WEB ROUTING

Evaluation Manual

SLIPPERY ROCK UNIVERSITY

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# Overview

This document will talk about issues within the system. What can be done to fix those issues and Improvements that can be done to improve the quality of the system.

# Issues

1. **Localhost:8080/login**: Lockout for failed password attempts not implemented into the program
2. **Contact Admin Feature**: Users cannot contact an admin for help if designed.
3. **Technician Role**: Adding a technician role and user would allow for a maintenance orders portal through the technician, they could update maintenance orders, complete, and finish them.
4. **Validate SCAC Code**: SCAC codes are unique and cannot be duplicated, this is a domain issue. Records on SCAC codes can be found online, implementing a check would make sure no valse carriers are created.
5. **File Upload for Contact**: Adding contacts has a form, allowing a carrier to add contacts, a file upload would allow a carrier to quickly add multiple contacts all at once.
6. **Disabled User Message**: Users who do not go through email validation are denied access to the system until enabling, however a user might not realize this step and attempt to access their account and the message will not convey they are disabled.

# Fixing Issues

1. Fixing this issue could be done by instancing an object assigned to each user, the instance of an object assigned to each user would allow a counter to count the users failed password attempts, and password attempts would only be accessed by that user.
2. Contact admin feature could be implemented in navigation bar. Implementing would be creating HTML form, allowing permissions to users assigned roles. Functionality could be added to EmailingImpl Class. An admin email account can be created (Using google setting to POP) downloading each email, implementing an Admin page with defined instances (ensures only one admin could access an email at each time). And allowing email replies through the user interface.
3. Adding Technician Repository Class, Technician Domain class associated with carriers, implementing a role, creating pages and forms associated with the maintenance orders entities to ensure certified technicians can only work on what they are allowed to.
4. Using a SCAC code database to validate registered SCAC codes when an account is created, could be refreshed periodically to update changes if the database is updated.
5. Implementing a simple csv reader to work with the contacts entity.
6. Using model attributes to access the user.enabled and display this in a verbose manner to tell the user that they are not enabled.

# *4.* Improvements/future work

1. **Data Sanitization**: ***The*** ***Enterprise Routing System*** utilizes form-based data transfer between accounts. While a number of these form inputs are properly set up, there are numerous forms that contain fields not properly sanitized for valid database entries.

Examples Include:

1. SCAC code – Should not allow for special characters (Ex. !@#$%)
2. Zip Code – Should be a 6-digit code or a 10-digit code and limited to those restrictions
3. VIN Number – Should have a strict 17-character requirement
4. Plate Number – Should prohibit special characters and allow only the range of valid characters used on American license plates.

2. **Push Notification System:** The various roles in ***Enterprise Routing System*** would benefit from a role-specific, system-wide notification system.

**SHIPPER** accounts would benefit from push notifications when bids are placed on shipments as well as when shipments are picked up or dropped off.

**CARRIER** accounts would benefit in a variety of ways. They could be alerted to being outbid on a shipment or if their bid is accepted. They could also be alerted of assigned-vehicle arrivals and departures, as well as job quotes submitted by technicians providing maintenance for the vehicles.

**ADMIN** accounts could receive notifications from other accounts that require administrative assistance. They could also send push notifications to accounts that request password resets when the reset is conducted.

**ALL** accounts could each benefit from notifications when other user accounts are added into their book of business (or into the system for **ADMIN** accounts).

With an addition of a technician role this update would be integral to the workflow of it.

3.**RFID/GPS Tracking Service**: Most logistics servicing companies that employ programs like ***Enterprise Routing System*** offer tracking services for shipments, either by placing RFID chips on the package/truck or through GPS tracking. A simulation for this feature could be conducted using the coordinate entries of Start/Finish locations for shipments. Having the option to ping a package via package # lookup would be the logical integration of this service with a notification system.

4. **Log Interface:** Implementing a graphical interface for an in-browser console for **ADMIN** accounts to utilize to read logs and issue system commands to make for more effective troubleshooting with user accounts or the system itself.

5. **Drivers Role**: Creating a user for drivers or allowing carriers to create a driver user for their system would allow drivers to access their routes assigned to them and quickly get the directions from the routes interface. They could also send updates to shippers and carriers this way via an interface.

6. **Mobile Application**: Truck drivers are always mobile and would greatly benefit from being able to interface with their company/contractor to gather information on the shipment manifest and accept jobs. Wireframing with Adobe XD/Figma to accommodate various form factors would allow for the mobile application to be properly styled from the existing web application.

7. **Expanding Profile Pages**: profile-specific information is available to the roles in ***Enterprise Routing System***. The program would be made much clearer with a metric-comprehensive profile page for the users, developed with the roles in mind.