SSJ PACKAGE TRACKER

Requirements Analysis Document

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Introduction

Purpose

The SSJ Package Tracker offers clients an intuitive interface to track their couriers dispatched via our partner, Bohn's Drones Inc., in Lincoln and Omaha, Nebraska, area. The platform includes a suite of tools you need at every stage of the Professional Delivery lifecycle.

Scope

The scope of the project is to design and build a software management system for Bohn's Drones Inc. that both dispatches SUAS drone units as well as tracks where they are, i.e at a depot, between depots, or currently delivering a package. Both the Bohn's Drones staff as well as the customers should be able to see the delivery status of a package, but only the Bohn's Drones staff can see the exact location of where the drones are. The software will also allow Bohn's Drones to manage the empty drones and make sure that they are distributed to the depots so that they can be deployed as soon as possible. The completed software project will be delivered no later than April 22nd.

Objectives and Success Criteria

The objectives of our software, as outlined in the Increment 1 Document[1], are:

- Both the parties, the sender and the receiver, should be able to keep a track of their courier, that is, be notified where their shipment is
- Clients should be able to order a DR which will trigger one of our drones to be dispatched accordingly and deliver the package
- The CSTS should be able to track each drone, their package, the current coordinates of each drone, and different functionalities related to drone operation
- Our staff should be able to dispatch drones from one SoA to another

Definitions, Acronyms, and Abbreviations

Delivery Request: The delivery request is generated when either of the clients, the sender or the receiver, initiate the drone activation protocol from their UD

Customer Service Team and Staff: Our dedicated team of hard-working employees to take care of the customer's needs, because the customer comes first!

Site of Operation: Site of Operation refers to the site and its corresponding parameters where the drone is currently at

References

1: CSCE 361 Course Project, Increment 1 Document

Overview

In a nutshell, SSJ Package Tracker is a proprietary software to keep a track of the couriers from the sender-side and the receiver-side. Our software consists of different tools and features to provide the client peace of mind with respect to their shipment. The CSTS has their own suite of tools to help the customers with tracking their shipment and operating the drones.

Current System

Nada

Proposed System

Overview

The SSJ Tracking system consists of an intuitive front-end interface that contains two options. One of the options is to locate a package by using the tracking number of the same package. This option is used for a quick and easy access to the clients who want to-the-point information about their package. On the other side of the page, there is a form that prompts user for their login credentials which they can use to access their UD and have a whole suite of controls to track their package. They can also dispatch drones for manual delivery.

Functional Requirements

F1. When a package is being delivered, both the customer and Bohn's Drones CSTS can see the progress of the delivery, i.e. whether the drone is at a depot, between depots, or en route to the delivery address.

F2. CSTS will be able to send drones not carrying a package between depots.

F3. CSTS can see which package is aboard a specific SUAS.

F4. When a drone carrying a package arrives at a depot, the package is handed off to another drone to continue delivery.

F5. Our database is created and the data therein is accessible.

Nonfunctional Requirements

N1. **Scalability**: The SSJ package tracker system will function properly when at most 100 drones are in the process of delivering at most 100 packages at a time.

N2. **Response Time**: The SSJ Package Tracker System is able to dispatch a drone or soon as the drone it is ready.

N3. **Privacy**: The package delivery information is only available to the customer it pertains to and the CSTS

N4. **Supportability**: The CSTS team is available to help the customers with any issues regarding tracking their shipment

