

## Project Requirements Document v2

**Project Title:** Salauth

**Team Salauth:** Erin Ambriz (Lead), Isaiah Gama (Scribe), Mauricio Muñoz, Robert Gee, Jason Dunne.

**Sponsor:** Appfolio

**Mentors:** Justin Pearson, Wade Varesio, David Weitz, Graham Preston

### **Introduction:**

#### **Background and Assumptions:**

User authentication can be difficult. One of the most important features of any website is a “reset password” feature, since users can find it difficult to make passwords that are both secure **and** memorable. It happens all too often: you are trying to sign in to a website you visit often, but find that for whatever reason, you are signed out. You sit there and either: use a password manager linked to your device, or sit and struggle to remember your password, likely resetting it. This is a cumbersome act that many users dread, leading to bad practices, such as reusing passwords among multiple sites and services. Our goal is to make this process much easier. Imagine being able to log in to all of your important services and sites from any smart device, with just a picture of your face. That is what we are working on providing with our project, Salauth. Working similarly to options like “Sign in with Google” or “Sign in with Facebook”, you will be able to Sign in with Salauth, prompting for a live scan of your face, and logging you into your account! No usernames to remember, no passwords to keep, just your face. The convenience is undeniable. Imagine you have a new device with no cookies to keep you signed in, and no saved passwords. Right now, that would probably mean a lot of reset passwords. However, with Salauth, that’s not a problem at all! As long as you have your face, you can authenticate yourself and still log in to all of your accounts!

#### **Project Specifics:**

In order to implement our project, we will use a variety of modern technologies, including React, React Native, AWS, Node.js, and Firebase. Using AWS’s Rekognition engine, we can ensure industry standard facial recognition and security for our users. This will make sure that 2D photo-based attack attempts, and other similar spoofing attempts will be thwarted.

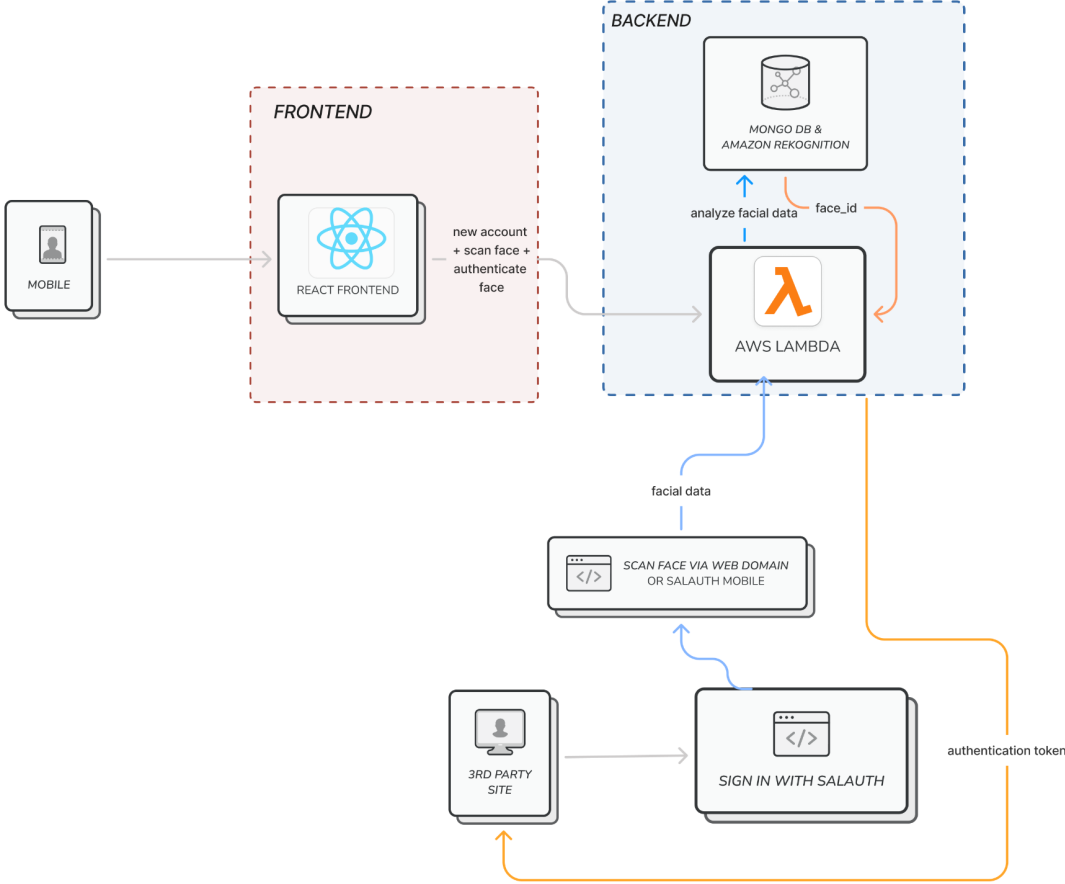
Demonstrating the value of our product will require building a demo site, which will be used to showcase how potential adopters will be able to implement our service seamlessly into their site. We plan to optimize redirects and closely follow the infrastructure surrounding "Sign in with Google " as closely as possible in order to make our service as performant as possible. This is important to us since we want this authentication process to happen as quickly as possible. It should last no longer than it would take a user to manually type a username and password manually, on average.

