IT Project 2024

Planning Tool for Truck Tours

Documentation

Fachhochschule Nordwestschweiz

University of Applied Science in Business Information Technology

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- TechTitans

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Project Start: 23.02.2024

Project End: 31.05.2024

Place: Basel

DevOps Project:

https://dev.azure.com/AALM2023/IT_Project_Tr

Table of Contents

1 General Notes

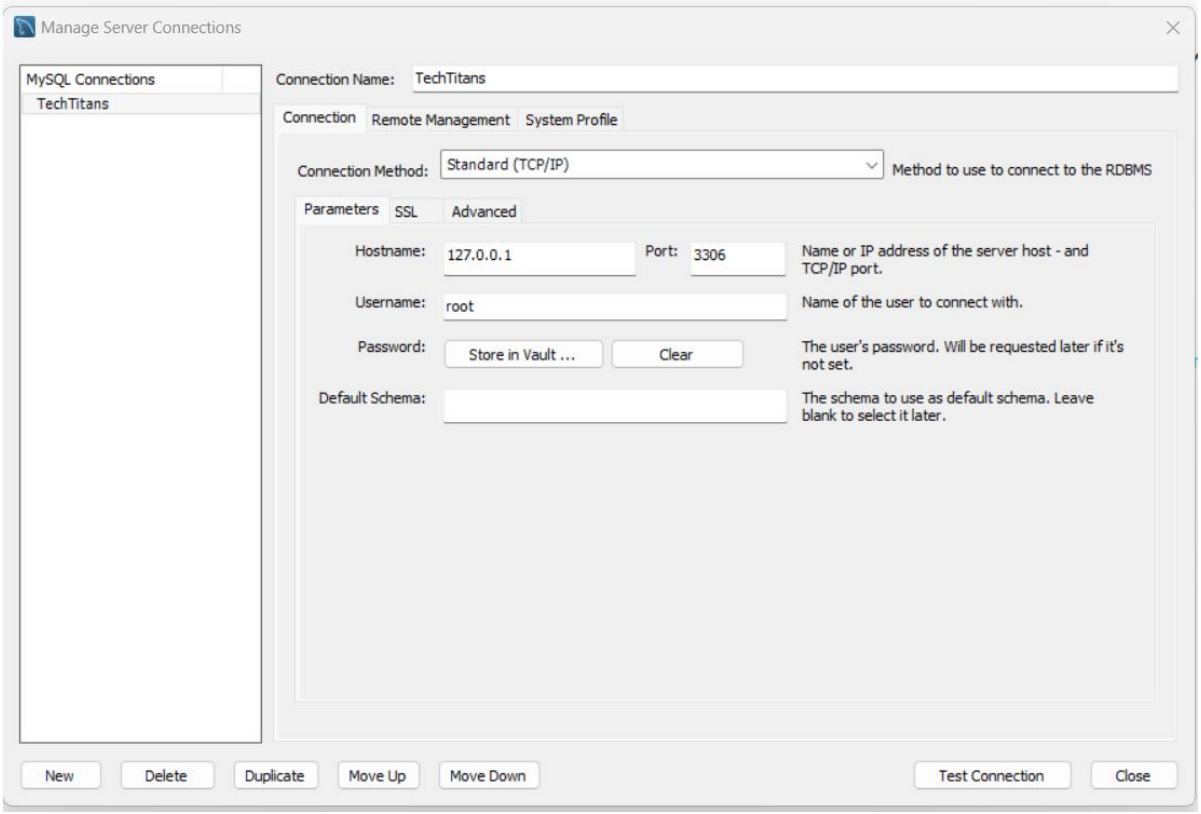
Our whole project is stored on following DevOps Project:

https://dev.azure.com/AALM2023/IT_Project_Truck_Tours_Manuel_Dejen_Stefan

We have some further information also available on the Wiki Pages of our DevOps Project on following link:

https://dev.azure.com/AALM2023/IT_Project_Truck_Tours_Manuel_Dejen_Stefan/_wiki/wikis/IT_Project_Truck_Tours_Manuel_Dejen_Stefan.wiki/12/Database-Information

2 Installation Guide



Add a new Database connection over MySQL Workbench as above. The password is as follows:

Classy5544**

Then copy the main branch from our DevOps Repository into inelij:

https://AALM2023@dev.azure.com/AALM2023/IT_Project_Truck_Tours_Manuel_Dejen_Stefan/_git/TechTitans

Then let the create table statement run from our wiki page:

https://dev.azure.com/AALM2023/IT_Project_Truck_Tours_Manuel_Dejen_Stefan/_wiki/wikis/IT_Project_Truck_Tours_Manuel_Dejen_Stefan.wiki/26/DB-Script-Insert-Imaginary-Data

Next insert the Insert Scripts for Imaginary Data from the Wiki page:

https://dev.azure.com/AALM2023/IT_Project_Truck_Tours_Manuel_Dejen_Stefan/_wiki/wikis/IT_Project_Truck_Tours_Manuel_Dejen_Stefan.wiki/24/DB-Script-for-Table-Creation

Next you can run the application in the main class an register a new user. For the first user you have to update for the admin role manually over MySQL Workbench:

https://dev.azure.com/AALM2023/IT_Project_Truck_Tours_Manuel_Dejen_Stefan/_wiki/wikis/IT_Project_Truck_Tours_Manuel_Dejen_Stefan.wiki/17/Add-Admin-on-MySQL-Workbench

3 Updated Data Structure

Following is our updated Data Structure. The main change is the addition of a new table for Clustering Assignment. This table stores the Order IDs, their respective clusters, and the assigned trucks.

