

## Project Requirements Document v1

**Project Title:** Salauth

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### **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, Saulauth. 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.

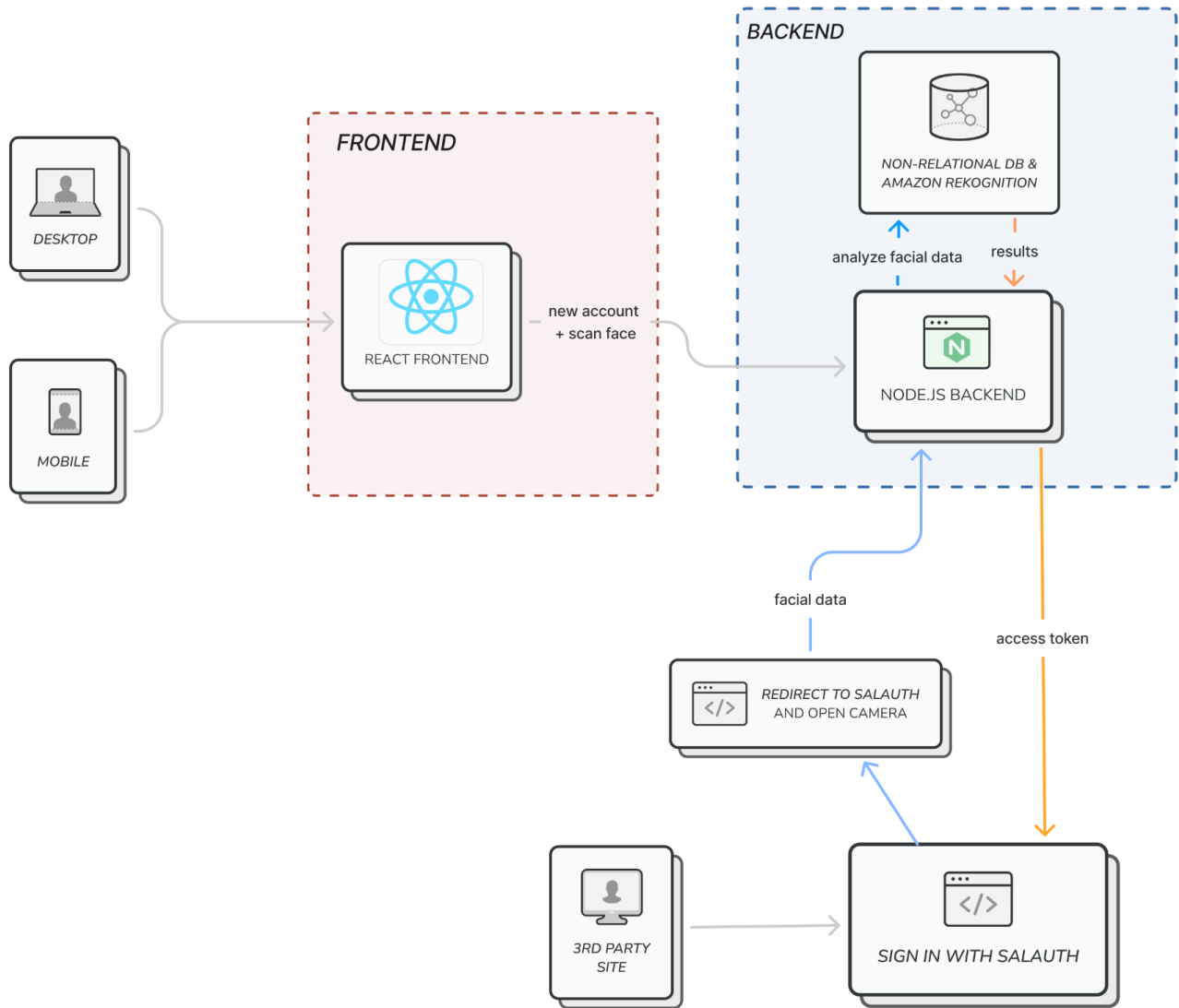
We plan to optimize redirects and closely follow the infrastructure surrounding “Sign in with Google” as closely as possible in order to make our service as performant as possible. This is important to us since we want this authentication process to happen as quickly as possible. It should last no longer 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.

## Requirements (functional and non-functional):

### User Stories:

1. As a user, I want to be able to create a new account/log in on the mobile app.
  - Issue: <https://trello.com/c/EGopY7CF>
  - Scenario 1: The user doesn't have an account, and successfully creates account information with Salauth and their login details are stored.
  - Scenario 2: The user already has a Salauth account, and is able to log in by providing their login details.
2. As a user, I want to be able to sign up for a new account on a website using Salauth.
  - Issue: <https://trello.com/c/RgT8i7MH>
  - Scenario 1: The user successfully creates an account with the hosting website and is logged in through Salauth
  - Scenario 2: There is an error when creating an account. No new account is created with the hosting website and the user is redirected to the sign up page
3. 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/hTgAPUbQ>
  - 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.
4. As a user, I want to link an email with my account, which will get notifications from the websites I sign up for.
  - Issue: <https://trello.com/c/IkoVlxgi>
  - Scenario 1: User successfully links Salauth account to email. Email receives urgent and informational notifications at this email address
  - Scenario 2: User submits an invalid email address. No emails are received by the user.
  - Scenario 3: There is an error when submitting an email address. There is no update on the user's account. User is redirected to email submission page

5. As a user, I want to set up my facial recognition scan that will be used for signing in with Salauth.
  - Issue: <https://trello.com/c/YiqvwVrp>
  - Scenario 1: Face scan is successful. Face ID is connected to Saluath account and is used for token verification.
  - Scenario 2: Face scan is not successful. No face ID is connected to the account and the user is returned to the beginning of the face scan procedure.
6. As a user, I want to be able to see what websites have been logged into using the facial recognition software.
  - Issue: <https://trello.com/c/5U4SkqBG>
  - Scenario 1: User's website login history is displayed for viewing. User can interact with history
  - Scenario 2: There is an error loading the user's history. User's history is not displayed.
7. 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/iDFVe9wm>
  - 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
8. As a user, I want to be able to delete my account info if I so please.
  - Issue: <https://trello.com/c/JVnmV5w1>
  - 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.
9. As a website administrator, I want to allow users to "Sign in with Salauth" on my website.
  - Issue: <https://trello.com/c/ff3dA6rN>

- 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
10. 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/fqxS3W14>
  - 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.

### **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.

**Appendices (Technologies Used):**

- React
- AWS Rekognition
- Node.js
- React Native
- AWS DynamoDB or Firebase