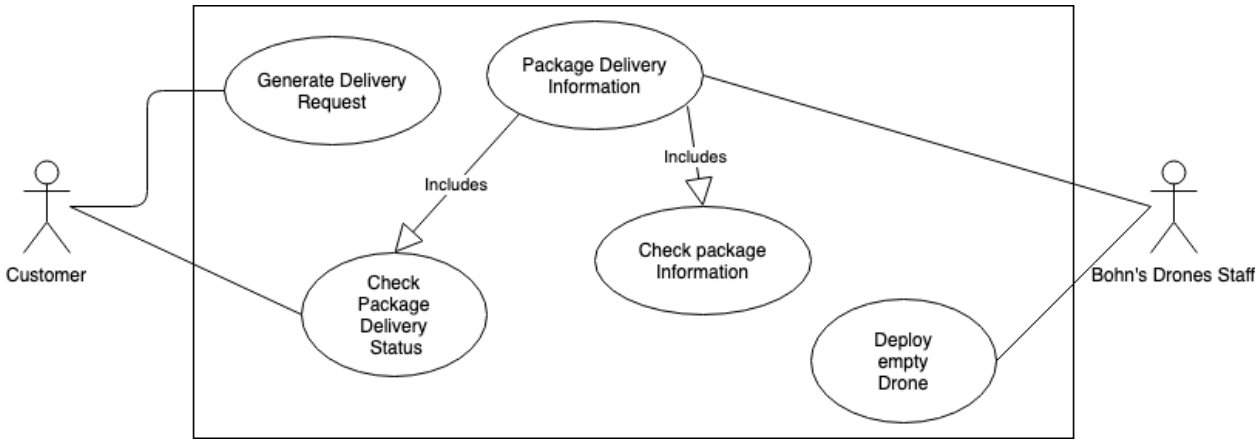
N5. **Implementation**: Bohn's Drones depots are located every 10 miles between Lincoln and Omaha

N6. **Interface**: Every client has a UD containing controls to navigate their shipment and check the scheduled delivery timeline

N7. **Legal**: SSJ prompts its users to agree with its terms and conditions which include excerpts asking for the right to obtain location, sensitive information such as credit cards, and so on

