COMP 3095 – Java Web Application Development

Assignment 3
Due Date: Sunday, December 6th, 2020 (11:59 pm)
Team Size: 2 – 4 Team Members.

Problem statement:
Having submitted and reviewed your last assignment, your manager is presently surprised in your capabilities. The management team has taken note to your strong skill-set and have overwhelmingly received excellent feedback directly from the clients on the first phase of the application.

Based on the review of your previous assignment however, the clients have now come back to your managers and business analysts (BA) with the final rounds of requirements. These new requirements have been gathered by the BA's and after a number of meetings, have been conveniently documented into an updated business requirements document. The summary of these new requirements has been captured in the wireframes and pages below.

Your manager continues to be under direct pressure from the company Director to produce the final product that essentially encompasses all client requirements. Your manager, fully recognizes your potential, has much more confidence in you and is now allowing you to lead the remaining portion of this project to project completion and delivery.

Please note, for this Assignment, you are required to build upon and extend the previous assignment. Again, you will continue to use, **Spring/Spring Boot, Maven and Thymeleaf**. Your assignment **must** meet the requirements as specified below at a **minimum**.

The Proposed Web Application Site Map

The secure payment processing website allows access with two different types of users, **client** users and **admin** users. In both cases, the navigation for each has been mapped out and provided in the navigation site maps below.

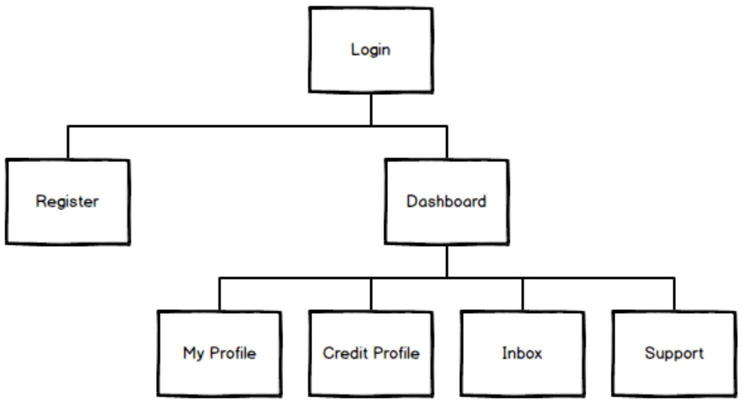


Figure 1: Client navigation site map

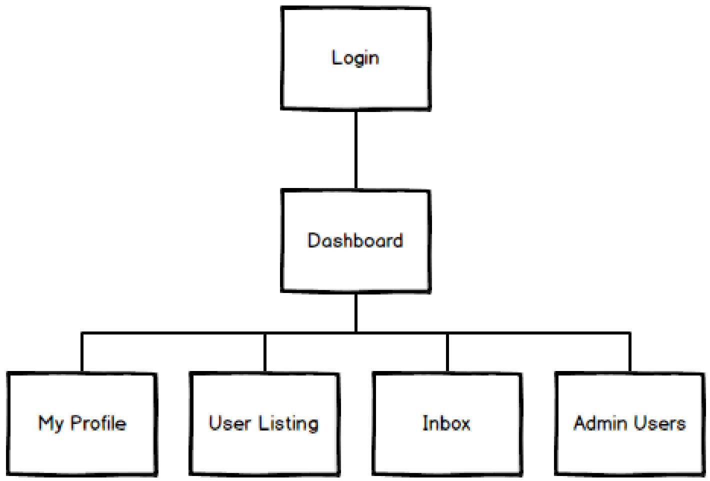
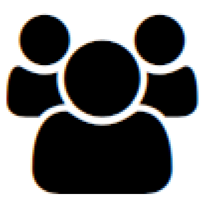
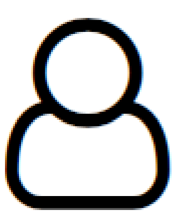


Figure 2: Admin navigation site map

Navigation Page Summary

Title	**Role**	**Brief Description**	**Phase**
Login Page	Both	Login page. Username and password authentication required.	Phase 1
Registration Page	Client	Registration page for users of the system. All clients must be registered in order to utilize the system.	Phase 1
Dashboard	Both	A data dashboard is an information management tool that visually track activity of the web application based on user or admin profile.	Phase 2
My Profile Page	Both	Allows a client or admin to add/delete/update/view their personal account information.	Phase 2
Credit Profile Page	Client	Allows a client to add/delete/update/view one-to-many credit card profile under their account and configure one card as the default (or preferred) card.	Phase 2
Inbox Page	Both	Allows a client to send/read/delete messages to the support team/email of the system. Allows an admin to send/read messages from incoming client requests. The incoming client requests are randomly added to the inbox of only one of the active admin users to service.	Phase 2
Support Page	Client	Allows a client to send message to support.	Phase 2
Users / Listing Page	Admin	Allows admin users to view all registered accounts of then system.	Phase 2
Admin Users Page	Admin	Allows admin users to add/delete/update/view admin users to the system.	Phase 2