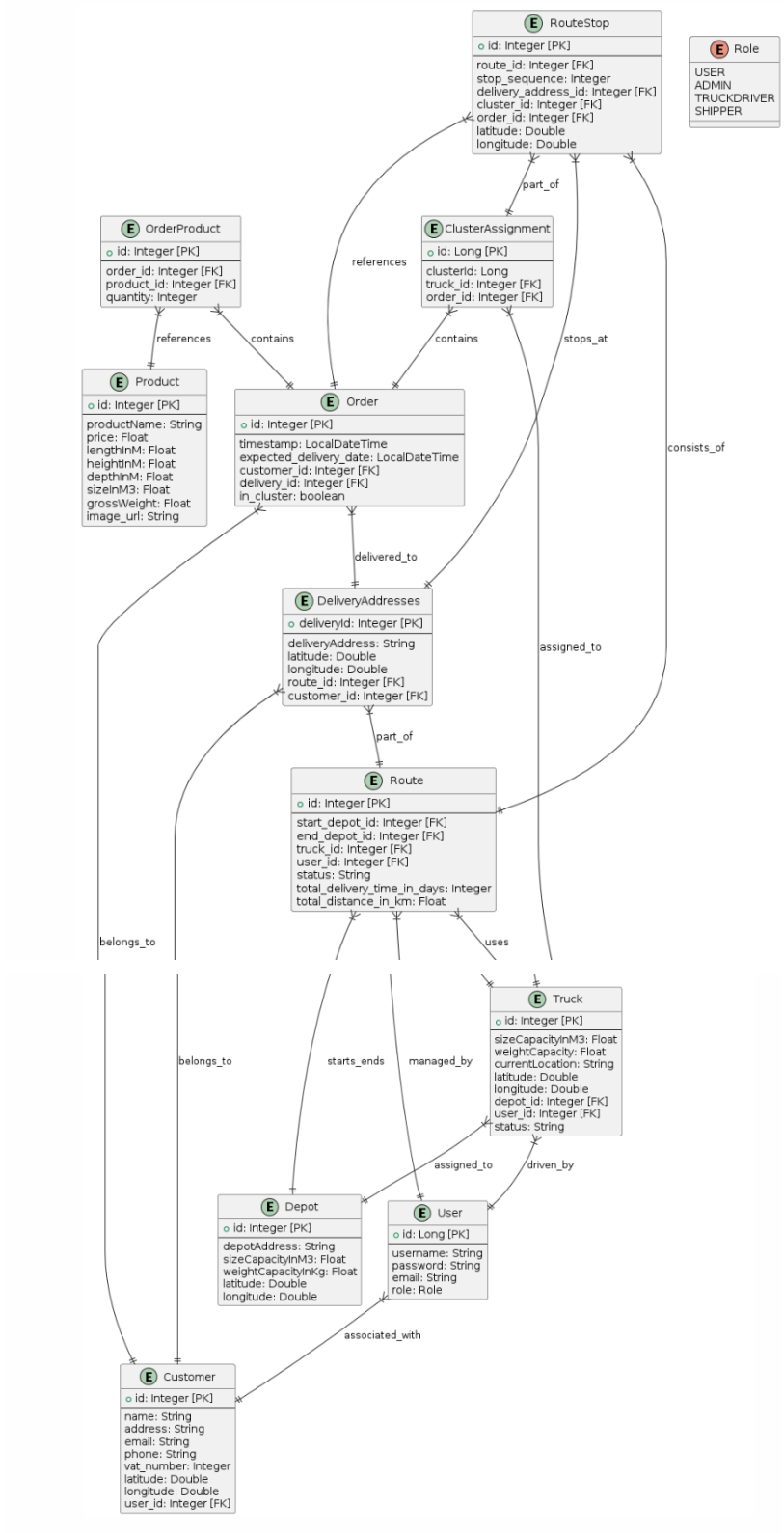
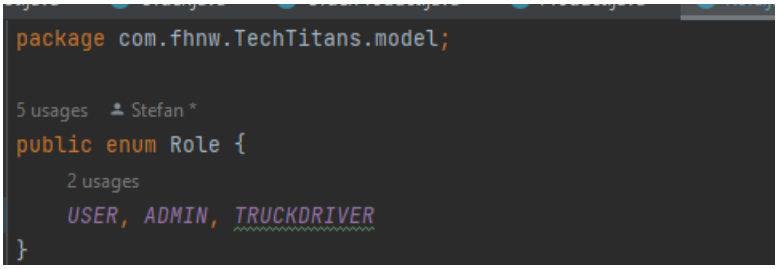


Figure 1 - New Data Model

The DDL Script are not necessary anymore since the application should create the tables itself through the model classes. However, there would be a Script available on the Wiki pages to create all necessary tables if there is the need for examples to insert imaginary data in the program before starting the application.

4 Updated Roles



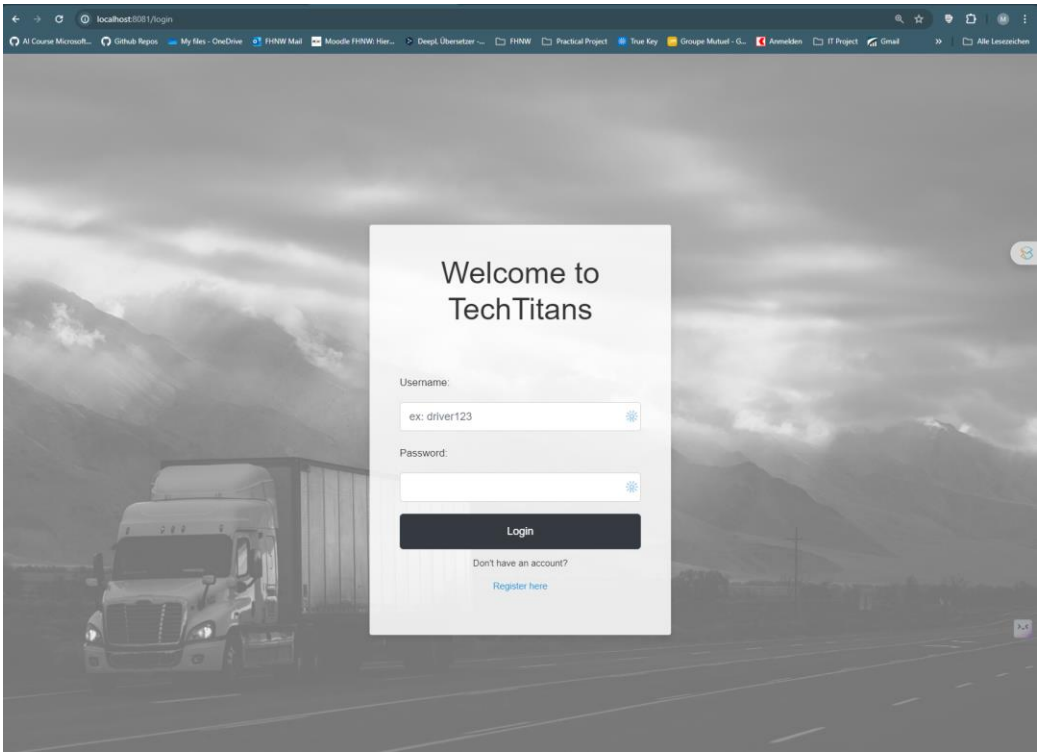
Our system supports three distinct roles, which are assigned by an admin. The admin role for the first admin must be granted through direct interaction with the database.