**Team Goals/Objectives:**

Our goal is to have a fully functional facial recognition service setup, with an API offered for web developers to implement our services seamlessly into their existing login systems. Offering our service as an API would make it much easier, and therefore more likely, for existing services to adopt Salauth as a form of authentication into their sites. We plan to first showcase our API in our demo site. As we perfect the service and can demonstrate its security and value, we are hopeful to implement this in a real-world site (most likely Appfolio's QA site).

# System Architecture Overview:

## High Level Diagram:



### **User Interaction and Design:**

Users will interact with our service via two mediums, the mobile app and the web components.

#### Mobile App (iOS):

- When a user opens the app, they will be prompted to either create an account or sign in. They will do so with an email and password.
- Part of the account creation process would be to set up a facial recognition scan, and the mobile app would also allow the user to update their scan if they see the need to.
- Users would also be able delete their account and facial scans from our mobile app, further deleting the key and biometrics from our database.
- The home page of the mobile app would show a list of current accessible websites that support their Salauth login.
- The mobile app would also be a place where the user can use their mobile device's camera to authenticate their login.

#### Web:

- On a Salauth partnered website, users will see the 'Sign in with Salauth' button.
- When 'Sign in with Salauth' is used, the user will be redirected to a domain where a facial scan is taken to authenticate their login.
- Once sign in is authenticated, the user is redirected back to the original website and is logged in.

