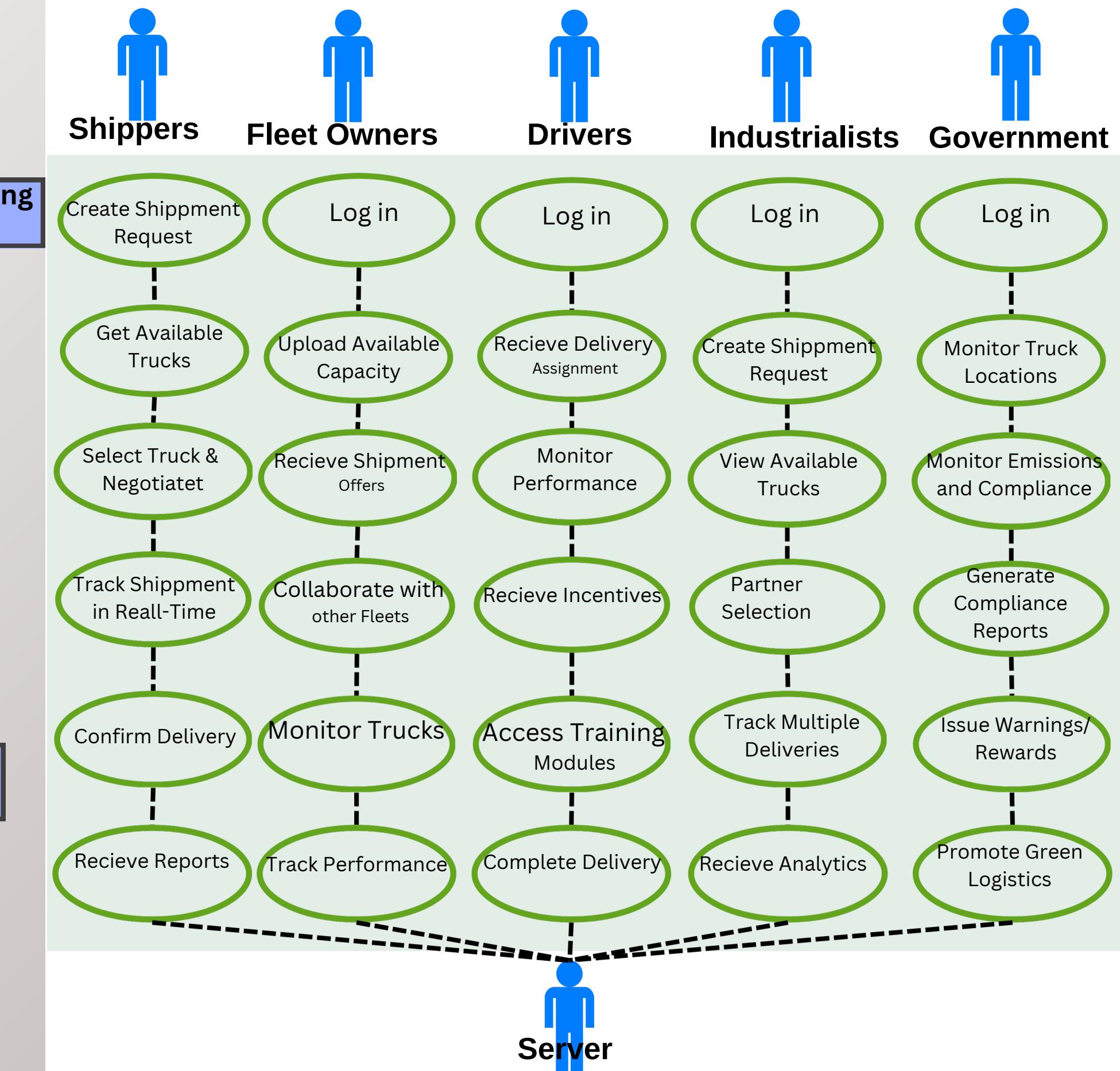
## IN A DIAGRAMATIC WAY



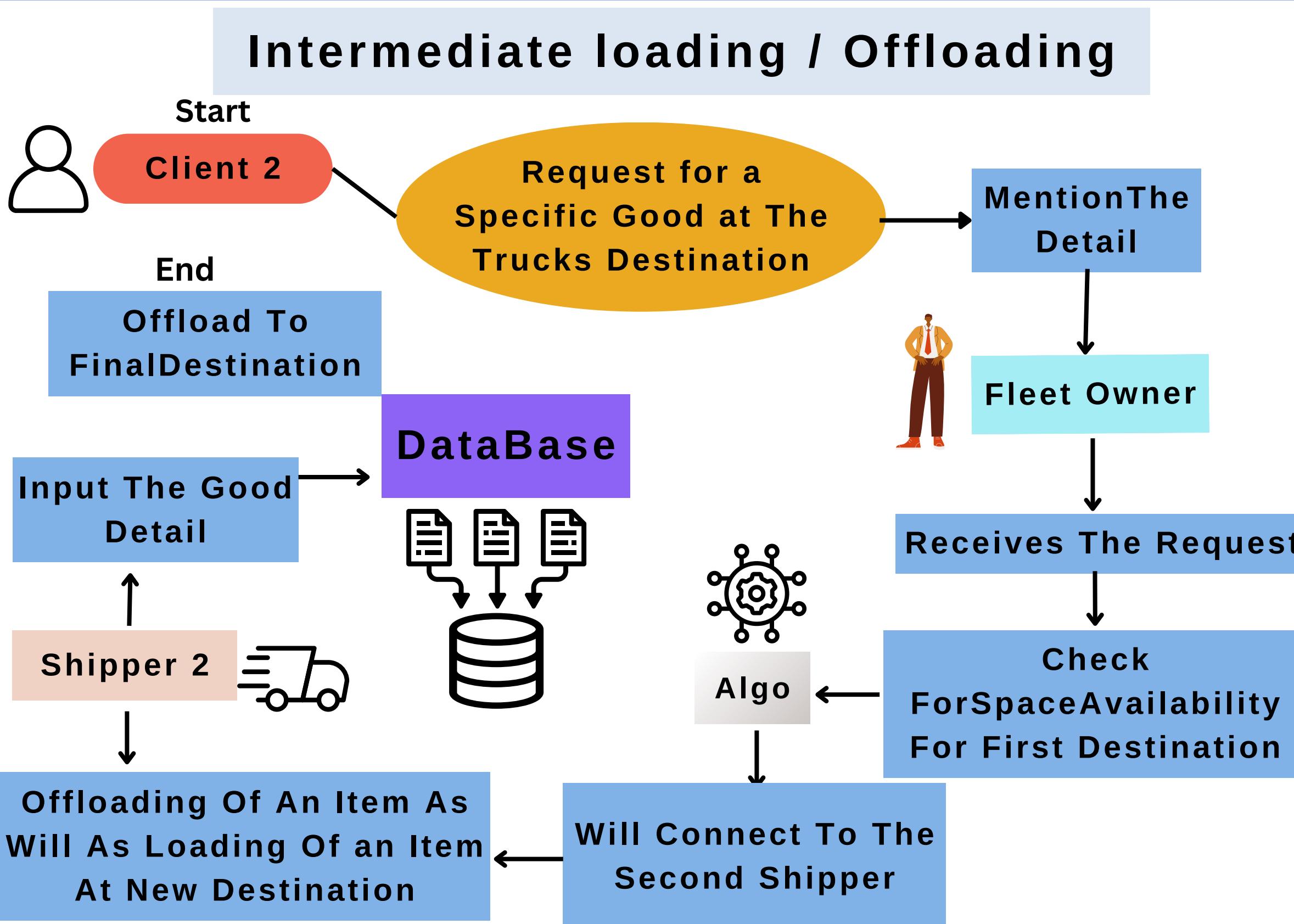