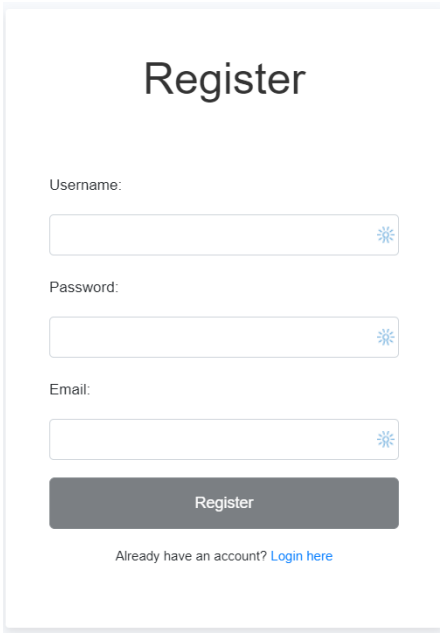
All users can log in and view the homepage. The first user role, "Customer," has limited capabilities: they can only access core functionalities and view their orders on a separate page. The "Truck Driver" role allows users to view their routes and update the status of those routes. The "Admin" role has the most extensive capabilities, including changing roles, adding, and modifying products, and initiating the clustering and route algorithms.

If someone registers new, they will be a user by default and a change of this role must be made by an administrator.

5 User Guide

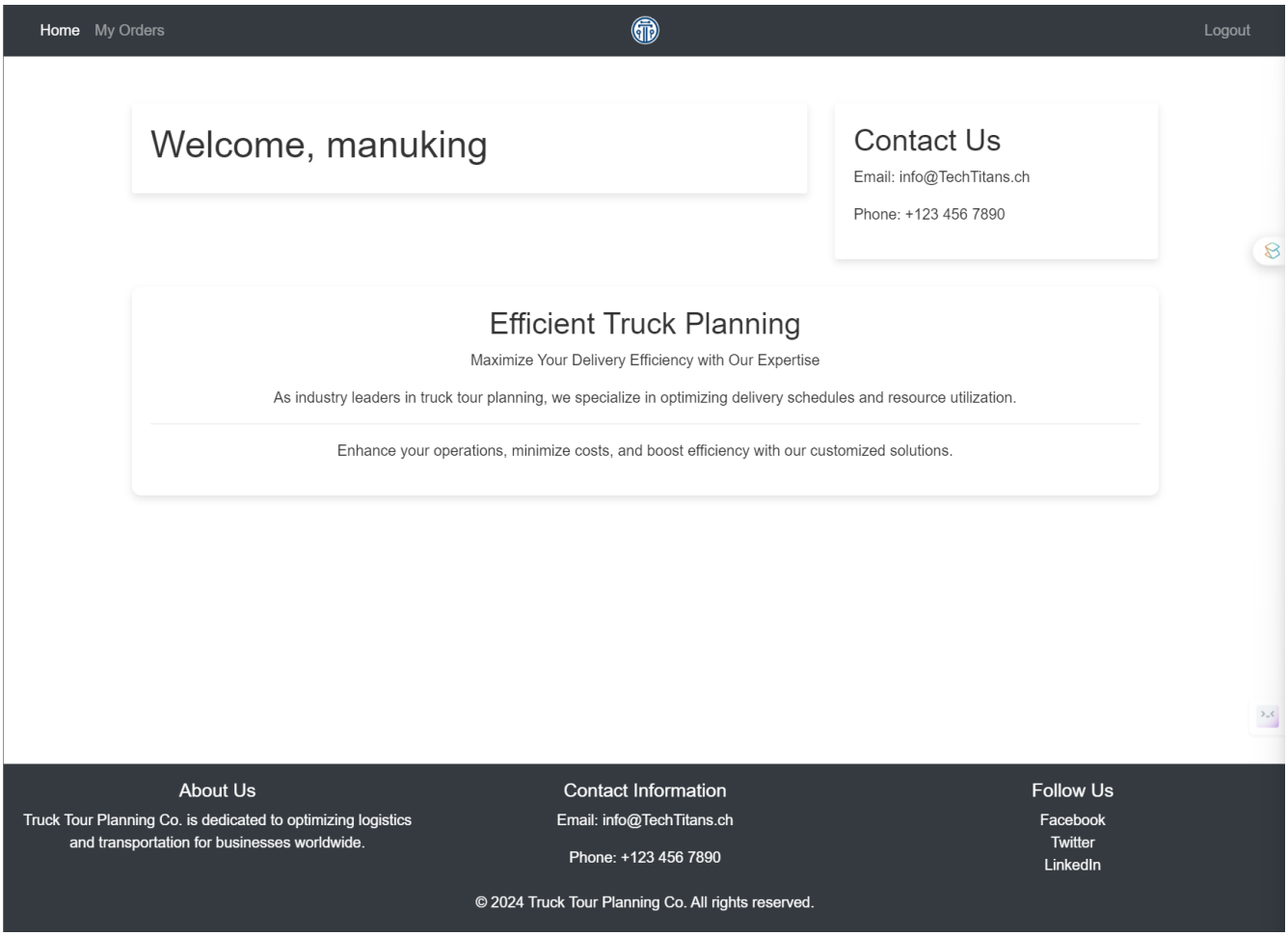
As it was already visible in the Roles description our application has three different usage process flows. However, all of them have to go through the login / register process first. If you go on http://localhost:8081/ you will be automatically redirected to http://localhost:8081/login where you can either register a new account on the link or directly log in with an existing account.