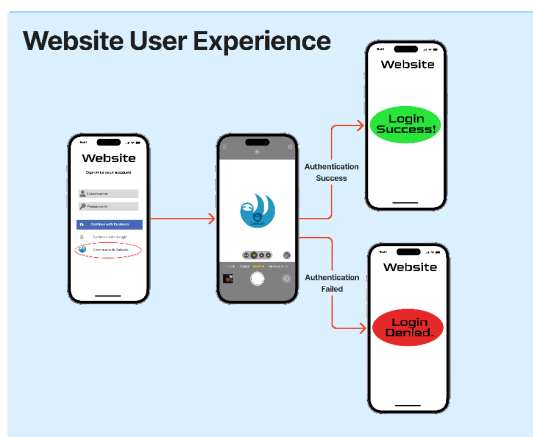
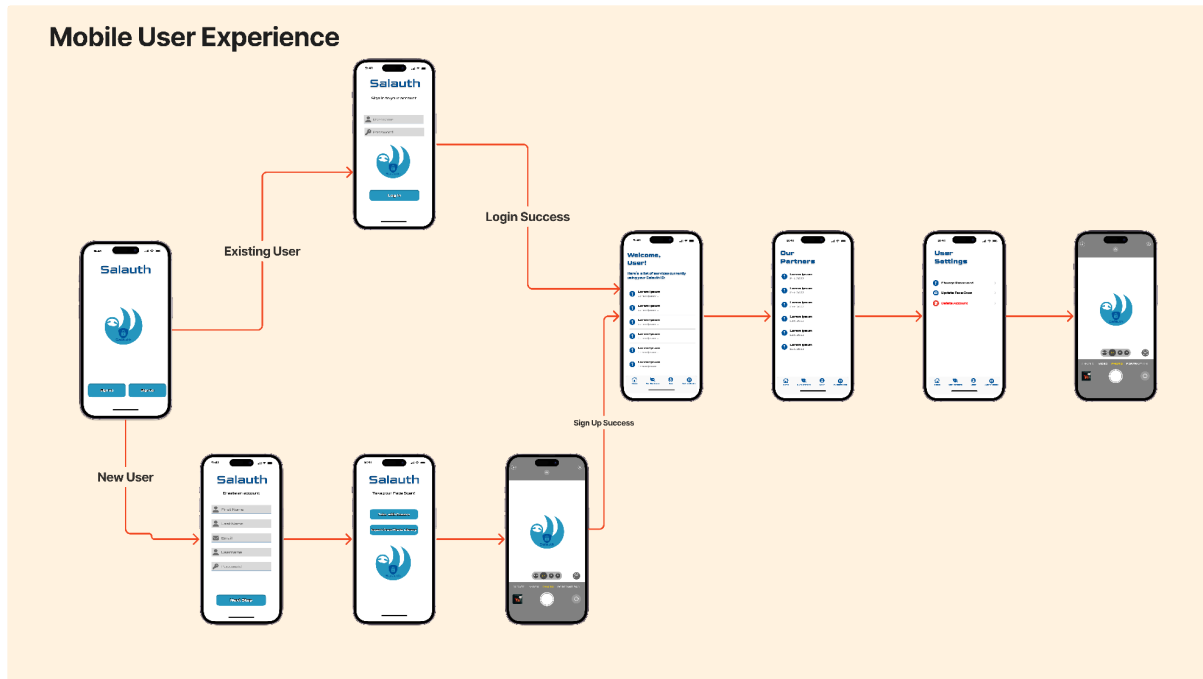
#### Secondary Users (Website Admins):

- As an admin of a Salauth partnered website, the admin should be able to import the keys needed for the authentication to their user database.
- Admins should also be able to reference our documentation to incorporate the 'Sign in with Salauth' button, as well as setting up communication to our API that will be handling authentication.

## UI Design Mockup:

Link to FigJam File:

<https://www.figma.com/file/IWDy0t8ExWRED9sn3Psg8/Diagram---Salauth-UI?node-id=0%3A1&t=Q3TMe7VaSMD8vQmW-1>



## Requirements (functional and non-functional):

### User Stories (Links to PRs in Trello Cards):

1. As a user, I want to be able to see a Landing Page when I open the Salauth app for the first time.
  - Issue: <https://trello.com/c/NwVIPPGK>
  - Scenario 1: User opens the app and sees a landing page before being redirected to the sign up page or their home page if they are already logged in.
2. As a user, I want to be able to enter sign up credentials when I am signing up for Salauth for the first time.
  - Issue: <https://trello.com/c/UEK3unzC>
  - Scenario 1: User enters in credentials that fit the sign up criteria, and their sign up process moves onto the face scan screen.
  - Scenario 2: User enters in credentials and they are stopped from moving on due to an email already existing with an account.
3. As a user, I want to be able to take my initial face scan during the signup process.
  - Issue: <https://trello.com/c/j976bAoh>
  - Scenario 1: User's face scan is not similar to any face feature vectors already in the database so it is added as a new face in the Collection.
  - Scenario 2: User's face scan is similar to at least one face feature vector already in the database meaning that it is a duplicate user so the user is stopped from completing the account sign up process.
4. As a user, I want to enter my login credentials if I am an existing user of Salauth.
  - Issue: <https://trello.com/c/mItoDIBh>
  - Scenario 1: User successfully enters login credentials and gets access to their Salauth account.
  - Scenario 2: User does not successfully enter login credentials and does not get access to their Salauth account.
5. As a user, I want to be able to view my Home screen and what services I am currently using with "Sign in with Salauth".
  - Issue: <https://trello.com/c/fJ7bqNOP>