System Models

Use Case Model

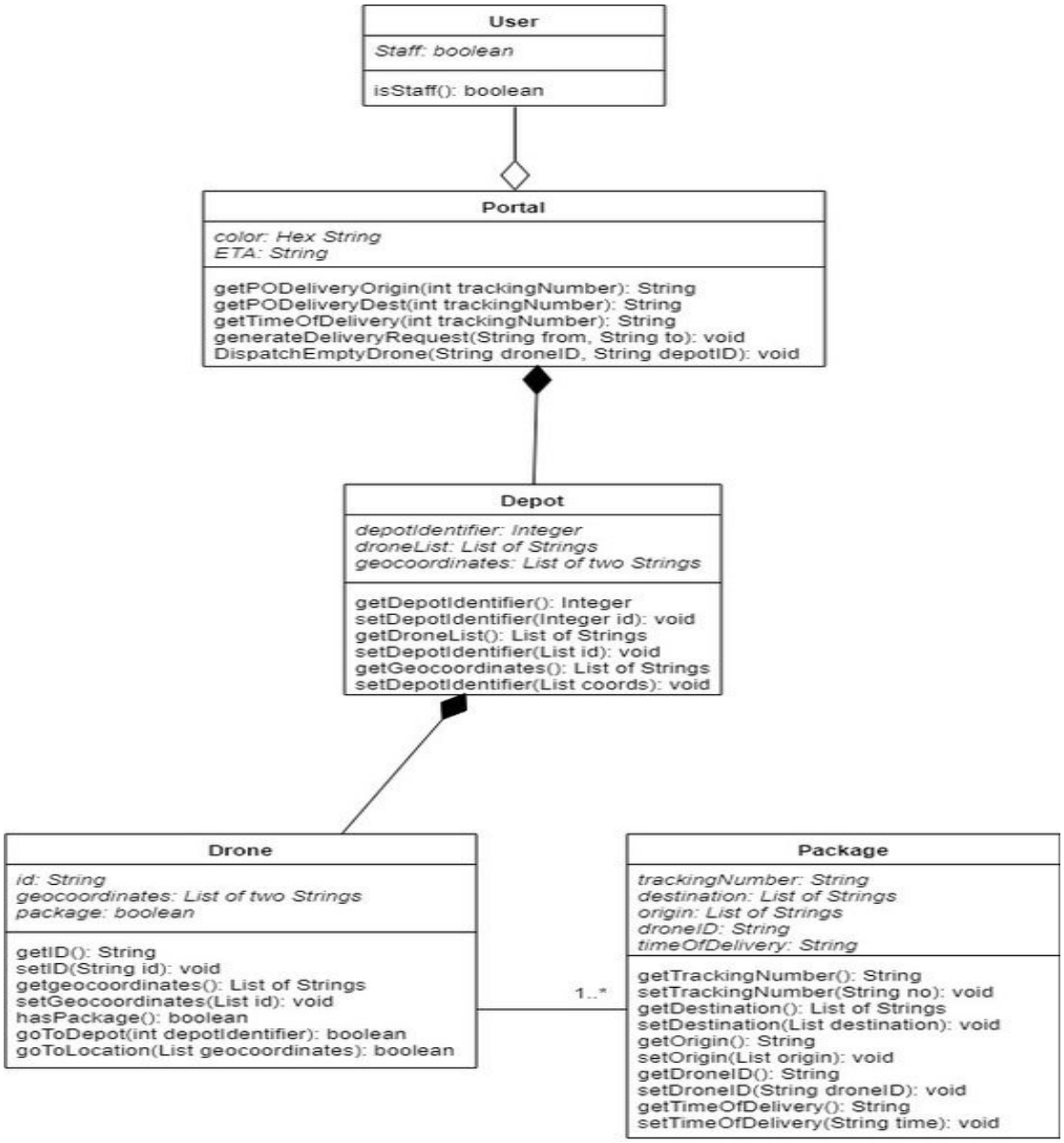


Use Case 1: Customer generates delivery request: When the customer needs a package delivered, a package delivery request is sent to Bohn's drones. A drone then picks up the acquired package and then brings it to the delivery location or another depot if the depot is closer than the delivery location.

