

## **ByteXL Guided Project: Garbage Fleet Management**

### **Project Overview:**

Garbage Fleet GPS Tracking is a fleet management solution designed to enhance the efficiency and accountability of waste collection services. By equipping garbage trucks with GPS devices, this system enables real-time tracking of vehicle locations, optimal route planning, driver behaviour monitoring, and proactive maintenance alerts.

The system aims to reduce operational costs by minimizing fuel consumption and idling time, while improving driver safety and compliance with municipal regulations. Additionally, GPS tracking facilitates accurate reporting and data-driven insights, allowing waste management teams to streamline operations, respond dynamically to service needs, and ensure timely waste collection, ultimately improving service quality for communities.

### **Prerequisites**

- Knowledge of GPS device and Vendor specification to incorporate features to keep track of activities in Fleet software.
- Familiar with Java programming, and advance java-based framework such as Hibernate, Spring, and Spring Boot.

### **Learning Outcomes:**

- Using GPS devices in fleet management, particularly in waste collection and garbage fleet operations, provides valuable insights and skills for both technical and operational efficiency.

### **Skills Practiced:**

- Setup GPS and their configuration in each truck
- Collect the online data to keep track of vehicle location, route planning, vehicle health and proactive maintenance, and driver behaviour monitoring which cause reduce operational costs by minimizing fuel consumption and idling time
- Generate optimal report to improve the fleet operation.























### **Course Structure:**

#### **1. Course Overview :**

- Develop proficiency in GPS tracking, and data analytics as applied to fleet management.
- Equip learners with route optimization techniques to improve efficiency and reduce fuel consumption.

- Provide insights into predictive maintenance and vehicle health monitoring for effective fleet upkeep.
- Emphasize safety practices, compliance, and the integration of sustainability goals within fleet operations.

## 2. Project Structure:

- ▼  FleetManagement [boot] [devtools]
  - ▼  src/main/java
    - >  com.garbagefleet
    - >  com.garbagefleet.controller
    - >  com.garbagefleet.model
    - >  com.garbagefleet.repository
    - >  com.garbagefleet.service
  - ▼  src/main/resources
    -  static
    -  templates
    -  application.properties
  - >  src/test/java
  - >  JRE System Library [JavaSE-17]
  - >  Maven Dependencies
  -  target/generated-sources/annotations
  -  target/generated-test-sources/test-annotations
  - >  src
  - >  target
  -  HELP.md
  -  mvnw
  -  mvnw.cmd
  -  pom.xml