Roles / Authorization

<table>
<tr><td>
Figure 3: Clients</td><td>A client must register to utilize the web application
A client must register via the web application register page
There can be many clients of the system</td></tr>
<tr><td>
Figure 4: Admin User</td><td>An admin user administers the website (elevated privileges)
Admin users are created on Admin User page
There can be many Admin users in the system.</td></tr>
</table>

Wireframes

Please note, the wire frames provided below (and in this document in general) are mock-ups only, and are provided simply to more easily convey a way of presenting the requirements for that page. In all cases, the Business Analysts have decided to leave the final design up to the developers to ultimately determine and implement.

Each wireframe is a minimum guideline not the rule, so creativity is welcome.

Dashboard - Client

The Business Analysts have provided a wireframe mockup of a potential client Dashboard page below:

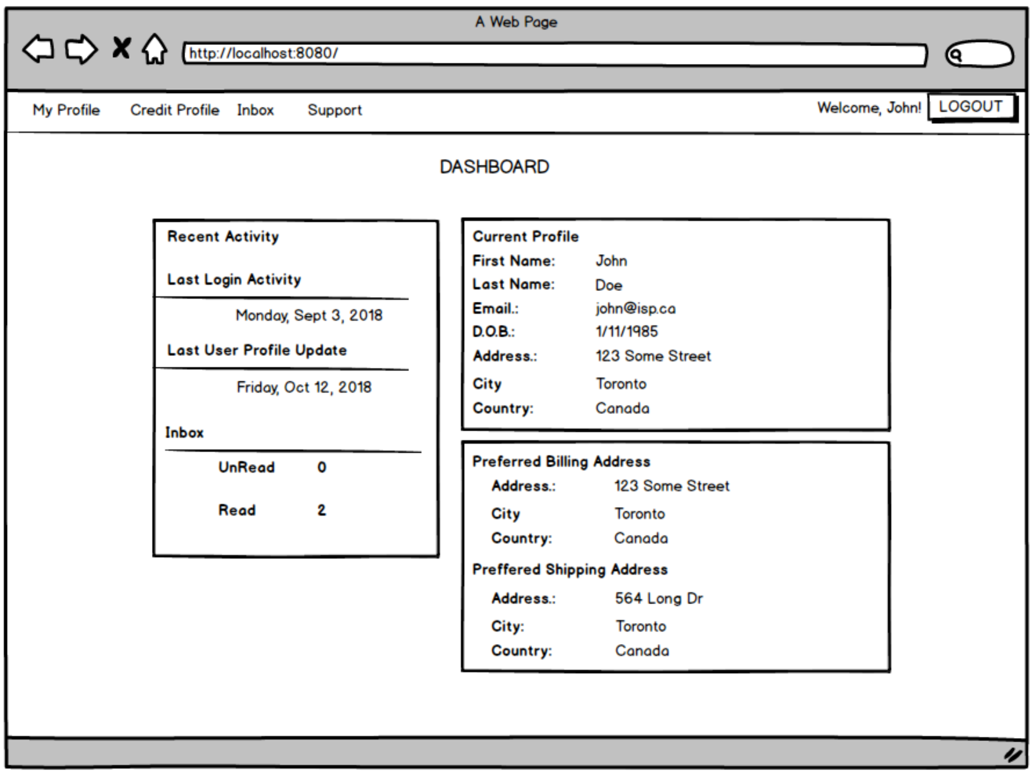


Figure 5: Client Dashboard

The Client Dashboard has three separate sections described as follows:

1. **Recent Activity section**, simply displays last login recorded for the user, last profile update and the status of their inbox messages (review "Inbox" page for client).
2. **Current Profile section**, displays the current stored profile for the logged in client.
3. **Preferred Billing and Preferred Shipping Address sections** – simply displays the configured Shipping/Billing address of the logged in user.

