

# Project Requirements Document - Version 2

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**Team Name:** O(MG)

**Company:** AppFolio

**Project Title:** Synergi

## Introduction:

### **Motivation: What problem are we trying to solve?**

How does one gauge the synergy within their teams? Hard data and statistics can inform a manager of the overall effectiveness of their teams, but a team that should be highly effective on paper may end up being largely ineffective or even detrimental to progress. On the other hand, a mediocre or seemingly mismatched team may flourish and perform well. Pre-pandemic, it wasn't uncommon for managers to be dumbfounded by this issue. Now with team collaboration continuing to become more commonplace even in the face of a record number of teams working entirely remotely, this issue is exasperated. Not only are managers and team members unable to benefit from face-to-face interactions, but employees have fewer opportunities to privately voice their concerns to their managers with the assumption that their concerns can be addressed right away. If, for example, an employee feels they cannot contribute to group brainstorming or discussions, the manager has less time than ever to observe these interactions and make an informed decision. If employees feel they cannot express their feelings properly, companies may lose employees due to burn out from mismatched

teams or even “toxic working environments”. Both managers and employees need a tool to allow for open communication about the qualitative aspects of their teams.

### **Background: How is it currently being solved?**

One solution, and seemingly the most popular, is having monthly, weekly, or daily meetings. However, these do little to bridge the gap, as people are hesitant to mention issues they have with the project or team in front of all their other team members. When issues are brought up in a team setting, it often causes unnecessary drama or fractures in the team. Ultimately, the purpose of meetings is to facilitate instantaneous and open communication between team members. In cases where teams are mismatched, meetings become mired with issues, such as some struggling for control or others left feeling they cannot contribute to the conversation for fear of being judged. If teammates have issues with one another, increasing the frequency of meetings only compounds the issues, potentially fracturing the team or bogging down progress.

Another solution is sending out surveys periodically. However, most of the time these surveys are sent “in a vacuum”. That is to say, they are usually just one-time things and are discarded afterwards. Or, if they are sent out at intervals, the responses are not compared across surveys. Repeat surveys may also ask different questions every time, making long-term data analysis all but impossible. They may be more revealing than meetings, but on the whole fail to track overall team progress and significant data from the responses.

With both meetings and surveys, employees may not always be honest in their responses, knowing that their managers can see specifically what they responded with. It’s not uncommon for people to avoid advocating for themselves in order to keep the peace, especially if they feel like they are the only one that has issues with the team. Without some guarantee of anonymity, it can be harder for their manager to get the full picture of how they’re doing and how well they’re working with their team.

### **Our goal:**

We are creating a web application that will allow managers to have simple and meaningful insight into their teams' synergy and performance. Through our platform, managers will be able to send out pre-constructed surveys to their employees at regular intervals. Employees will then be able to provide both identified and anonymized feedback about previously non-quantifiable data, such as how they are feeling and how well they're working with their fellow team members. Because they will be receiving surveys at regular intervals with standardized questions, managers can monitor trends in their teams and employees over time. Managers can observe trends from the data and use it to make decisions regarding the division of labor or redistribute members if needed.

### **Implementation:**

For the web application, we are using Ruby on Rails as the framework, because Rails emphasizes "Convention over Configuration", which makes the set up of our web app easy. To make our website more visually appealing, we are using ReactJS for front end design, because it provides more freedom to customize the UI. We are choosing PostgreSQL as our database because it's an easy relational database that works well with Rails and can be deployed on Heroku. The database will be used to store login credentials for managers, as well as survey data and employee responses. From this data, we can extrapolate trends and graph them in ways that would be helpful to a manager so that they are better informed on their team's chemistry and overall mood.