Use Case 2: Staff deploys an empty drone: When a drone depot is running low on drones or drones are needed in a higher capacity at another location, a Bohn's Drones staff member can deploy a drone that is not currently carrying a package to another depot location.

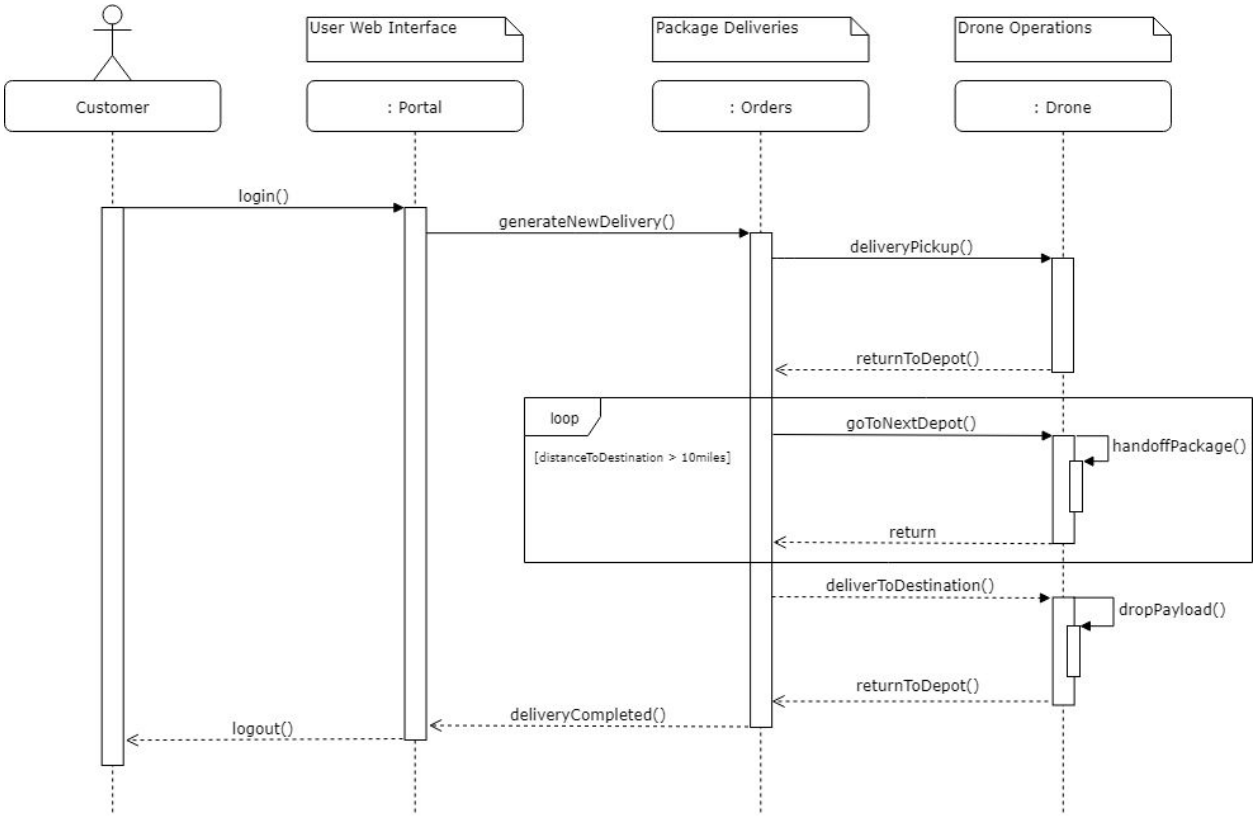
Use Case 3: Customer checks status of package: When a package is out for a particular customer, the customer can log onto the web portal to check the status and location of the given package.

