### Problem Statement

In today’s fast-paced digital era, online shopping has become an integral part of everyday life. Individuals frequently receive multiple deliveries from different courier services such as Aramex, DHL, and FedEx. However, there is a significant gap when it comes to managing these deliveries in a centralized and user-friendly way.

Currently, users must depend on scattered and inconsistent sources like SMS messages, emails, and various courier apps to track their packages. This fragmented experience often leads to confusion, lost tracking numbers, delayed updates, and difficulty maintaining delivery records. Additionally, there is no common platform that helps users manage, organize, or analyze their personal delivery history in one place.

Despite the increasing reliance on e-commerce, there is no lightweight tool available specifically tailored for personal delivery management — one that combines real-time package tracking, smart organization, and helpful tips to make the delivery experience more efficient and convenient. This lack of a centralized solution creates unnecessary hassle, especially for individuals who frequently receive packages and want better visibility and control over their deliveries.

### Business Case

The **PackTrack** system is designed to fill this gap by providing a centralized, web-based solution that helps users manage, track, and analyze their personal deliveries. It acts as a personal delivery dashboard where users can log shipments, receive real-time status updates via courier APIs, and get value-added content like packaging or motivation-related tips.

Unlike traditional courier apps that focus on individual shipments, PackTrack allows users to manage multiple deliveries from **different couriers** all in one place. It eliminates the need to jump between apps or dig through emails for tracking links. Additionally, by offering features such as **PDF export, searchable delivery logs, and smart tips**, PackTrack enhances the user experience and offers practical tools to stay organized.

### Aim and Objectives

The main aim of this project is to design and develop a personal delivery tracking web application that allows users to efficiently manage their deliveries, track their real-time status, and benefit from helpful packaging tips — all through an interactive dashboard.

**The key objectives of this project are:**

* To implement JWT-based user authentication for secure access and role-based dashboard features.
* To allow users to create, update, and manage their delivery records through an intuitive dashboard.
* To integrate a real-time courier tracking API (e.g., TrackingMore API) that fetches live delivery status updates.
* To display motivational quotes and packaging tips, creating an engaging user experience.
* To develop an Admin Panel for managing users and viewing or updating all delivery logs.
* To enable PDF export of user delivery logs for printing or saving offline.
* To ensure the system is mobile responsive, visually clean, and user-friendly.
* To apply DevOps practices, including CI/CD pipelines using GitHub Actions and Docker for streamlined development and deployment workflows.

### Project Scope

The scope of the PackTrack project is centered on building a full-stack web application that serves the needs of individuals who regularly receive deliveries. The system will include both **User** and **Admin** interfaces, each with specific features and access levels. The goal is to provide a simple yet professional platform that centralizes delivery data and improves delivery management for users.

* **User Authentication System:** Login and registration using JWT, with user roles (Admin/User).
* **User Dashboard:** A personalized interface where users can view and manage their delivery logs.
* **Add Delivery Form:** Users can add new delivery records including courier name, tracking number, item title, and expected delivery date.
* **Delivery Tracking:** Real-time status updates from courier services via third-party API integration.
* **Search, Filter, Sort:** Users can easily find specific delivery logs or view sorted data.
* **Quote/Tip Display:** A section displaying random motivational or packaging-related quotes.
* Admin Dashboard: Admins can manage all delivery records, users, and manually update statuses.
* PDF Export Feature: Users and Admins can export delivery records in printable PDF format.

DevOps Tools Integration: GitHub Actions for CI/CD and Docker containerization for consistent environment deployment.