My Profile - Client

The Business Analysts have provided a wireframe mockup of a potential client My Profile page below:

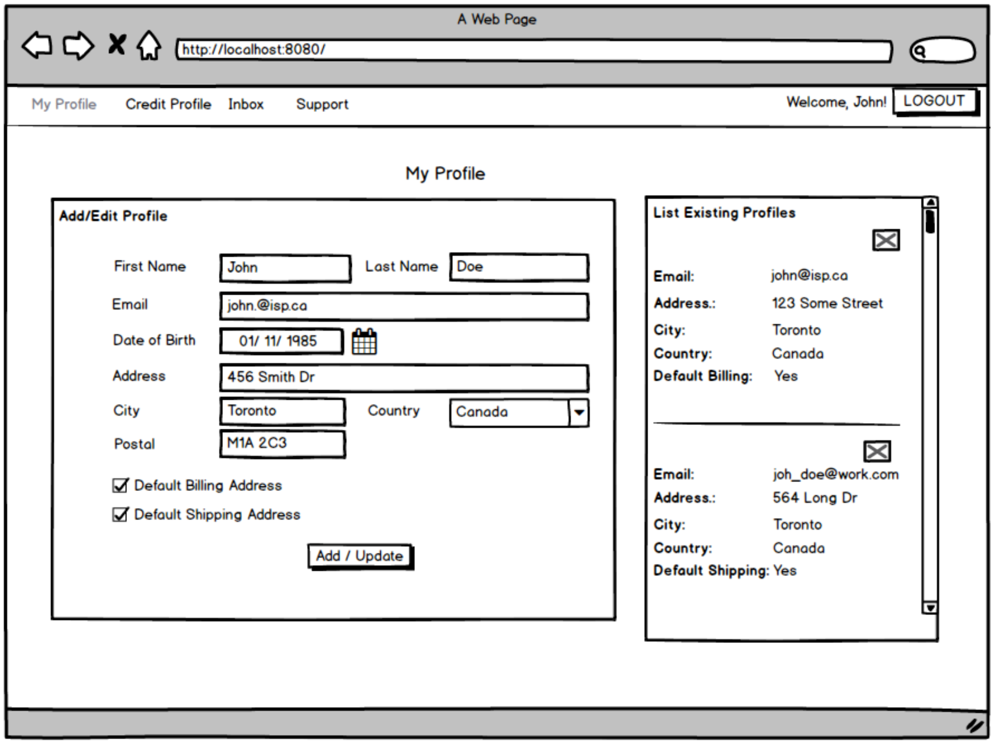


Figure 6: My Profile - User

The client "**My Profile**" page allows a client user to create/delete/update or view their current profile information (Name, Address, D.O.B etc…). It also provides a side listing of all the profiles they have registered in the system. A user can have any number of profiles, but can only have only one unique name (first and last) and date of birth. Additionally, only one address can be configured as the default shipping address, the equivalent can be said of the billing address. A mechanism should be also present on this page to allow the user to easily their profile from the system. A user can delete as many profiles as they desire, however, at least one profile must always remain.

The main area of this page allows the client user to add or update existing profile information simply by filling out the form data and submitting. The side listing should reflect the changes of the add/update.

Credit Profile – Client

The Business Analysts have provided a wireframe mockup of a potential client Credit Profile page below:

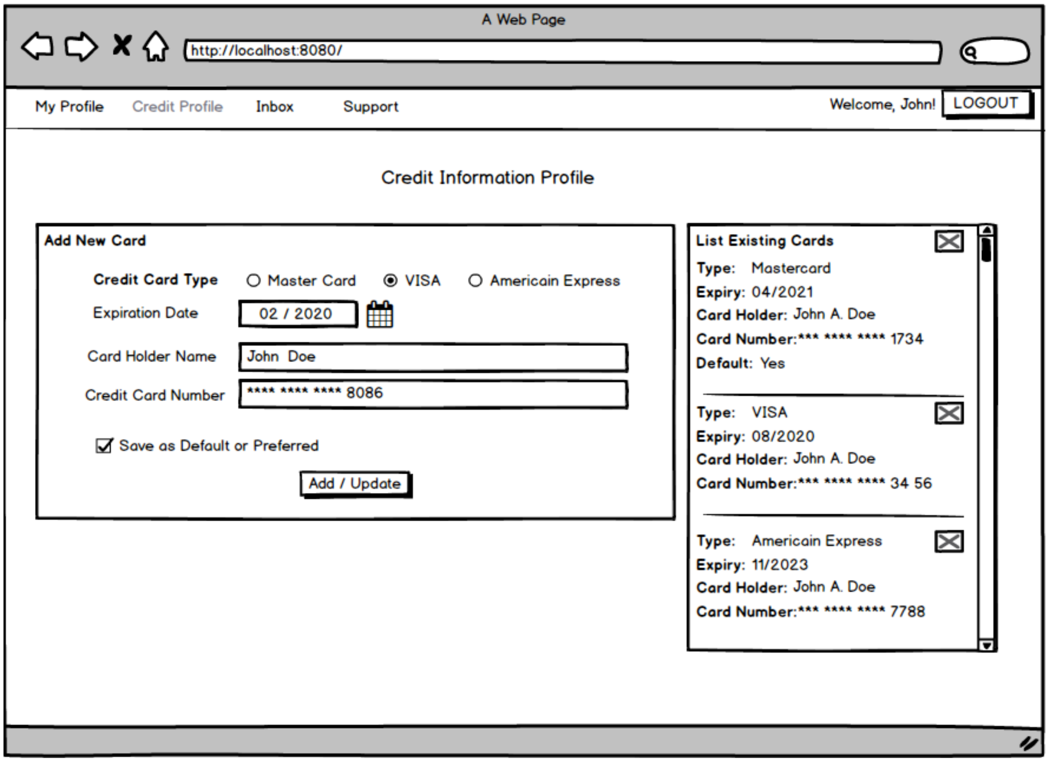


Figure 7: Credit Profile - Client

The "Credit Profile" page allows a user to add/delete/update or view their credit profile information. Users can have 0-to-many "Credit Profiles" but only one credit profile can be configured as the default.

Inbox - Client

The Business Analysts have provided a wireframe mockup of a potential client Inbox page below:

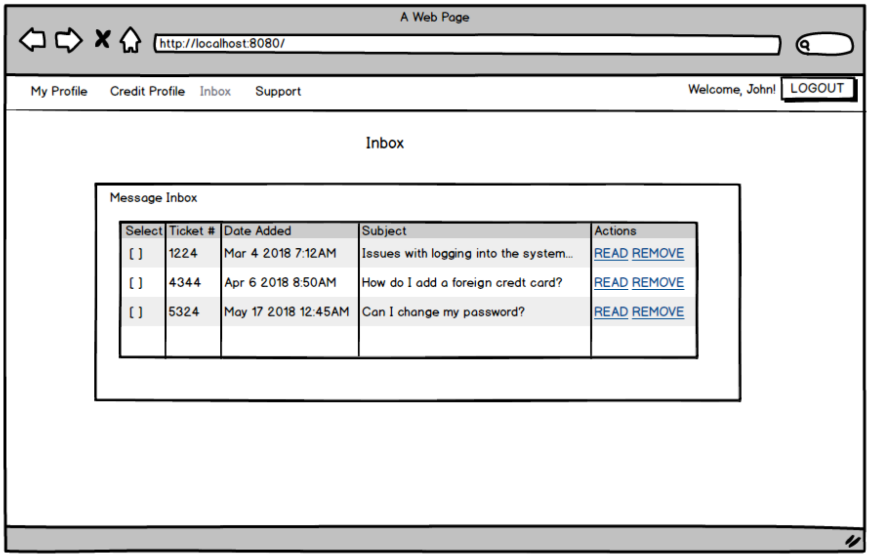


Figure 8: Message Inbox - User

The "Inbox" page allows a client user to view or delete support messages only. There is no mechanism to allow a client to reply to messages. Additionally, a client can only create support messages via the "Support" page (Fig 9). In effect, this page only allows it users to receive, view (read) and delete message from their inbox.

Support Page – Client

The Business Analysts have also provided a wireframe mockup of a potential client Support page below:

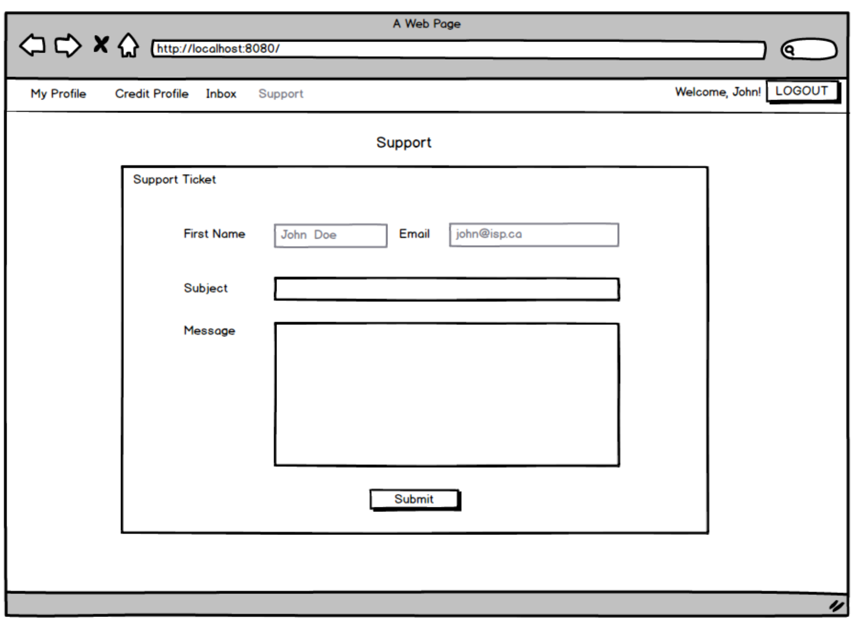


Figure 9: Support Page - Client

Dashboard - Admin

The Business Analysts have also provided a wireframe mockup of a potential admin dashboard page below:

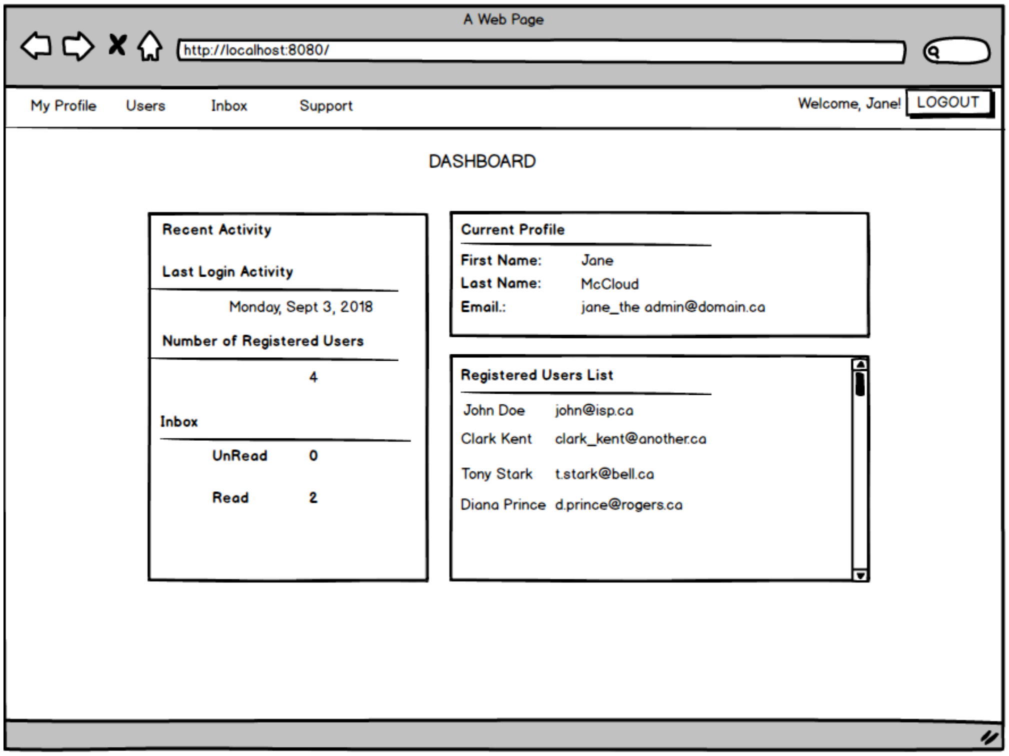


Figure 10: Dashboard - Admin

The Admin Dashboard has three separate sections described as follows:

1. **Recent Activity section**, simply displays last login recorded for the admin user, total number of registered users, the status of their inbox messages (review “Inbox” page for admin).
2. **Current Profile section**, displays the current stored profile for the logged in admin user.
3. A scrollable list of all Client users in the system.

My Profile - Admin

The Business Analysts have also provided a wireframe mockup of a potential Student Support page below:

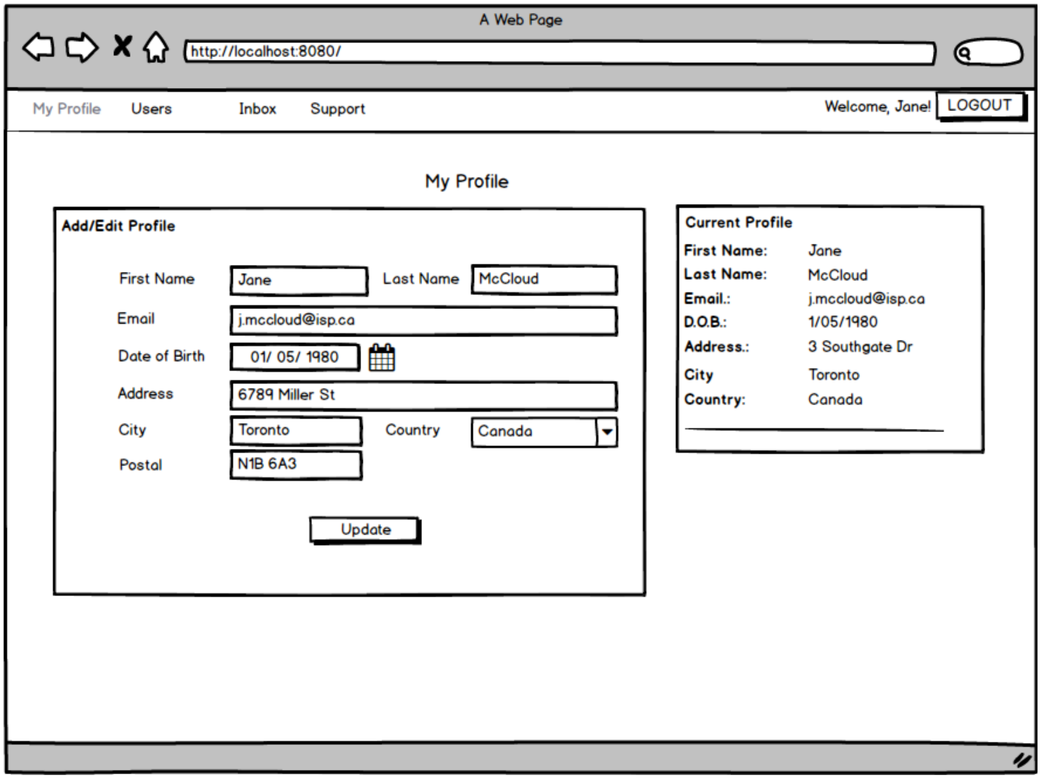


Figure 11: My Profile - Admin

The admin "My Profile" page allows an admin user to create/delete/update or view their current profile information. It also provides a side listing of their current profile they have configured in the system. An admin user can only have one profile in the system, but can actively update their profile. An admin user must always have an actively configured profile within the system at all times.

The main area of this page allows an admin to update their existing profile information simply by filling out the form data and submitting. The side listing should reflect the changes of the update.

Users Page - Admin

The Business Analysts have also provided a wireframe mockup of a potential admin User Listing page below:

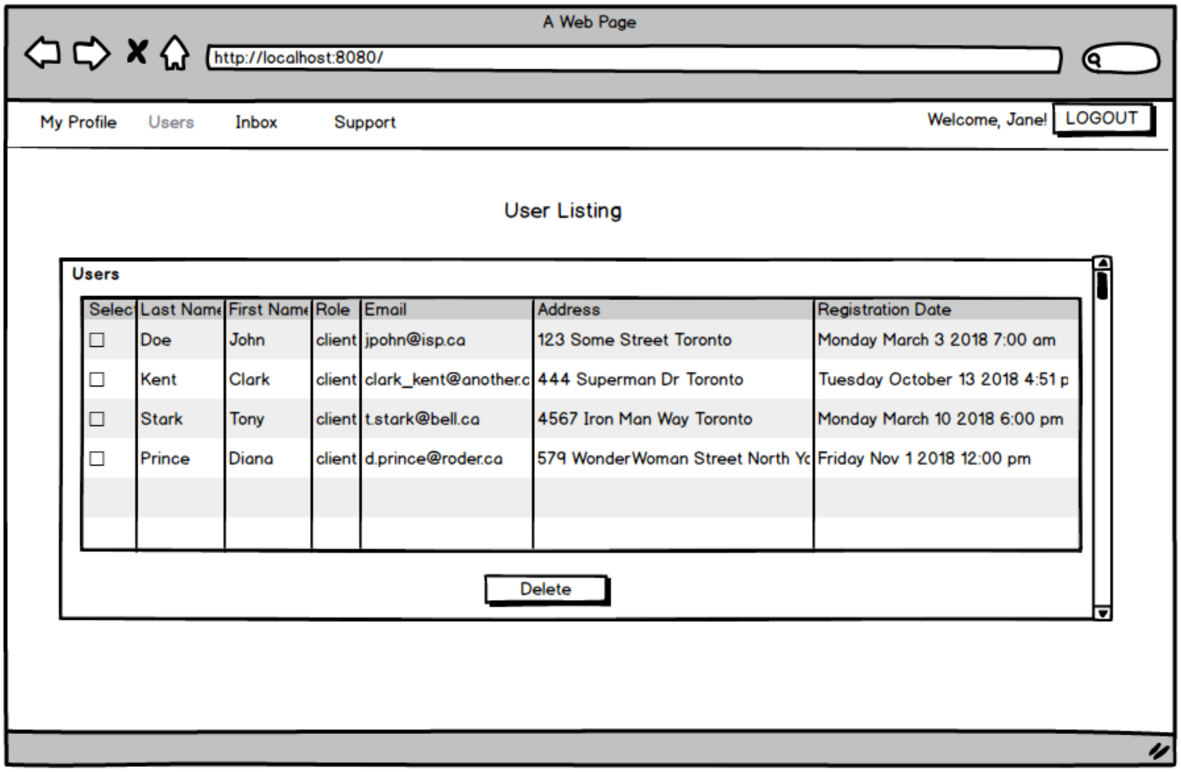


Figure 12: Users Page

The User Listing page simply lists the complete set of users in the system, the result set rendered is the complete results set of all Client and Admin users configured in the system.

An admin user can delete users from this page, including other admins. An admin user however, cannot remove/delete their own account.