Structural Model

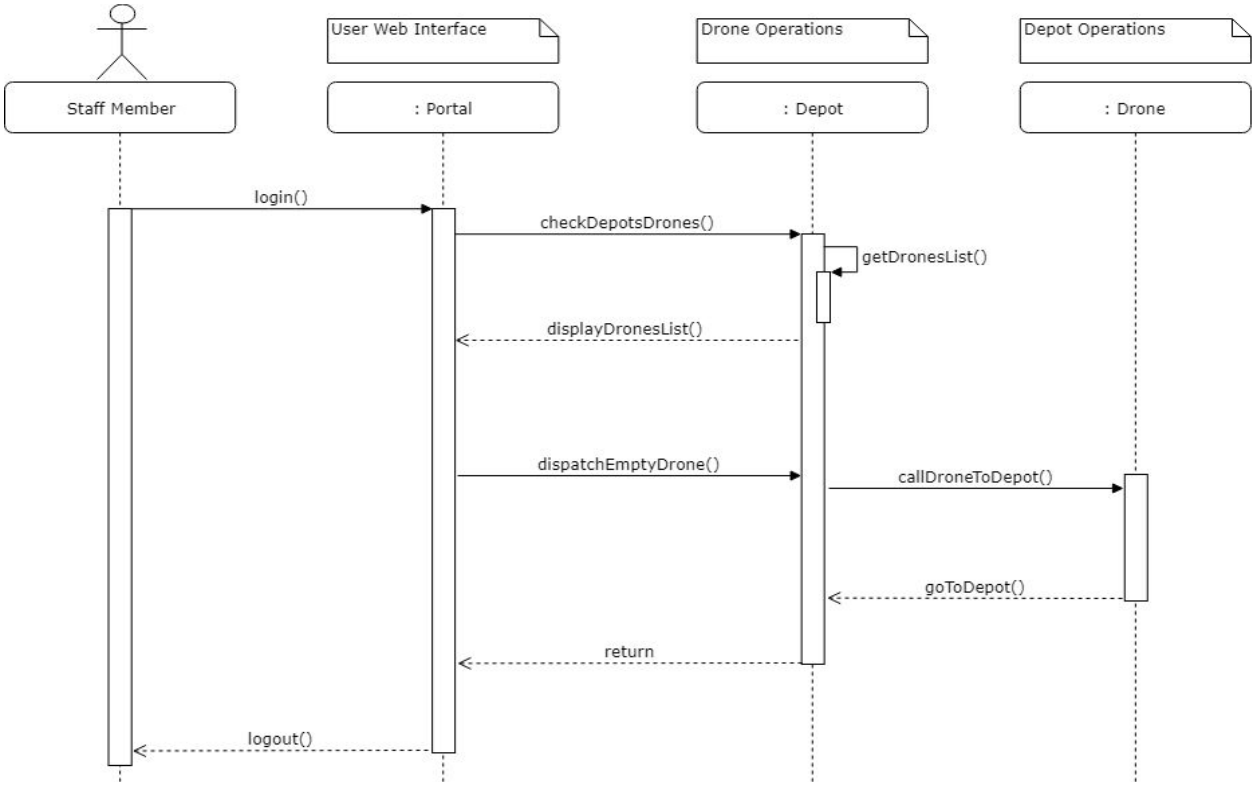


Behavioral Model

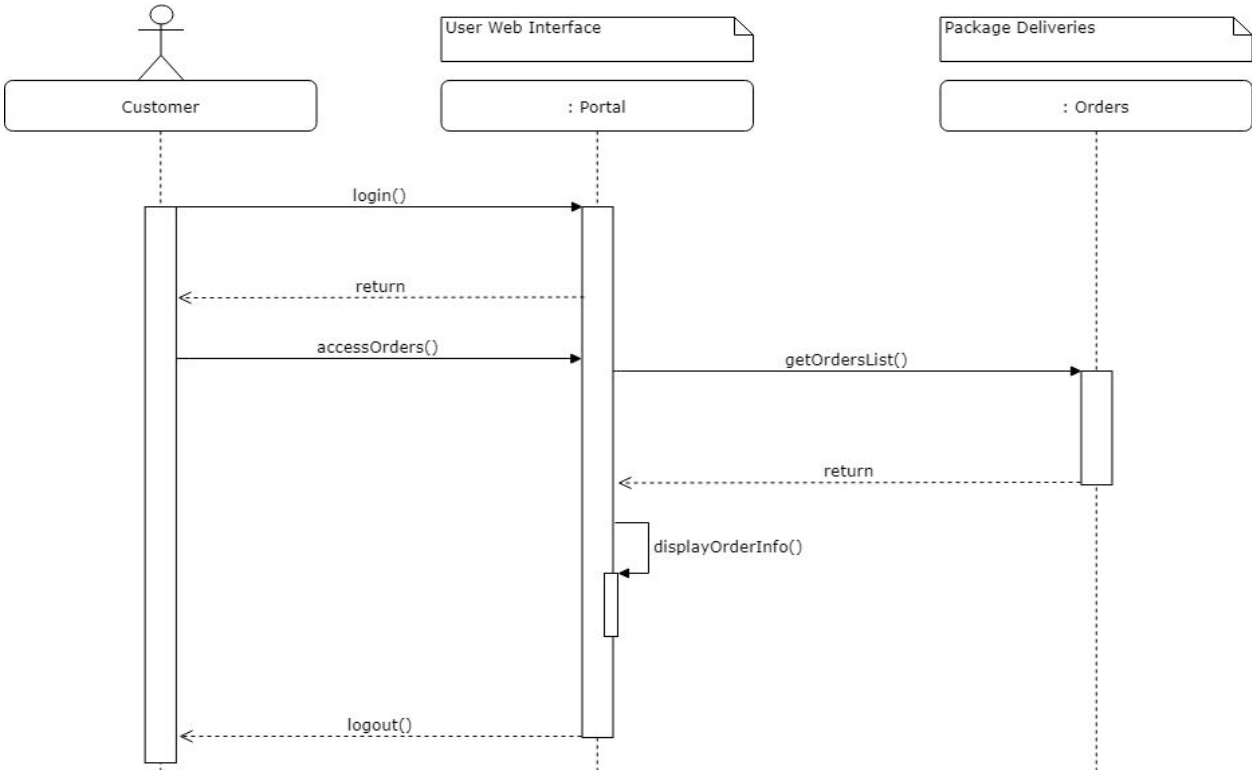
Use Case 1: Customer generates delivery request