- Scenario 1: Once successfully logged in, the user can view the Home screen populated with what websites are currently registered with their Salauth login.
6. As a user, I want to be able to view what websites are currently partnered with Salauth.
    - Issue: <https://trello.com/c/yORfnAen>
    - Scenario 1: A user should be able to navigate to the 'Partners tab' and view a list of all partners that are registered with Salauth.
    - Scenario 2: A user should be notified when a new partner is added to Salauth.
  7. As a user, I want to be able to scan my face using a web interface so that I don't have to pick up my phone.
    - Issue: <https://trello.com/c/kJJxSsmB>
    - Scenario 1: A user should be able to press 'Sign in with Salauth' when signing in to a website and be redirected to a domain where they can scan their face and be signed into the website.
  8. As a user, I want to be able to set up what my displayed username should be on websites that I sign up for with Salauth.
    - Issue: <https://trello.com/c/bnrznCKt>
    - Scenario 1: User successfully submits what username to display on websites. This change is reflected on the hosting websites
    - Scenario 2: There is an error when submitting the username change. There is no change reflected on hosting websites.
  9. As a user, I want to be able to use my mobile device to authenticate my facial scan when signing into a website.
    - Issue: <https://trello.com/c/rN1x8u8e>
    - Scenario 1: A user should be able to press a button on the redirect domain to transfer the face scan to my mobile device in the Salauth app.
  10. As a user, I want to be able to view a settings page, where I can change login credentials.
    - Issue: <https://trello.com/c/JBDtBytz>
    - Scenario 1: A user should be able to navigate to the settings page and see an option for changing their login credentials.
  11. As a user, I want to be able to update my face scan within the mobile app if any of my major facial features change.

- Issue: <https://trello.com/c/Oh1LTprR>
  - Scenario 1: A user should be able to navigate to their settings tab and rescan their face and have their face feature vector updated in the Collection.
12. As a user, I would like to be able to reset my password via email if I forget it.
- Issue: <https://trello.com/c/f70OsLId>
  - Scenario 1: A user should be able to press a button on the login screen to reset their password, which would send them an email to reset their password.
13. As a user, I would like to be able to disconnect my Salauth login with websites of my choice.
- Issue: <https://trello.com/c/0yLWZSR2>
  - Scenario 1: A user should be able to press a delete button next to a website in their Home Screen and have their information detached from that website's user database.
14. As a user, I want to be notified on my mobile device when a new device logs in using Salauth to ensure account security.
- Issue: <https://trello.com/c/RuSWq7qx>
  - Scenario 1: Notification is successful. User is intending to login. No action is necessary
  - Scenario 2: Notification is successful. User is not intending to login. User can block device from logging into account
  - Scenario 3: Error in sending notification. User is not allowed to log in
15. As a user, I want to be able to delete my account info if I so please.
- Issue: <https://trello.com/c/UIIpF2jV>
  - Scenario 1: Account deletion is successful. No account information is retained in the database.
  - Scenario 2: Account deletion returns an error. Account information is retained. User is returned to the account deletion page to reattempt.
16. As a user, I want to be able to be notified of new partners so that I can set up “Sign in with Salauth” for that partner website.
- Issue: <https://trello.com/c/rB0JYYQ4>