If an Admin user deletes a user with an active session open, the system must be intelligent enough to revoke the session of that user and effectively kick the user out of the system.

Inbox - Admin

The Business Analysts have also provided a wireframe mockup of a potential admin Inbox page below:

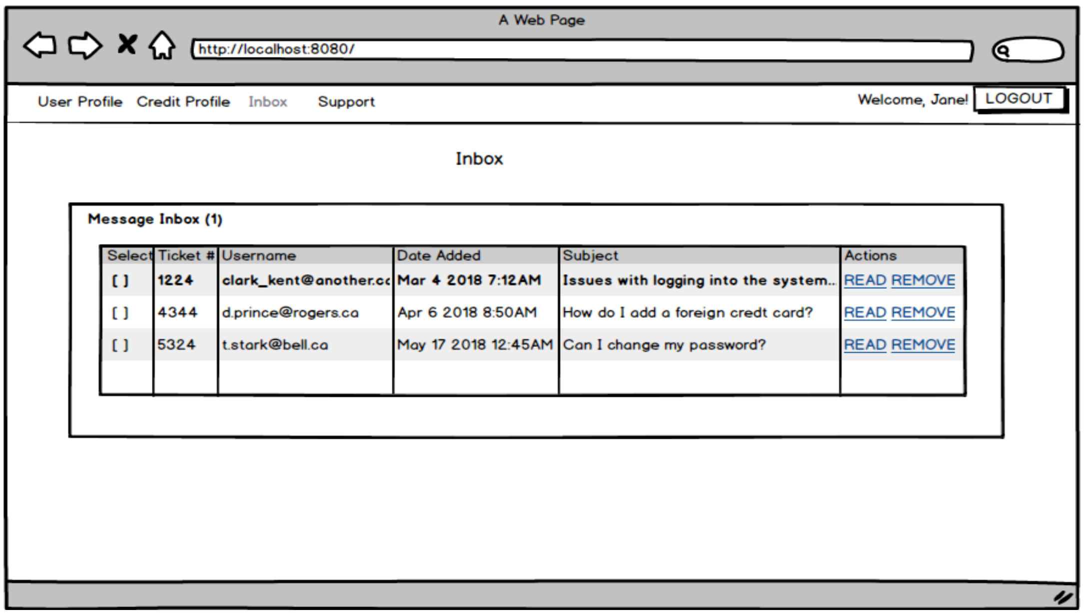


Figure 13: Inbox – Admin

The admin "Inbox" page allows an admin user to view, delete, and reply to incoming support messages (Fig 14). A client message can only be placed on an admins queue, and no two admins can view or access the same message. In effect, incoming client support messages are randomly placed on one and only one randomly selected admin's queue

In the event an admin user is deleted from the system, that admins **new** messages must be transferred to another available admin in the system, again randomly selected.

Reply to Support Message - Admin

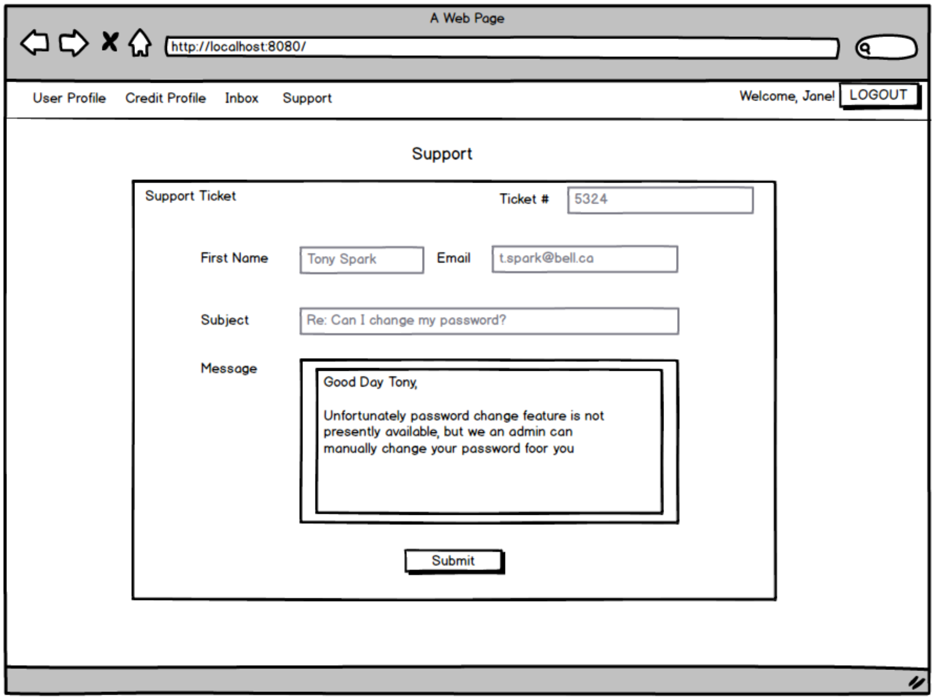


Figure 14: Reply to Support Message – Admin

The wireframe above shows a potential design of the interface an admin user would be presented with if replying to a support message.