### **Assumptions:**

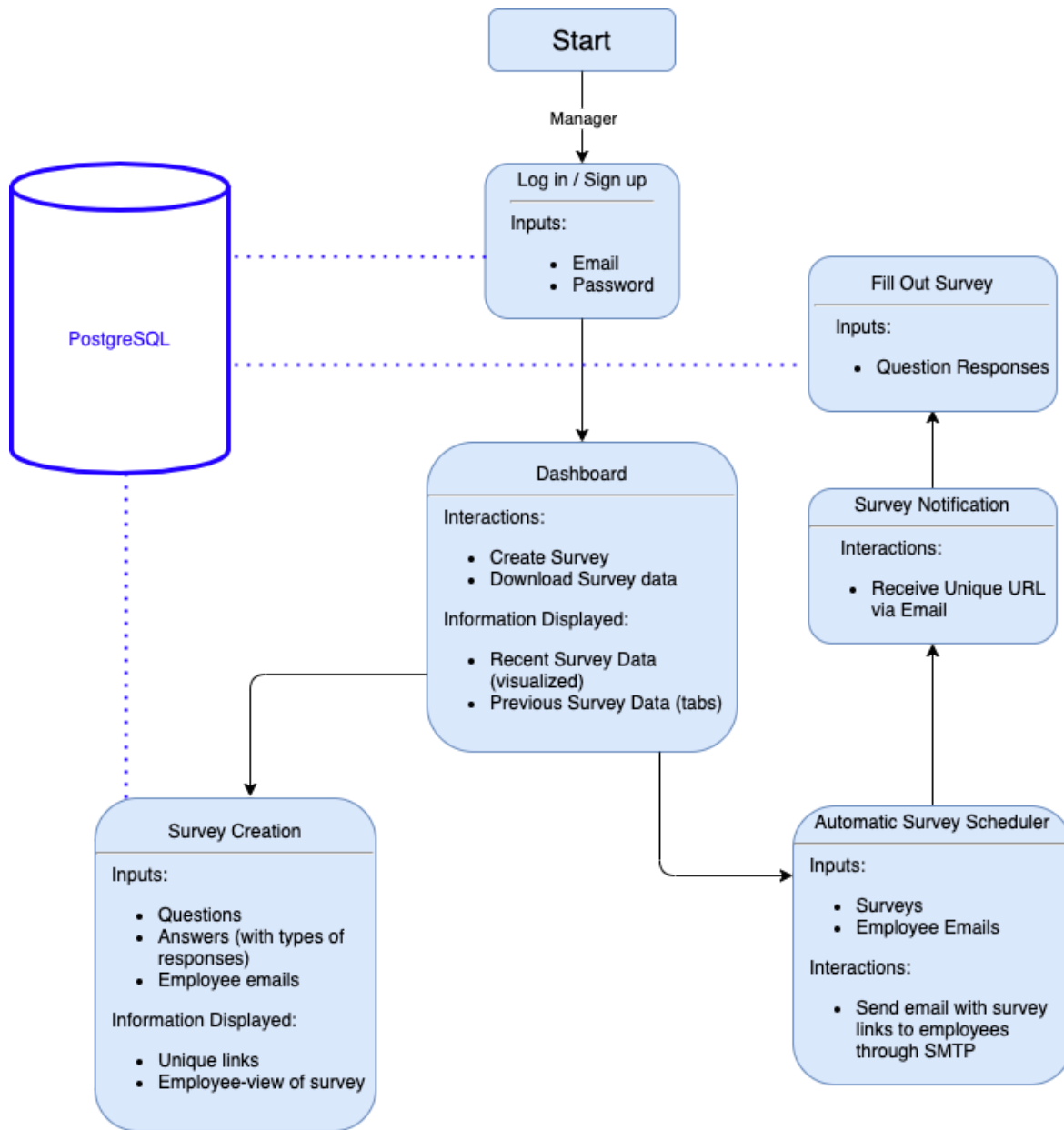
Our main assumption is that managers care about the results they receive. Not just within each survey, but across all surveys. We assume they are looking to improve the community within their teams and are willing to change how they manage their teams or how they approach communication within their teams and with individual employees to achieve these improvements. Our web application's primary job is to provide the managers with all the information they need to make informed decisions. We assume the managers will not expect that our application will solve their team's issues (or by extension, that sending out regular surveys and having tons of data to go

off will automatically begin improving their team's communication, community, and effectiveness.)