# PROCESS-FLOW



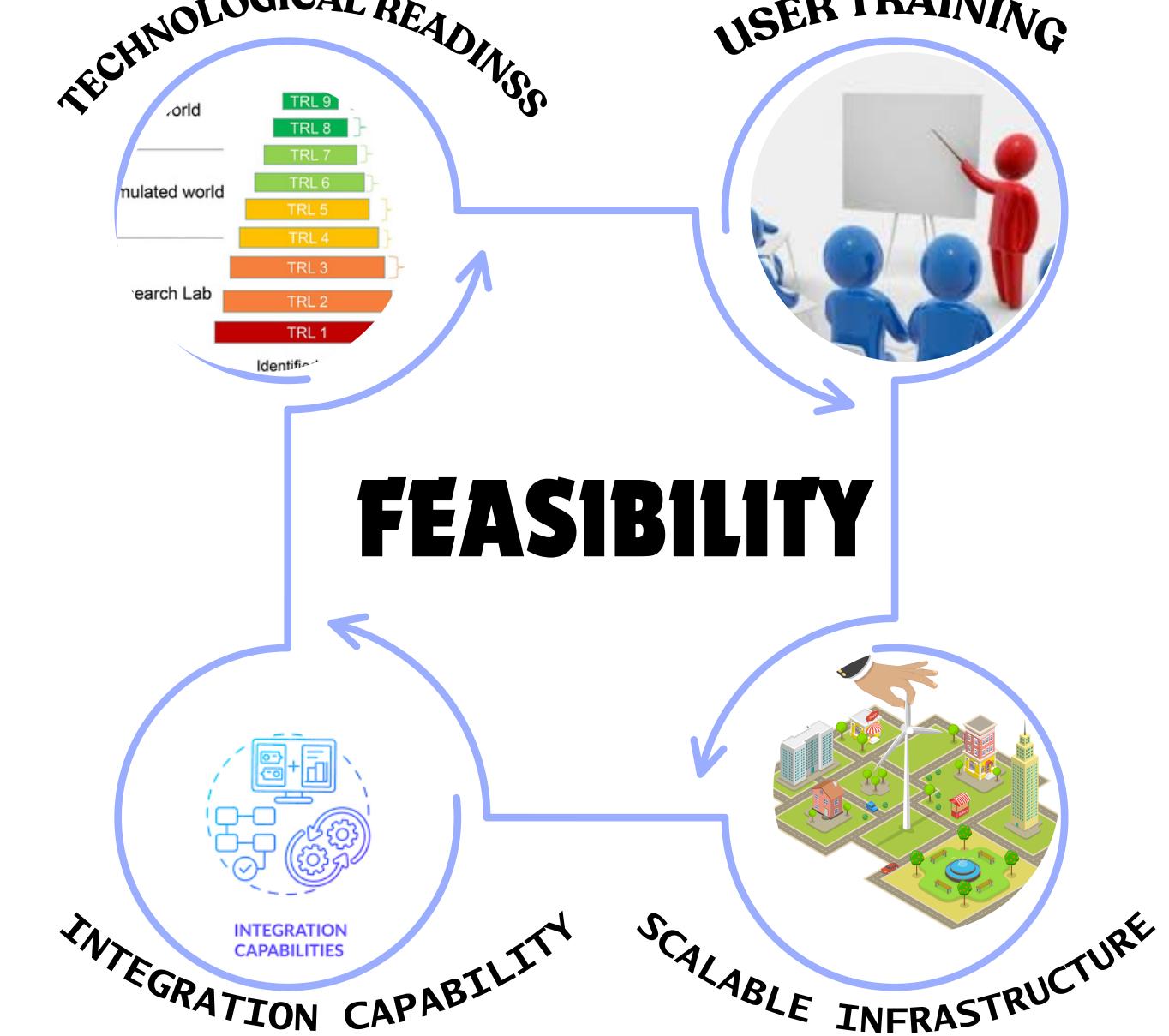
# USECASE DIAGRAM