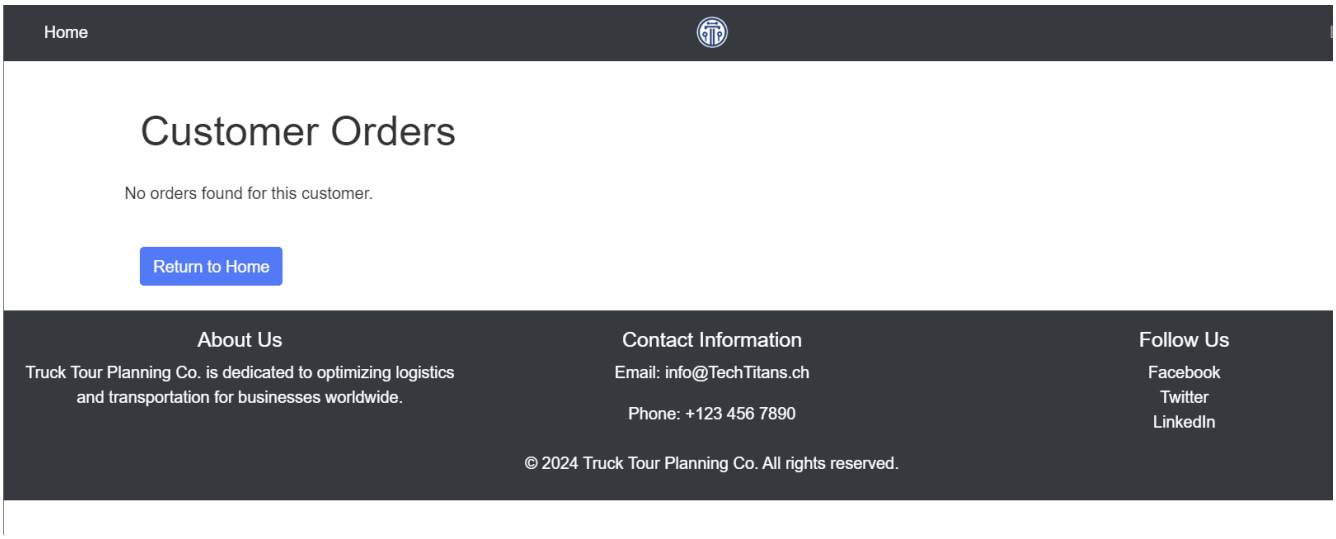




5.1 User/Customer Process flow

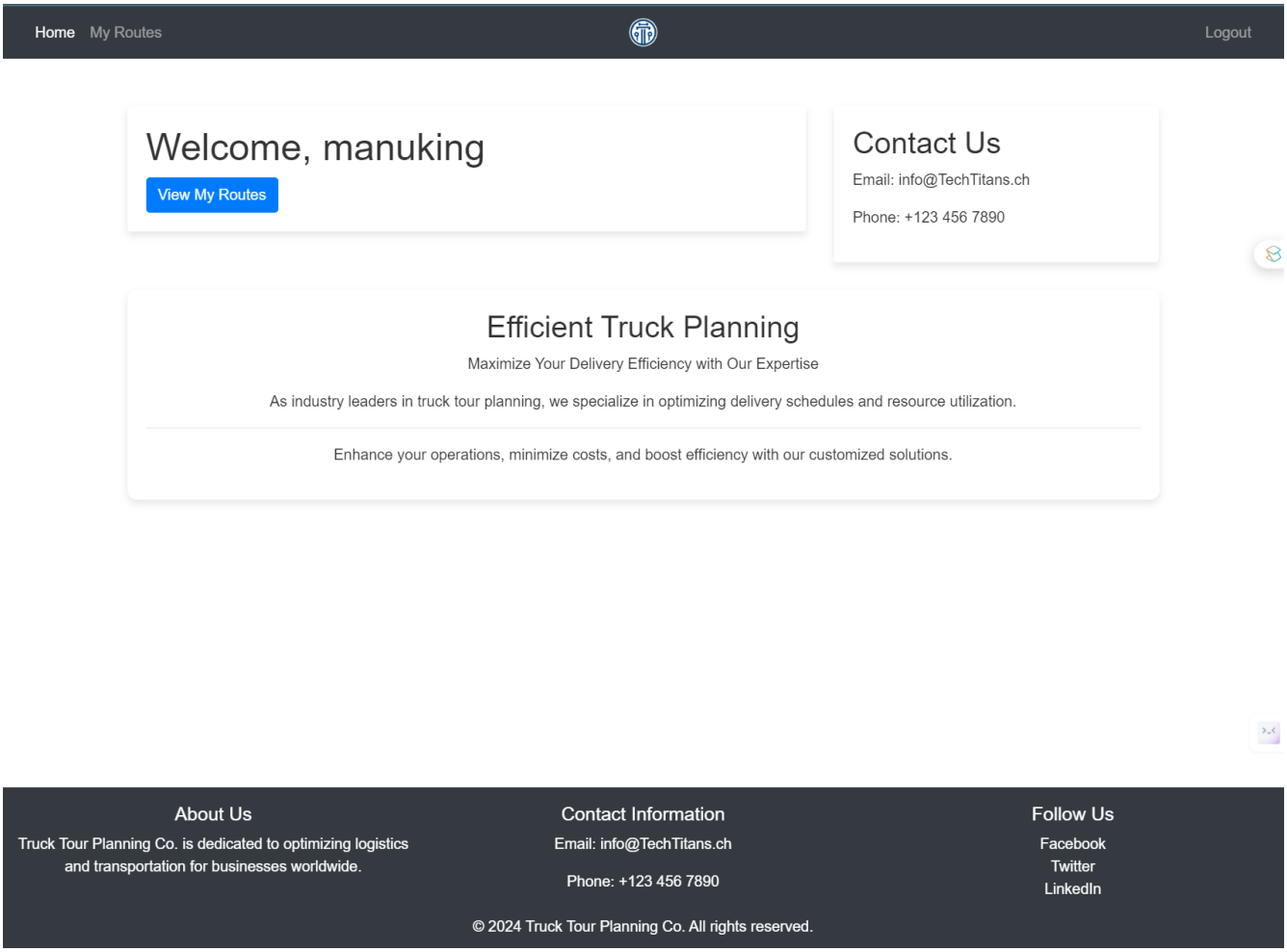
Login to the system and get redirected to the homepage. Click on My Orders where all orders connected to the customer id and this to the user id from the currently logged in user are being displayed:



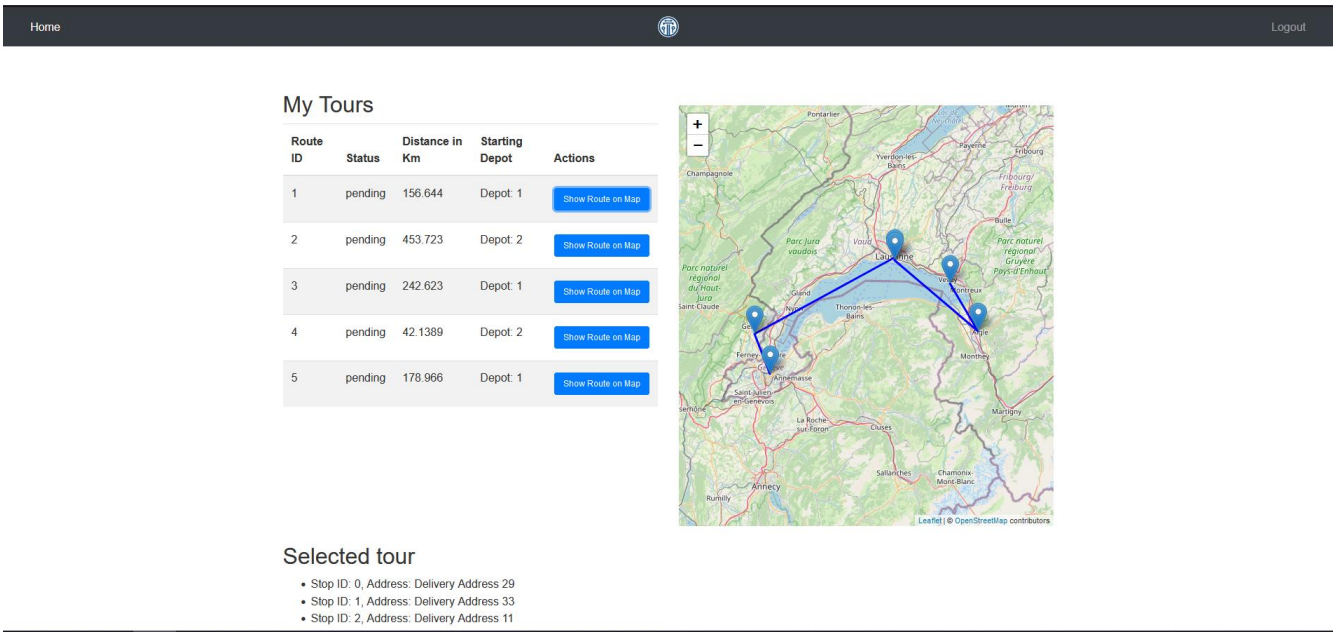


5.2 Truck Driver Process flow

Log in to the system and get redirected to the homepage. Click on View my Routes.