Another assumption we have, and perhaps the most noticeable, is that the employees will trust anonymous surveys are actually anonymous. More specifically, that employees have an existing level of trust with their company and/or their manager. Without this trust, the issue of a manager not having a full or complete picture of how their employees are doing would continue being an issue.

## **System Architecture Overview**

### **1. High Level Diagram**



## 2. User Interaction and Design:

Any user going to our web application will first see the homepage, which will contain information about the project and a button redirect to log in or sign up.

- a. If the user is a manager, they can either log in or sign up with an email and password. Once they are logged in they will be redirected to their “dashboard”, or account page. Here they can:
  - Create a new survey using the built in form
  - Download survey data (in the form of a CSV file)
  - See recent survey data visualized in graphs

- See previous survey data
  - Compare survey data from past and recent surveys
  - Enter in their team member's names and email addresses into a table (for quick reference when sending out surveys)
- b. If the user is an employee, they may skip viewing the home page, as each of them will be given a unique survey link from their manager (in an email).

## Functional & Non-Functional Requirements

### User Stories and Use Cases:

- 1) As a new user, I want to see a clean looking landing page, so I have an easier time navigating through the site.
  - a) Acceptance Criteria: The website has clearly labeled tabs to help the user find more information and buttons to create or sign in to an account.
  - b) Time Estimate: 1 Hour
  - c) <https://github.com/CMT-UCSB/Capstone-AppFolio/commit/cec8dfd85110738786ef9fa4a2110b10a17e868a>
  - d) <https://trello.com/c/SqFrivTJ>
- 2) As a manager, I want to be able to set up an account if I do not have one already, so that my survey data can be stored.
  - a) Acceptance Criteria: The user has access to registration form. Once the user fills out the form, their login information will be stored so that they can login.
  - b) Time Estimate: 3 Hours
  - c) <https://github.com/CMT-UCSB/Capstone-AppFolio/commit/c274389c7776fa778878dfbe51e4a68600aebae3>
  - d) <https://trello.com/c/pxBEWqUy>
- 3) As a manager, I want to sign into my account, so I can retrieve saved data.
  - a) Acceptance Criteria: The user has access to the login form and can enter their email and password to login. After logging in, they should be redirected to the account page where they can see their data or sign out.
  - b) Time Estimate: 1 Hour
  - c) <https://github.com/CMT-UCSB/Capstone-AppFolio/commit/c274389c7776fa778878dfbe51e4a68600aebae3>
  - d) <https://trello.com/c/QMCIDK7Z>

- 4) As a manager, if I forget my account password, I want to be able to reset my password with my email.
  - a) Acceptance Criteria: The user has access to a link which they can submit their email address. If their email is registered, a password reset link will be sent to their email.
  - b) Time Estimate: 1 Hour
  - c) <https://github.com/CMT-UCSB/Capstone-AppFolio/commit/943fa5cf9ffdc329c7b178c05e7031a7cd84f45f>
  - d) <https://trello.com/c/JEueVjNj>
- 5) As a manager, I want to save my team's names and emails on a list, so that I can quickly reference it for sending out surveys
  - a) Acceptance Criteria: The user will be able to click on a "employees" section from their dashboard. Here they can enter the names and email addresses of their team members into a table. The table can be recalled from the same section on their dashboard.
  - b) Time Estimate: 2 Hours
  - c) <https://github.com/CMT-UCSB/Capstone-AppFolio/commit/ce92cfc3edd3ce820eb41c5df0f0e3782232a843>
  - d) <https://trello.com/c/zDeAP1oo>
- 6) As a manager, I want to see my survey data visually represented, so I quickly understand the results of my surveys.
  - a) Acceptance Criteria: The user will see the survey data depicted as a pie chart and/or bar graph, depending on the question type. If there is more than one question in the survey data, then the user will see one pie chart or bar graph per question.
  - b) Time Estimate: 6 Hours
  - c) <https://trello.com/c/hiwqcwoe>
- 7) As a manager, I want to be able to download my survey data, so I can share it and import it to other programs as needed.
  - a) Acceptance Criteria: The user can select the data of a single survey from their dashboard and download it as a .csv file to their computer.
  - b) Time Estimate: 2 Hours
- 8) As a manager, I should be able to send a pre-made survey to the employees, so that I don't have to make the survey myself.