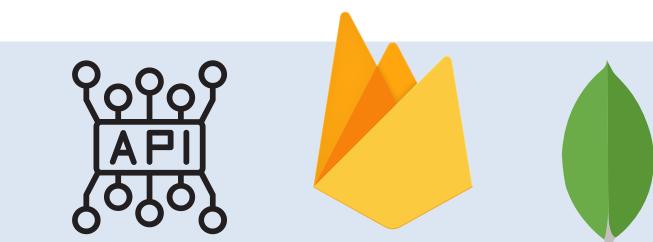
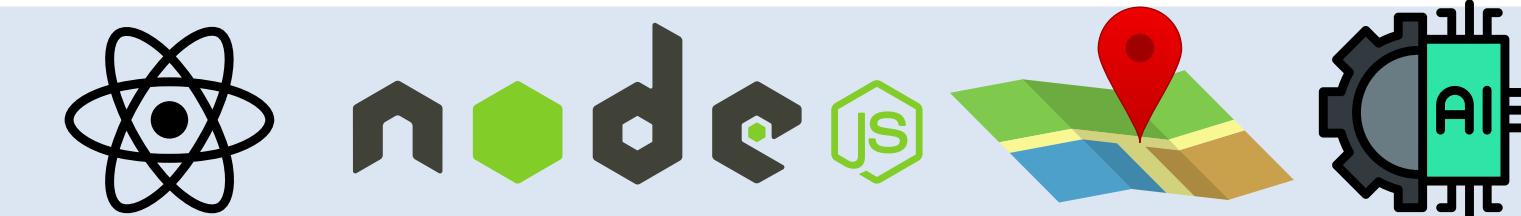
# Flow Chart and Feasibility



