WeDrone Delivery System Application

SOFE3650 – Deliverable II: Project Progress Report

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Introduction

In this report we have included our project design Use Case Model and tables of use cases, quality attributes and system constraints for the WeDrone delivery system application.

Use Case Model Diagram

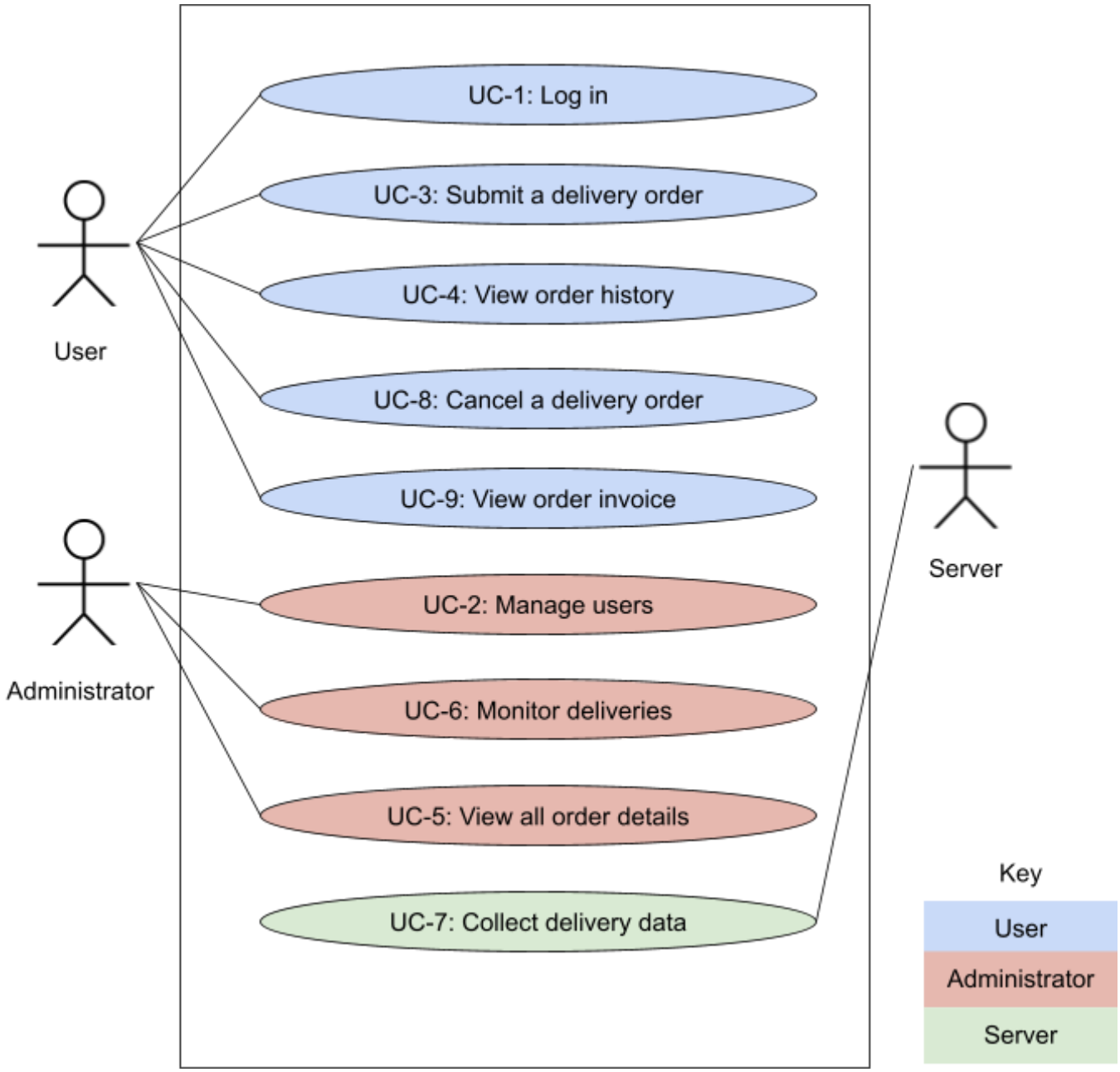

Figure 1: Use case model diagram for the WeDrone Delivery system application

Each of the use cases in Figure 1 is described in the following table:

Use Case	Description
UC-1: Log in	A user logs into the system through a login/password page. Upon successful login, the user is presented with a different landing page depending on their role (e.g. user or admin).
UC-2: Manage users	An administrator adds or removes a user or modifies permissions for a user (e.g. convert a user into an administrator or vice versa).
UC-3: Submit a delivery order	A user enters the weight and dimensions of their delivery item. If it is overweight or oversize the user is prompted with an error. Otherwise, the user can proceed to provide a pickup/dropoff address and submit the delivery order. Once addresses are verified (using Google Maps/Places Autocomplete API service), the user is then given a quote for their delivery order with cost and time details. If the user accepts, the delivery order is submitted. If the user cancels, the order is abandoned and fields reset.
UC-4: View order history	A user views their own order history with details about every delivery they have been successfully submitted and fulfilled. Order history can be filtered by date, status, distance and so on.
UC-5: View all order details	An administrator views the history and details for orders for all or any users. Order history can be filtered by date, status, user, distance etc.
UC-6: Monitor deliveries	An administrator can view the deliveries in progress.
UC-7: Collect delivery data	The system will collect and store delivery order data into a database.
UC-8: Cancel a delivery order	A user can cancel their order as long as the pick up drone has not already picked up the delivery item.
UC-9: View order invoice	A user can enter their order ID or click through from the order history page to see the invoice for that order.

Quality Attributes and Constraints on the following page.

Table of quality attributes with scenarios, along with associated use cases:

ID	Quality Attribute	Scenario	Associated Use Case
QA-1	Availability	All operations provided by the application must be available 24/7.	ALL
QA-2	Performance	All pages on the website must load within 3 seconds.	ALL
QA-3	Performance, Usability	Order history must load quickly and by default show all orders fulfilled in the last 24 hours (both for administrator and user views).	UC-4,5,6,9
QA-4	Security	All logins (user and administrator) are recorded with a timestamp and IP address.	UC-1,2
QA-5	Scalability	The system is able to respond to an increase attendance to the website	ALL
QA-6	Usability	The application will have an intuitive and easy to use UI.	UC-3,4,5,6, 8,9
QA-7	Interoperability	The application will use the Google Maps/Places/AutoComplete APIs to validate user input and use real world geocode data for calculating drone metrics and flight paths.	UC-3, 8, 9

Table of system constraints with descriptions:

Constraints	Description
CON-1:	The system must be accessed through the latest version of either web browser (Chrome, Firefox, V4, IE8) in different platforms: Windows, OSX, and Linux.
CON-2:	The item requested must meet a weight requirement of being below 50 kg.
CON-3:	The item requested must meet a size requirement of being below 1.5 cubic meter.
CON-4:	Users must enter a valid address for both pickup and drop off.
CON-5:	There must be an established network with a reliable bandwidth during selection and confirmation.
CON-6:	Performance data needs to be collected in intervals of no more than 5 minutes, as higher intervals result in time servers discarding data.
CON-7:	Events from the last 30 days must be stored.
CON-8:	An existing relational database server must be used. This server cannot be used for other purposes than hosting the database.
CON-9:	A minimum of 50 simultaneous users must be supported .