- a) Acceptance Criteria: One question survey template that's available for the managers to send out.
  - b) Time Estimate: 2 Hours
- 9) As a manager, my employees should be able to take the survey using a unique link, so that each employee can only take the survey once and so the data is tied to my account.
- a) Acceptance Criteria: User is sent an email containing hyperlinks to specific survey responses. When the user selects a response, the data is recorded into the database. If the user visits the link again, they are shown a message saying that they have already responded.
  - b) Time Estimate: 2 Hours
  - c) <https://github.com/CMT-UCSB/Capstone-AppFolio/commit/884331bbb4d339609c3d15cb726ffa440affa02e>
  - d) <https://trello.com/c/DWXrr5hB>
- 10) As a manager, I should be able to compare the results of two or more mood surveys, so that I can see the differences between them and trends over time.
- a) Acceptance Criteria: When looking at one survey's data, there is an option to bring up one or more additional surveys and visualize the differences side-by-side.
  - b) Time Estimate: 3 Hours
  - c) <https://trello.com/c/Rx6kXUT7>
- 11) As a manager, I want to visualize the change in answers of a specific employee, so that I can gauge how individual employees are doing.
- a) Acceptance Criteria: A specific employee can be selected through the Dashboard. When this is done, their previous responses are displayed together and visualized in the form of a graph.
  - b) Time Estimate: 2 Hours
- 12) As a manager, I should be able to add notes to the survey data, so that I can track confounding variables in the survey data (such as how my changes are affecting employees).
- a) Acceptance Criteria: The user is able to add a note to their account. The user can type in whatever information they want and choose the date for the note.
  - b) Time Estimate: 2 Hours
  - c) <https://github.com/CMT-UCSB/Capstone-AppFolio/commit/4a5b837ba19df9440f8ffdaff6b1fba37f5dd6e9>