Support - Admin

The Business Analysts have also provided a wireframe mockup of a potential admin Support page below:

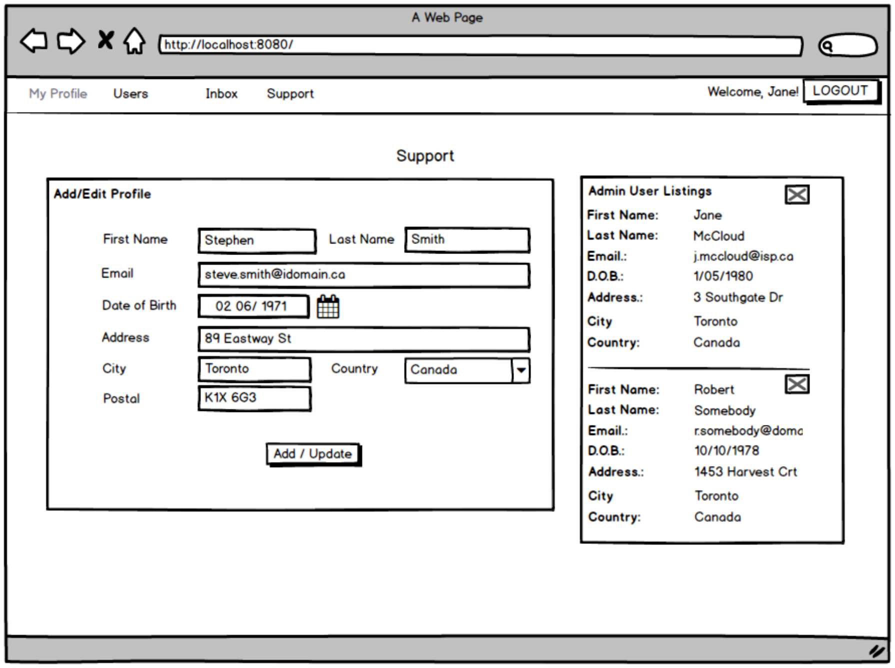


Figure 15: Support Page - Admin

The admin Support simply allows an admin user to add new admin users to the system. The system can support many admin users. A side panel view displays all admin users within the system along with their profile details.

Database and Data Persistence

Knowing this assignment is an extension of the previous assignment, you will still be required to implement (modify) your data persistence in order to store and meet the full requirements of this assignment.

Validation Requirements

All pages, except the Login and Registration pages, should be private and **not** publicly accessible to users who either have not authenticated or failed to authenticate.

Assignment Submission Guidelines:

1. You must email your assignment to your manager (Professor Santilli) at **Sergio.Santilli@georgebrown.ca**
2. All members in the project team must be cc'd on the final assignment submission. Failure to do so will result in a mark of zero for those members not cc'd on the assignment submission email.
3. Within the body of the email, clarify course code, team name, team members and student numbers. Title the email accordingly COMP 3095 – Assignment 3.

   Example:

   Course: COMP 3095
   Team Name: The Hackers
   Team Members: John Smith - 1234567
   Sally Jones - 7654321
   Jane Wilson - 2342342

4. When uploading, cc' a copy to yourself for backup and time verification.
5. The uploaded compressed file must be in **.rar** or .**zip** format.
6. The .zip/.rar file naming convention as follows:

   COMP3095_**YOUR_TEAM_NAME.**rar or COMP3095_**YOUR_TEAM_NAME.**zip

   Example: COMP3095_The_Hackers**.**zip

   *where **YOUR_TEAM_NAME** should be replaced with your team name in the company.

7. Each java file (.java) should include a header.

```
//********************************************************************************
* Project:          < project name … >
* Assignment:       < assignment # >
* Author(s):        < author name …>
* Student Number: < student number … >
* Date:
* Description:      <describe the java file and its purpose briefly only – 1 or 2 lines>
********************************************************************************//
```

8. Your code should be modular and should show no signs of dry (don't repeat yourself) code.
9. You are required to devise and use a form of persistent data storage.
10. The technologies used for this assignment are Spring/Spring Boot, Maven, and Thymeleaf.
11. Your manager should need only to deploy your application and be able to use and evaluate your application immediately (navigating to the pages described).
12. Be cautious **DO NOT** share your application with others. Complete failures will be assigned if code is shared. All assignments will be reviewed and analyzed strictly within these regards.
13. Late assignments are assigned a penalty of 25% per day.