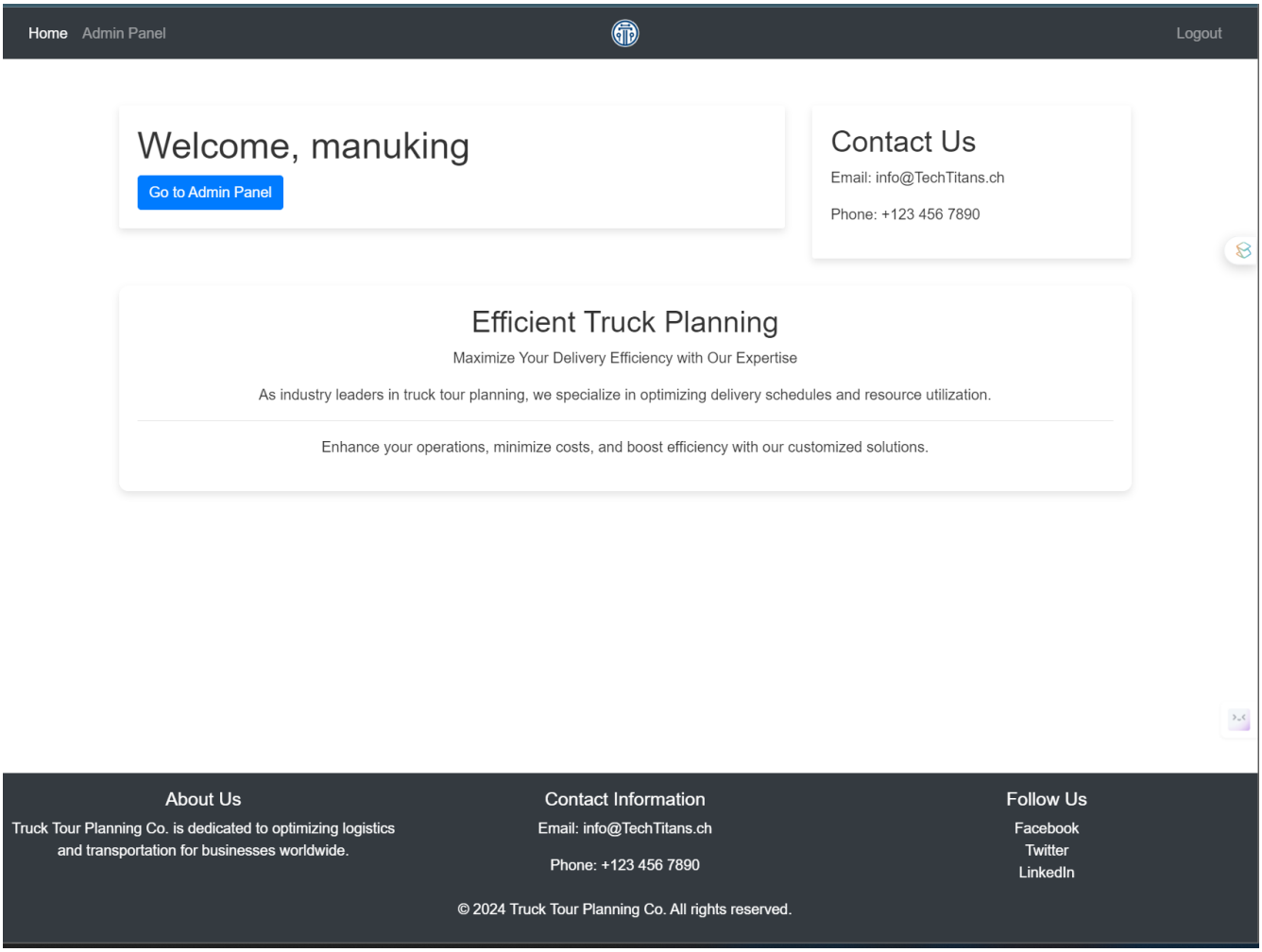


Check out all routes that are assigned to my user ID and manage the status of the routes.