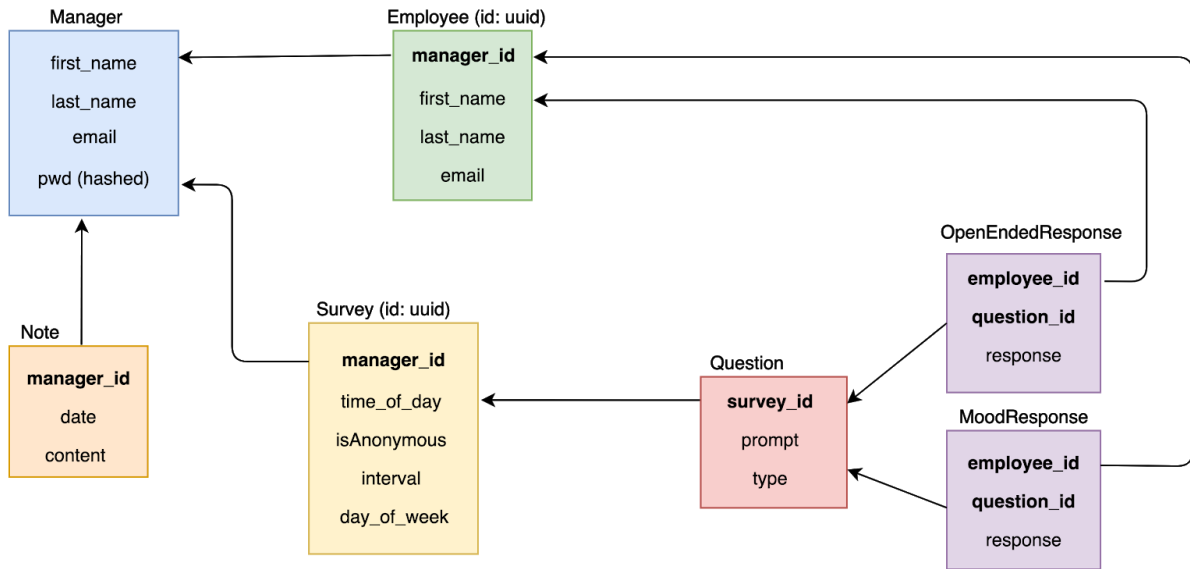


- d) <https://trello.com/c/ZCrZRIUL>
- 13) As a user, I should know whether or not my answers will be identifiable or anonymous, so that I can make informed responses to the surveys.
- a) Acceptance Criteria: The user will see an identifiable or anonymous label on the top of the survey when they take one.
  - b) Time Estimate: 1 Hour
  - c) <https://github.com/CMT-UCSB/Capstone-AppFolio/commit/1549c0b47a61afd3d139d699b15d5222b1fd1fde>
  - d) <https://trello.com/c/yGFhFbRy>
- 14) As a manager, I should be able to schedule reminders for a specific survey, to ping those who didn't respond already.
- a) Acceptance Criteria: The employees who have already filled out this specific survey shouldn't be notified, the employees who haven't should get an email notification.
  - b) Time Estimate: 6 Hours
  - c) <https://github.com/CMT-UCSB/Capstone-AppFolio/commit/bc1178c04f9022de0de26216ce154378dc34156f>
  - d) <https://trello.com/c/VwEy3JbE>
- 15) As a manager, I want the website User Experience to be seamless and smooth.
- a) Acceptance Criteria: The employees and notes pages should pop up as modal. All the pages' front-end should be in unified React files.
  - b) Time Estimate: 5 Hours
- 16) As a manager, I want to be able to include open-ended questions in surveys so that employees can provide customized feedback.
- a) Acceptance Criteria: In a "Create New Survey" modal, the manager has the option to enter an open-ended question so that when reminders are sent out, an open-ended text form appears on the survey response page.
  - b) Time Estimate: 1 Hour
  - c) <https://github.com/CMT-UCSB/Capstone-AppFolio/commit/35f410de19dad9253040a0aca175bc36f5bd822e>
  - d) <https://trello.com/c/oU9UmfAa>
- 17) As a manager, I want a NLP program that can analyze the open-ended question responses, so I do not have to read through each response.

- a) Acceptance Criteria: When viewing the responses for a particular survey, the manager can see the result of the NLP program.
  - b) Time Estimate: 30 Hours
- 18) As a manager, I want to be able to integrate survey reminders with Slack, so that employees will receive reminders through Slack, in addition to emails.
- a) Acceptance Criteria: The Slack bot should send out Slack messages to remind those who haven't taken the survey, just like the email reminders.
  - b) Time Estimate: 10 Hours
- 19) As an employee, I should be able to answer survey questions directly on Slack, so that I don't have to click on the link that goes to the website.
- a) Acceptance Criteria: For mood questions, the answer should be recorded once the user clicks on an emoji reaction. For open-ended questions, the answer should be recorded once the user replies to the Slack-bot in chat.
  - b) Time Estimate: 2 Hours
- 20) As a manager, I should be able to divide up employees into teams and see analytics on their responses.
- a) Acceptance Criteria: The manager should be able to assign a team tag to each employee, and can choose to analyze a certain team on the Dashboard.
  - b) Time Estimate: 4 Hours