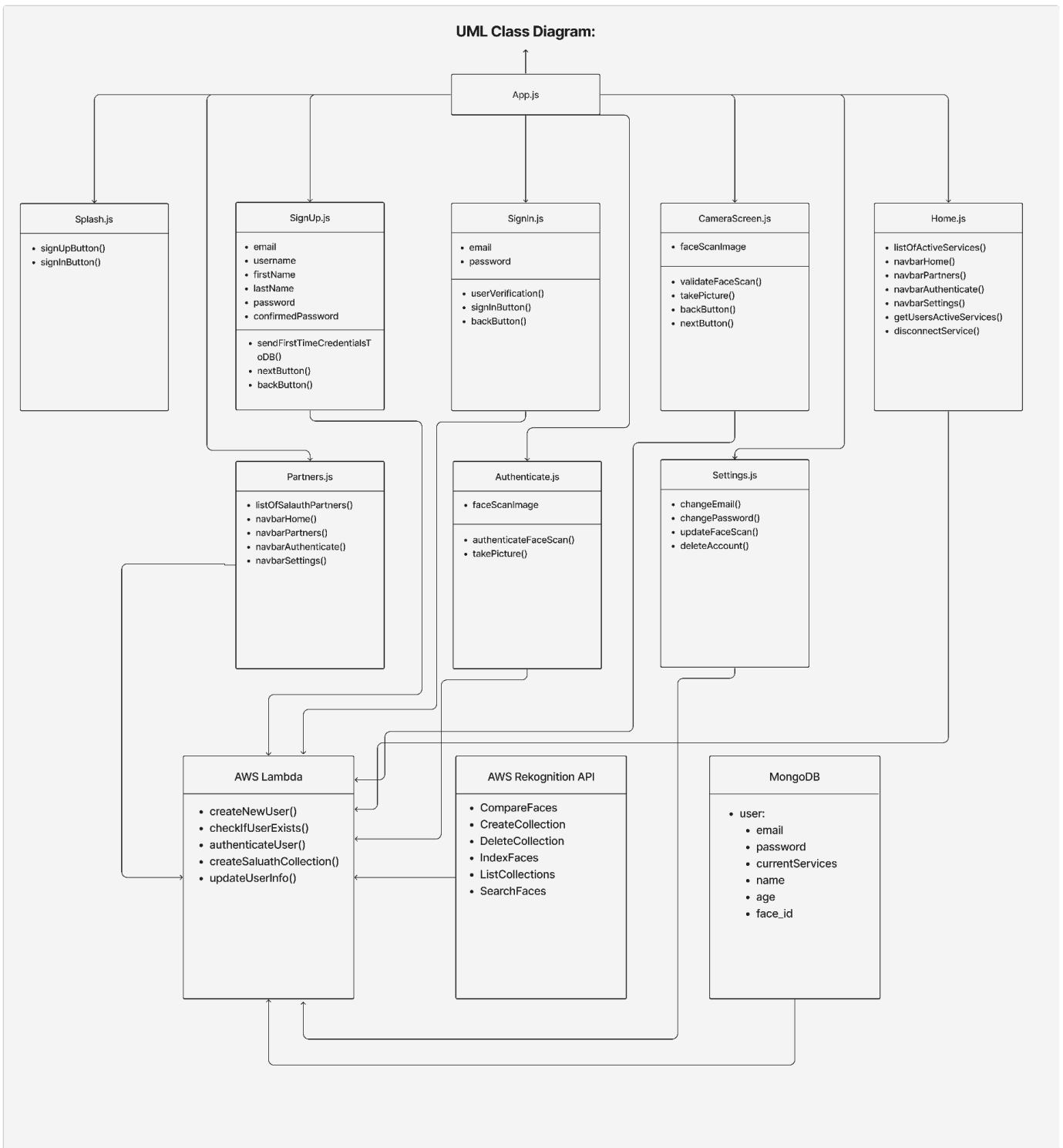
- Scenario 1: A new partner is added to Salauth, the user is sent an email and the Partner's screen is updated.
17. As a website administrator, I want to allow users to "Sign in with Salauth" on my website.
- Issue: <https://trello.com/c/C4bIiB1H>
  - Scenario 1: Setup is successful. Users can use "Sign in with Salauth" to authenticate their account with hosting website
  - Scenario 2: Setup is unsuccessful. Logins using "Sign in with Salauth" are not allowed
18. As a website administrator, I want to be able to import the correct keys for users so that they can be authenticated in the database
- Issue: <https://trello.com/c/0aA38UPI>
  - Scenario 1: Key import is successful. Key is received from correct user account and is verified through hosting website account administration
  - Scenario 2: Key import is unsuccessful. No key is received by the hosting website. Key import is reattempted.
  - Scenario 3: Key import is successful. Incorrect key is received by the hosting website. Key is double checked for authenticity and key import is reattempted.
19. As a website administrator, I would like access to the AWS Collection that stores feature vector information for my users to ensure security.
- Issue: <https://trello.com/c/hBJDWVoX>
  - Scenario 1: An IAM user would be created for an administrator for each partner, in which they would be able call upon the Rekognition API and list their Collection using the collection\_id.
20. As a website administrator, I would like to have access to API Documentation to understand how the authentication works.
- Issue: <https://trello.com/c/zhKBSCke>
  - Scenario 1: A website administrator would be given access to API Documentation where they can view all request/response outputs for all methods in the Salauth API.