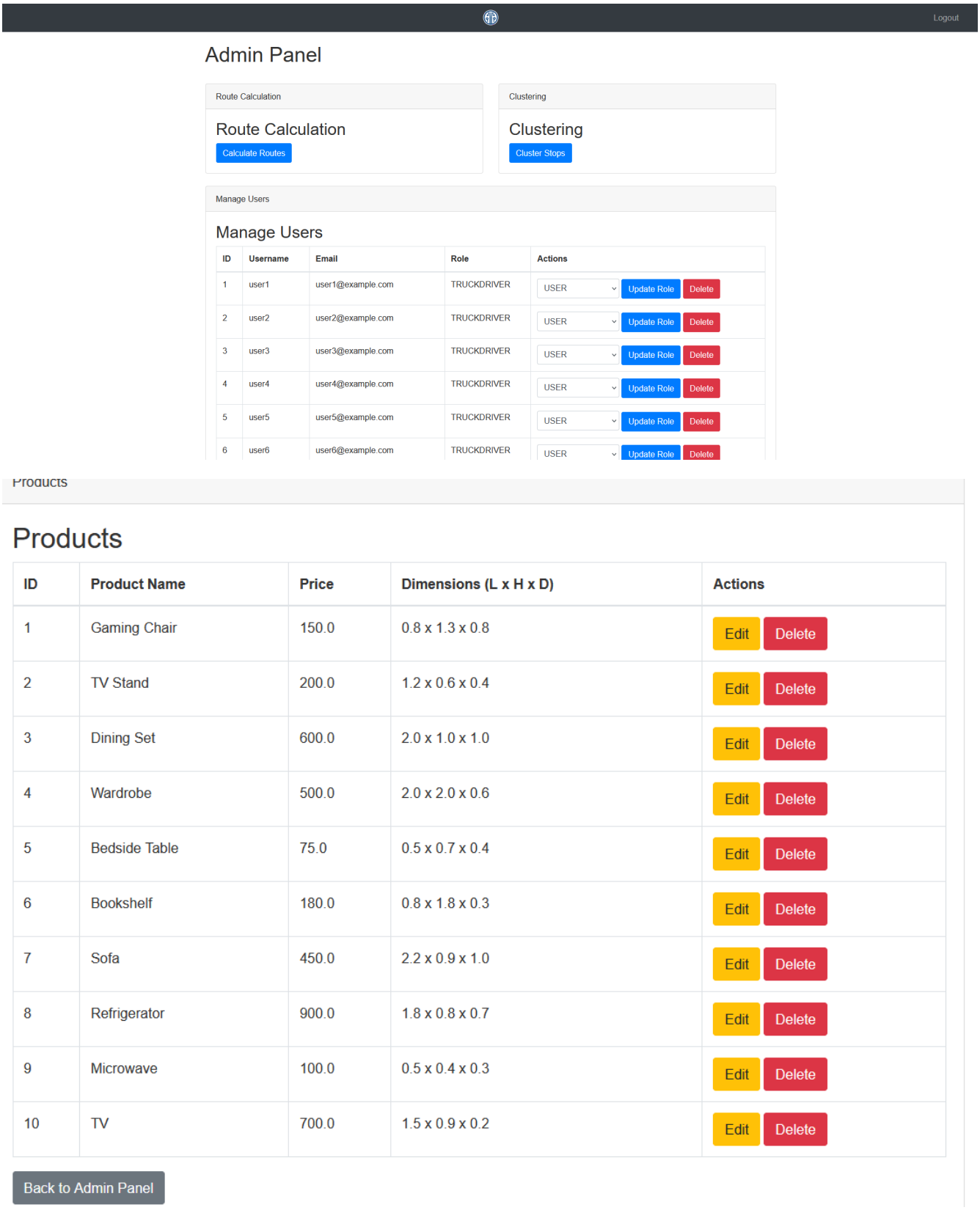


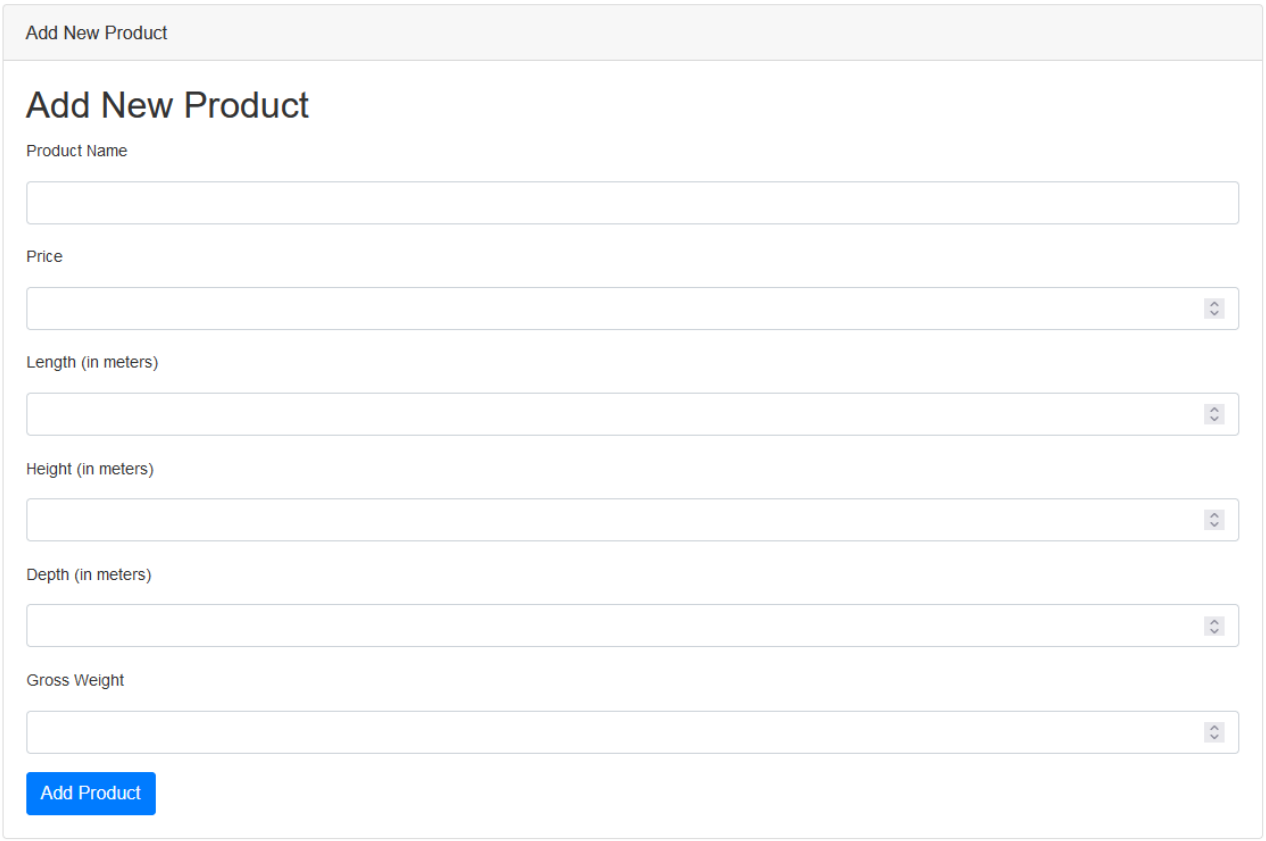
5.3 Admin Process flow

Log in to the system and get redirected to the homepage.