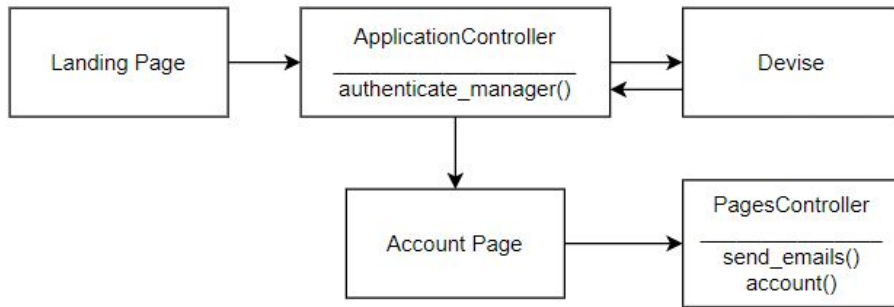
## **System Models**

### **UML (Rails Schema Diagram)**

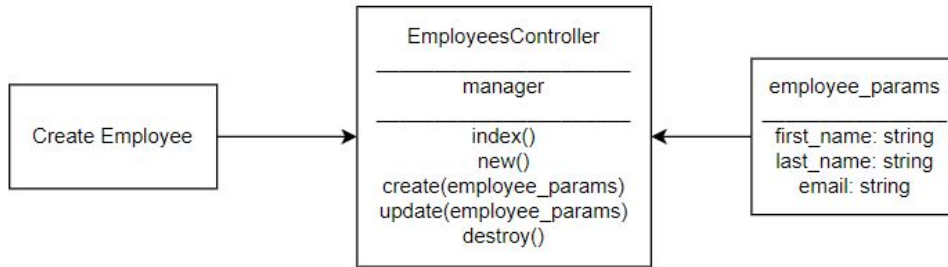


## Class/Module Sequence Diagrams

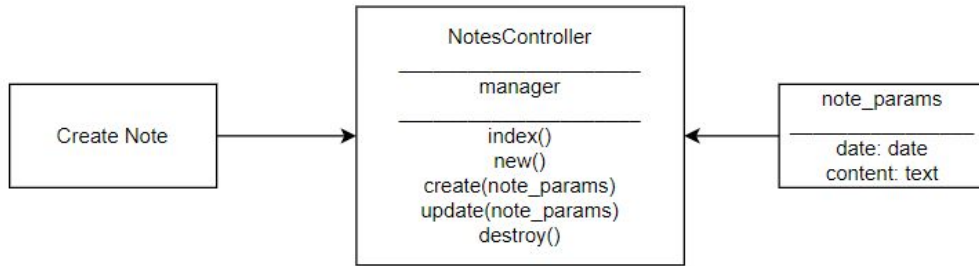