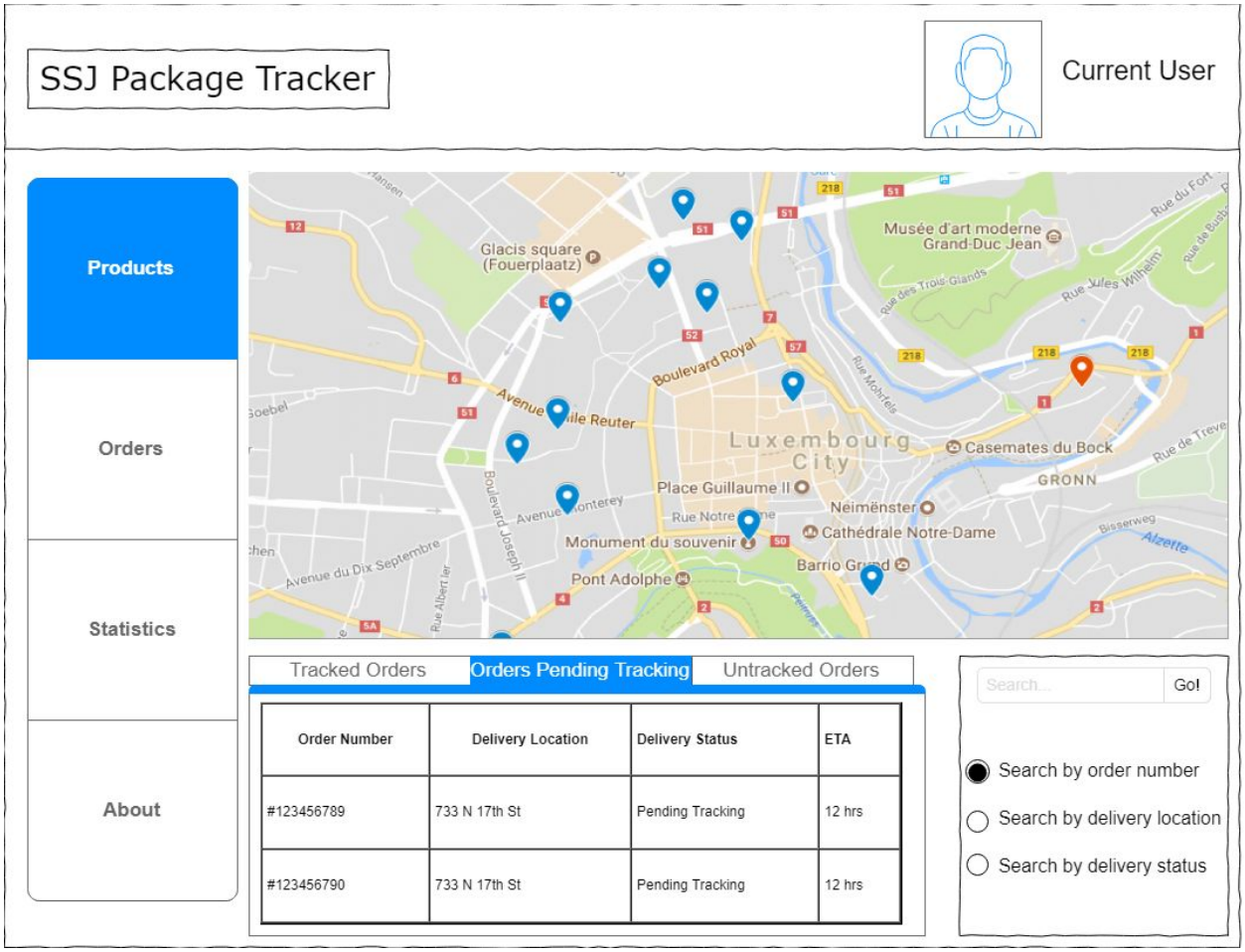
Use Case 2: Staff deploys an empty drone

