# Sprint 0 – Planning & Requirements Document

***Project Title:*** *Package Delivery Tracker System*

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## 1. Project Description

This project will deliver a web-based Package Delivery Tracker System that enables customers to view real‐time location and status updates of their shipments. Internal users (drivers, admins) will update statuses through a secured portal, while customers receive automatic notifications and map‐based tracking via a responsive UI.

## 2. Problem Definition

Customers often receive generic or delayed notifications such as "Out for Delivery," leading to uncertainty and increased support inquiries. Delivery personnel lack a centralized tool to log live locations, resulting in manual calls and operational inefficiencies.

## 3. Proposed Solution

- Real‐time GPS‐based map view for live tracking.  
- Automatic push and email notifications for status changes.  
- Admin dashboard for monitoring shipments and personnel.

## 4. Scope

- User registration and authentication (Customer, Driver, Admin)  
- Package creation and assignment to drivers  
- Driver updates: status (Picked Up, In Transit, Delivered) and location coordinates  
- Customer portal: live status map, timeline of events, notifications  
- Admin portal: overview dashboard, user & package management

## 5. Stakeholders

- **Customers:** End users tracking packages.  
- **Drivers:** Personnel updating delivery status and location.  
- **Admin Team:** Oversees system usage, manages users and shipments.  
- **Development Team**: Designers, developers, testers.

## 6. User Roles & Actors

|  |  |  |
| --- | --- | --- |
| **Role** | **Responsibilities** | |
| Customer | | Register, login, view shipment status & map, receive notifications |
| Driver | Login, view assigned deliveries, update status & location | |
| Admin | Manage users, assign packages, view system metrics | |

## 7. Functional Requirements

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| --- | --- | --- | --- |
| ID | Description | Priority | Acceptance Criteria |
| FR-01 | Users shall be able to register and login by role (Customer, Driver, Admin) | High | Successful registration & login flow with email confirmation; role‐specific redirect |
| FR-02 | Admin shall create and assign packages to drivers | High | Admin form captures package details, assigns to driver, persists assignment in database |
| FR-03 | Driver shall update package status (Picked Up, In Transit, Delivered) | High | Driver portal shows list; status change persists and triggers timestamp entry |
| FR-04 | Drivers send live location updates during "In Transit" | Medium | GPS coordinates posted by driver update map in customer portal within 5 seconds |
| FR-05 | Customers shall view real‐time map with package location and status timeline | High | Map displays current marker; timeline lists timestamped events |
| FR-06 | System shall send email/push notifications on key status transitions | Medium | On status change, customers receive notification within 1 minute |
| FR-07 | Admin shall view dashboard with metrics: total shipments, on time rate, active drivers | Medium | Dashboard widgets display |

## 8. Non-Functional Requirements

- **Performance:** map and dashboard views load within 2 seconds for 95% of requests.  
- **Availability:** 99% uptime (excluding maintenance).  
- **Security:** HTTPS enforced; role‐based access control; input validation.  
- **Scalability:** Support 5,000 concurrent users; optimized database.  
- **Usability:** Responsive design; clear error messages.  
- **Maintainability:** Layered architecture; centralized logging.

## 9. Tools & Environment Setup

- **IDE:** Visual Studio Code.  
- **Framework:** JIRA.  
- **Version Control:** GitHub   
- **Modeling:** lucid app for UML.  
- **Backlog & Planning:** Jira Sprint 0 board.

## 9. UML

**Use case diagram:**

The following diagram illustrates the actors and use cases involved in the Package Delivery Tracker System:  
- Three main actors: Customer, Driver, and Admin.  
- Common functionalities like Register and Login are shared among all actors.  
- Customer can track packages.  
- Driver can update package status.  
- Admin has management permissions: assigning drivers, managing users, and viewing deliveries.

صورة تحتوي على نص, رسم بياني, لقطة شاشة, خط

قد يكون المحتوى الذي تم إنشاؤه بواسطة الذكاء الاصطناعي غير صحيح.

**Class diagram:**

The class diagram below presents the structure of the Package Delivery Tracker System.  
It contains three main classes:  
- User: represents all types of users (Customer, Driver, Admin) with attributes like ID, name, and login methods.  
- Package: represents the delivery package with sender/receiver info, current status, and related operations.  
- TrackingLog: stores logs of status updates made by users with timestamps and location.  
  
The arrows represent associations between the classes, such as who sends or updates a package.

A computer screen shot of a computer

AI-generated content may be incorrect.