### User Login



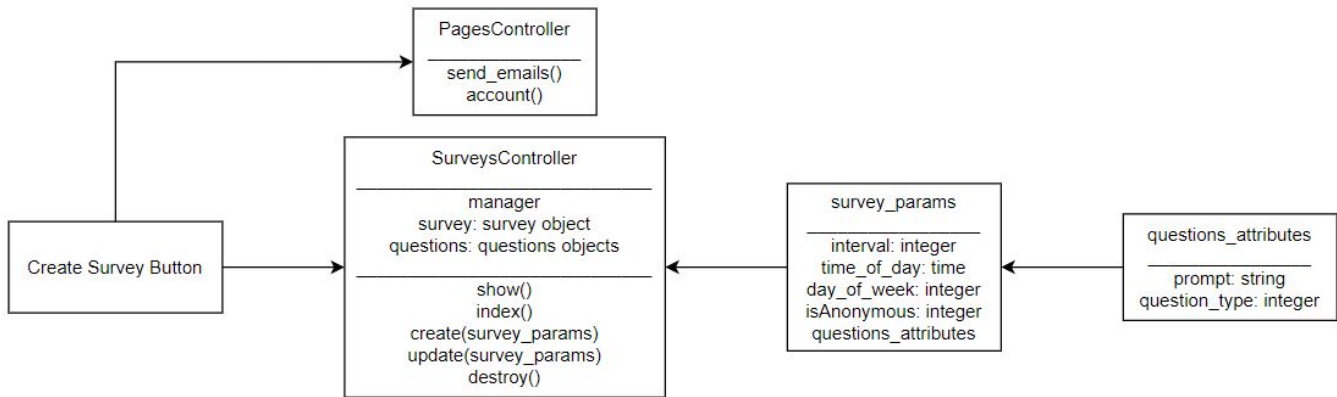
### Employee Creation



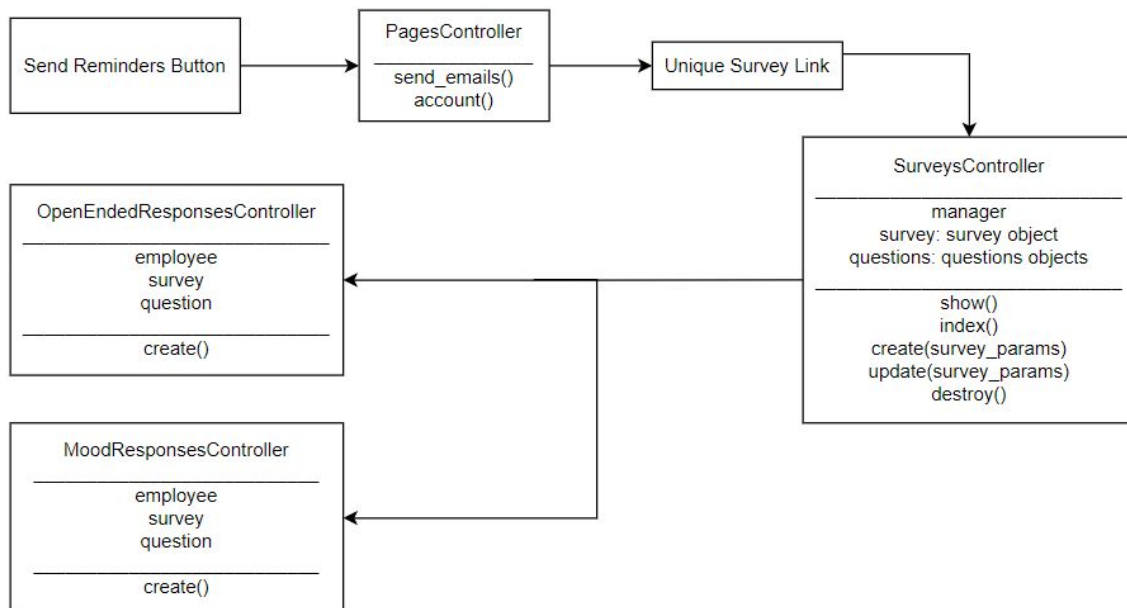
### Note Creation



### Survey Creation

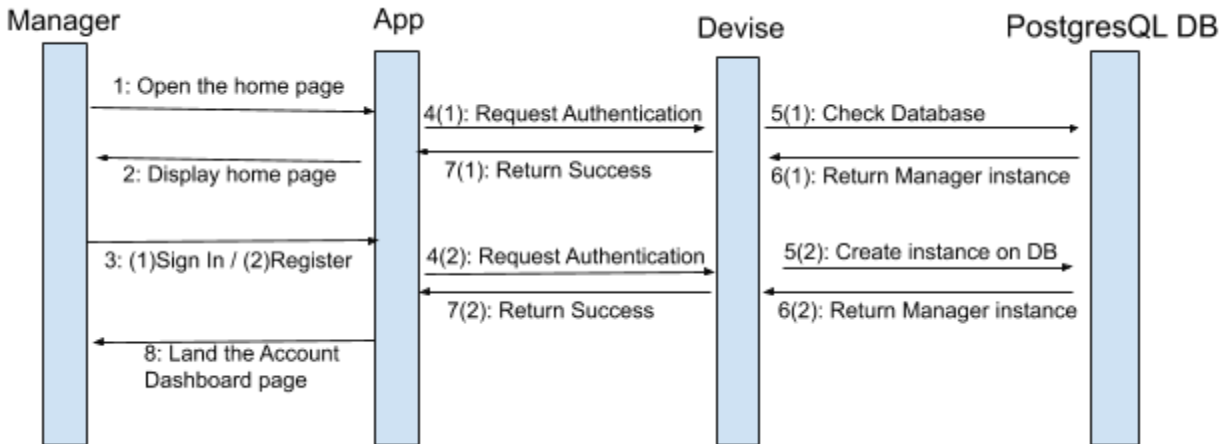