## **Non-Functional**

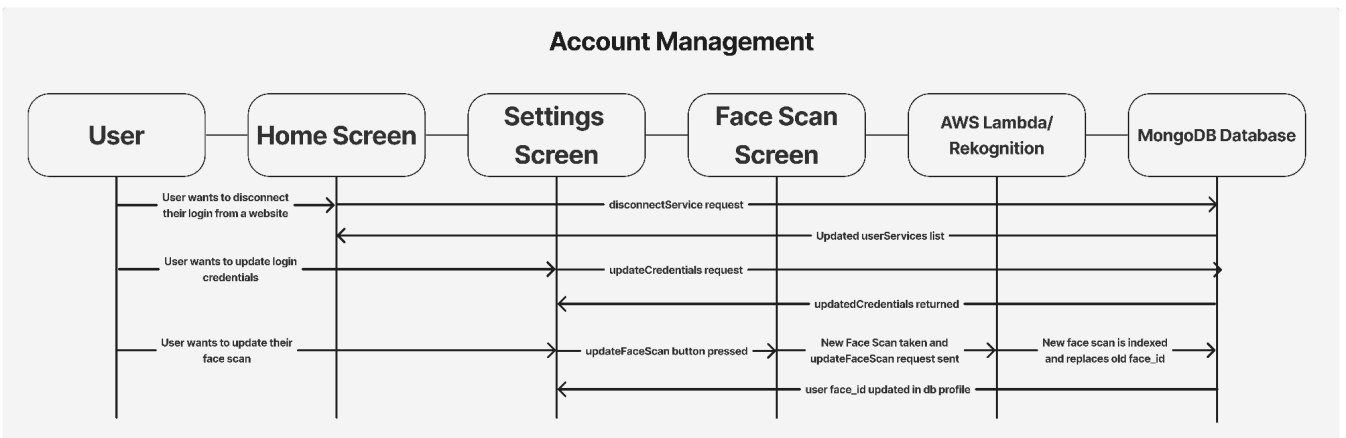
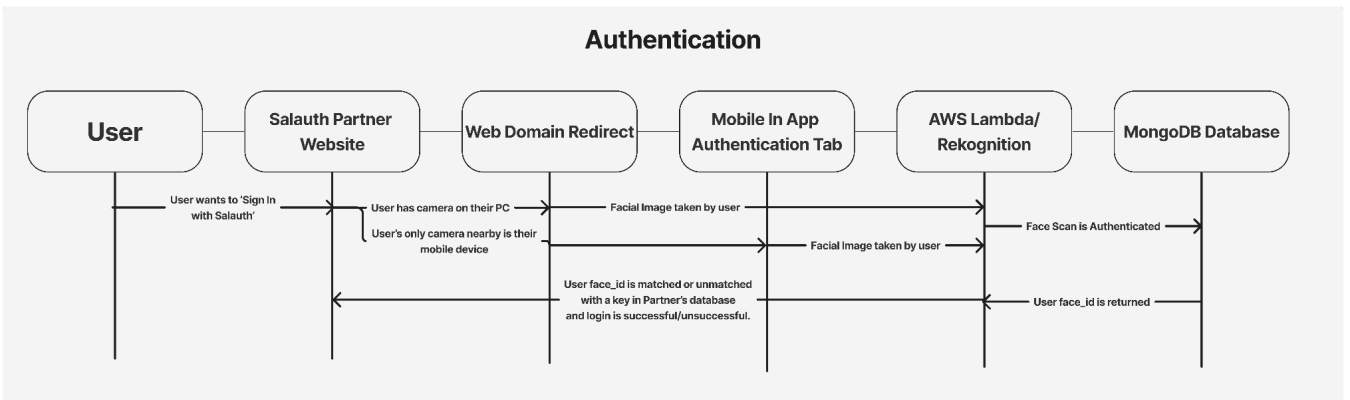
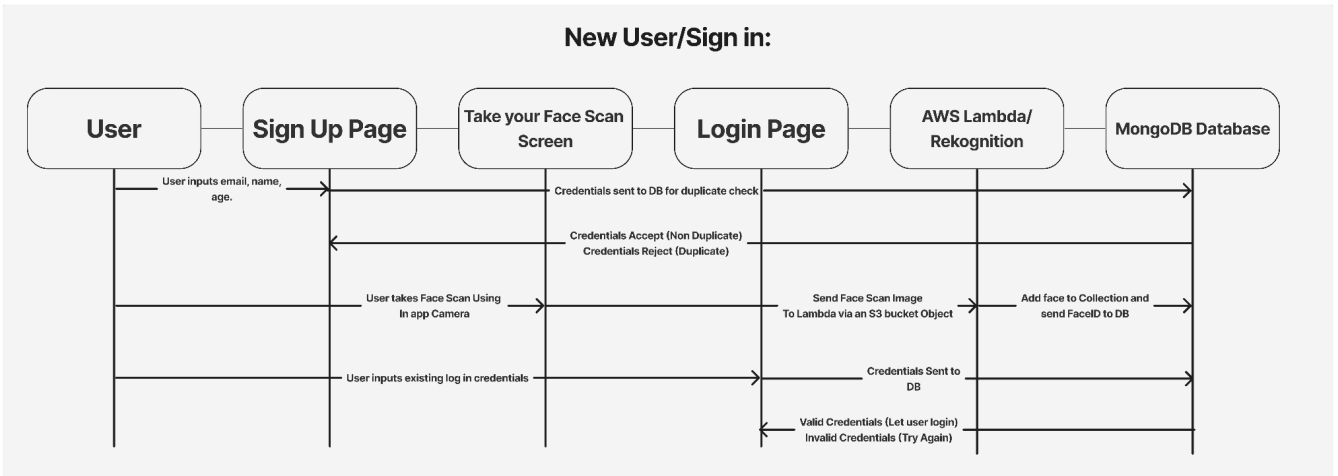
- The system should be so secure, credentials cannot easily be stolen.
- The system should be fast to make transfer of security credentials seamless.
- The system should maintain data integrity and privacy for users to trust the platform.
- The system should be organized in the backend so data storage is efficient.

## System Models:

### UML Class Diagram:



## Sequence Diagrams:



### **Appendices (Technologies Used):**

- React
- AWS Rekognition
- AWS Lambda
- React Native
- MongoDB