## Feasibility

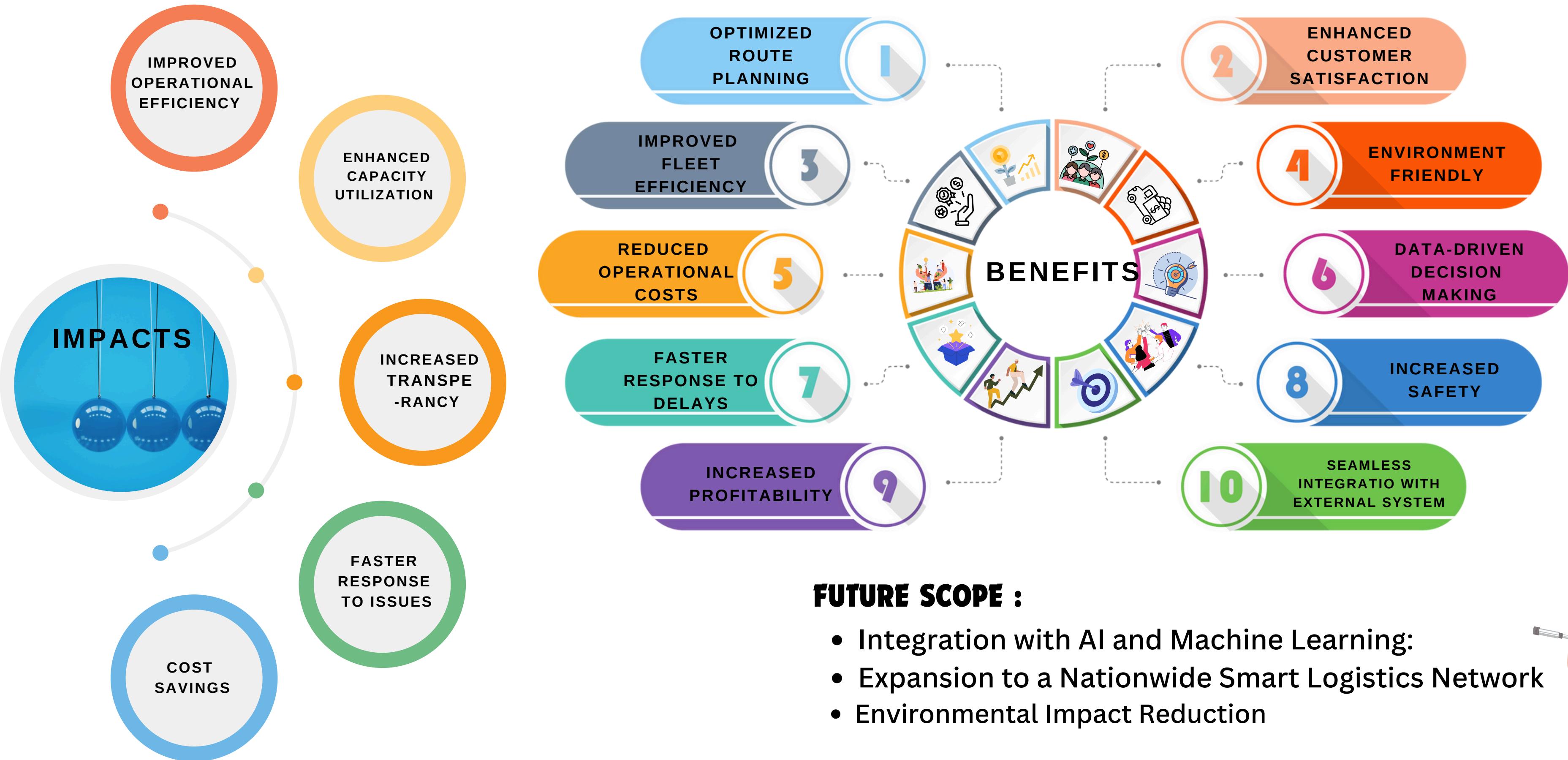


Tech Stack



Tableau

# IMPACTS AND BENEFITS



# RESEARCH AND REFERENCES

## LINKS FROM OUR RESEARCH:

- <https://tcitransportation.com/blog/the-importance-of-real-time-tracking-in-modern-logistics/> (For Real-time Tracking )
- <https://link.springer.com/article/10.1007/s10479-022-04854-6> (For logistics distribution route optimization)
- <https://lot.dhl.com/the-key-to-green-logistics-could-be-this-superfast-route-optimization-algorithm/> (Also for route optimization algorithm)

## LINKS FROM WHERE WE TOOK REFERENCE:

- <https://www.mixtelematics.com/eu/> (For Fleet Management Platform)
- <https://intellias.com/real-time-route-optimization/> (For real - time route optimization)
- <https://www.cloudhawk.com/resource-library/the-road-to-sustainable-logistics-leveraging-telematics-and-fleet-management-solutions/> (For Leveraging Telematics and Fleet Management Solutions)