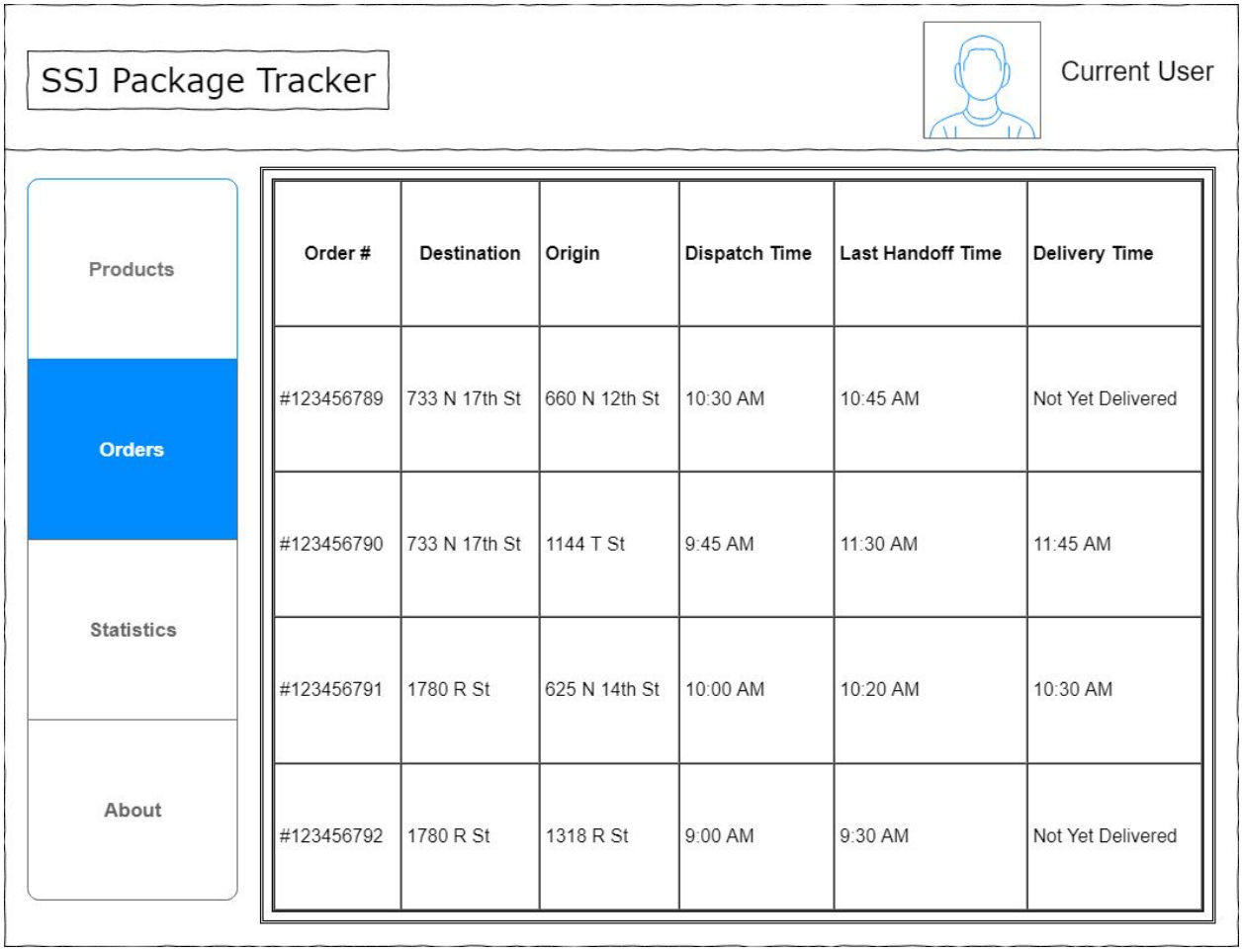


Use Case 3: Customer checks status of package



User Interface: Navigational Paths and Screen Mockups





Glossary

SSJ Package Tracker - Samuel, Sanat, & Jerome Package Tracker

SUAS - small unmanned aerial systems

DR - Delivery Request

CSTS - Customer Service Team and Staff

SoA - Site of Operation

UD - User Dashboard