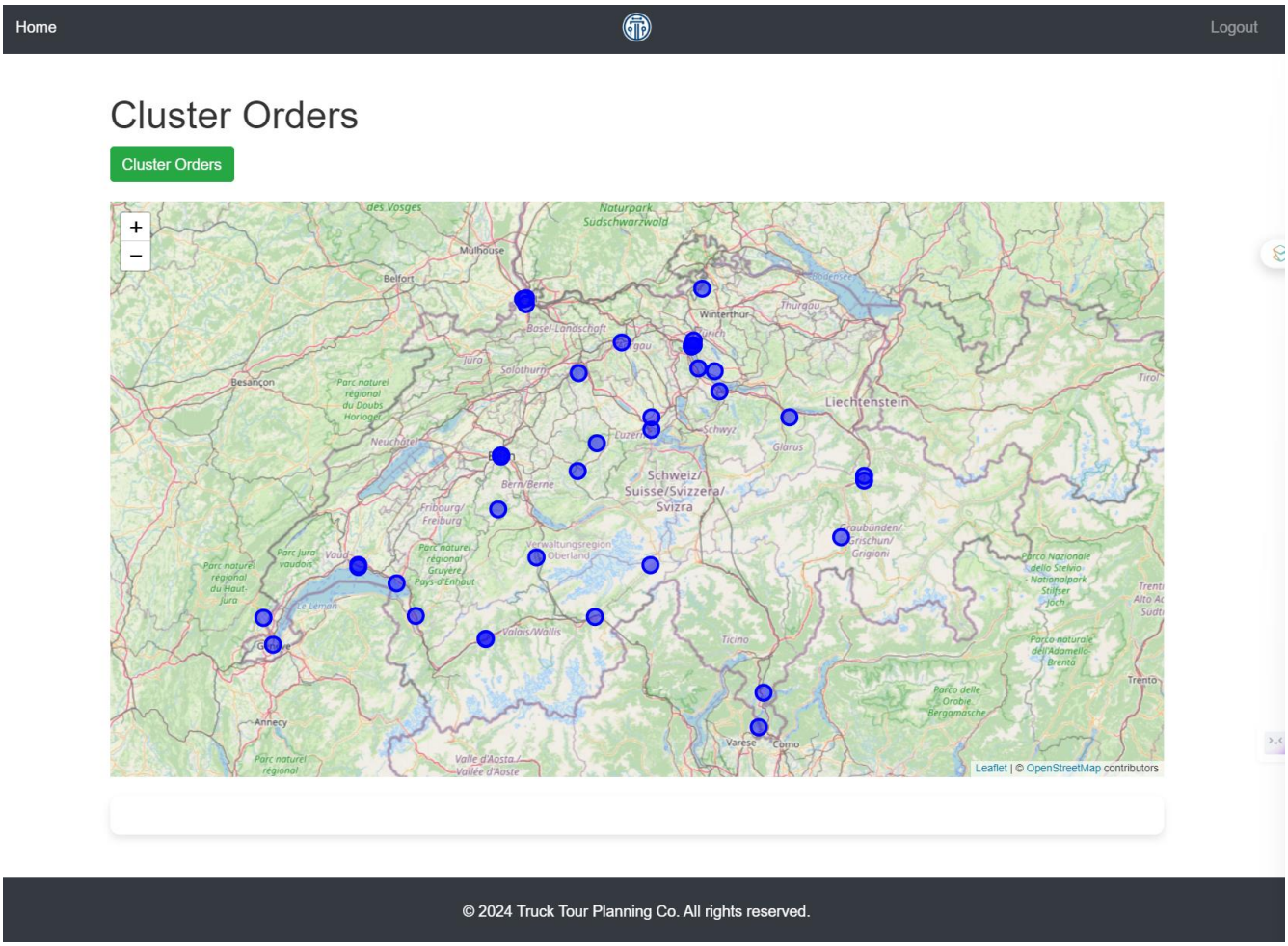


Click on go to admin panel. Manage user roles or update or insert new products. Go on the Clustering page where we can see all orders on the map that are currently in the database.

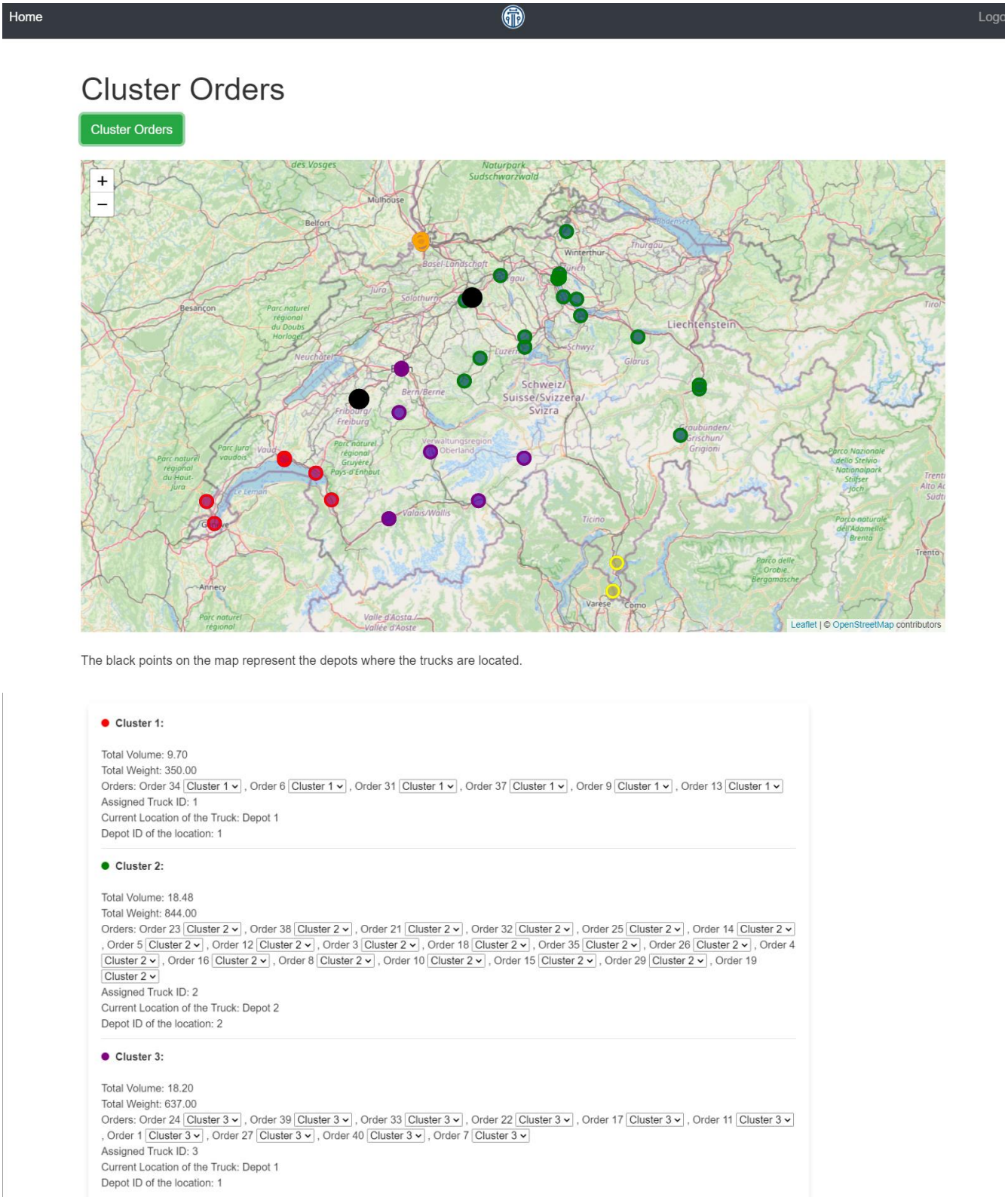



Add New Product
Add New Product
Product Name
Price
Length (in meters)
Height (in meters)
Depth (in meters)
Gross Weight
Add Product

Click on Clustering an see all orders that are currently in the database:



Click on Cluster Orders to start the Clustering algorithm and see the different cluster / Order points in different colours. See cluster details below the map. If wanted, assign the orders to new clusters manually.



Start the route algorithm for a specific cluster so it finds the best way between the orders in this cluster and stores it in the table route stop.