### Sending Reminders

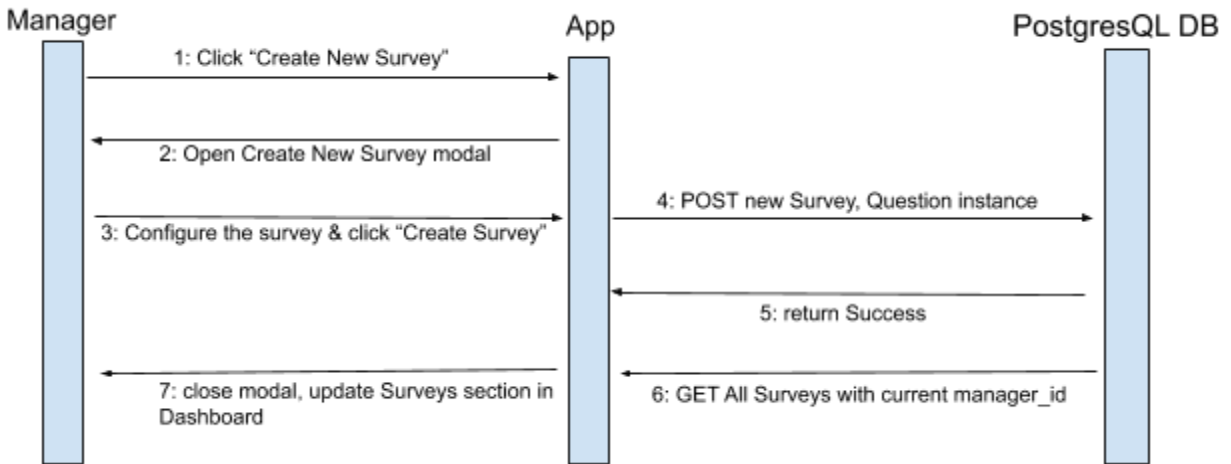


### UI Sequence Diagrams

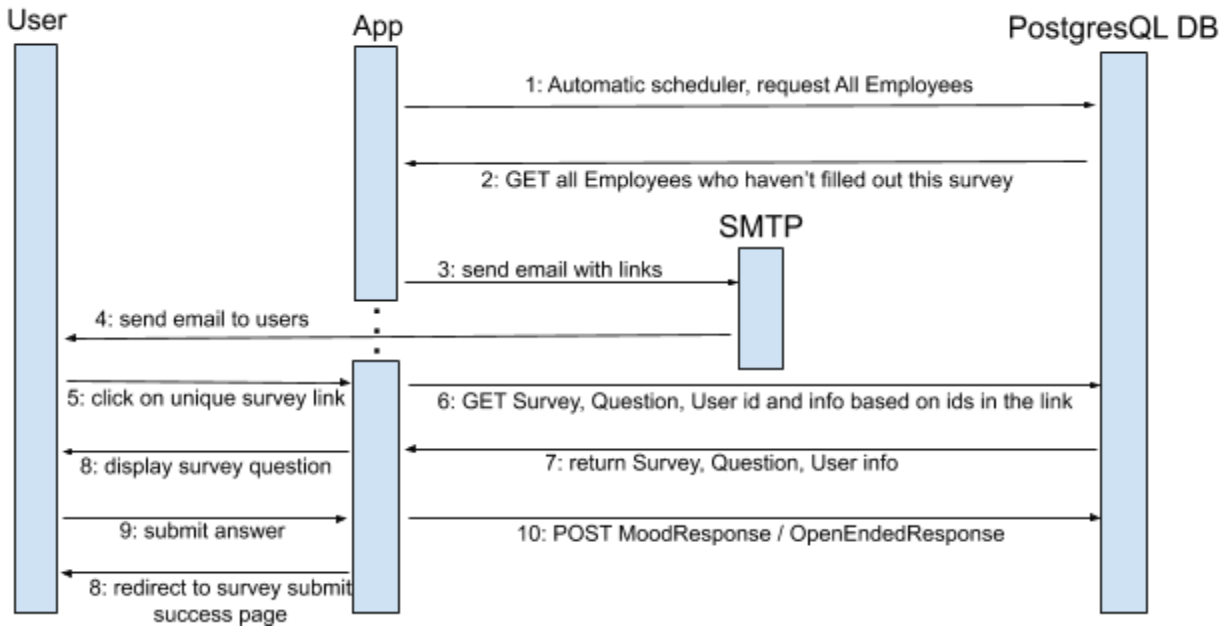
### UI Sequence Diagram for User Login



### Manager Creates Survey



## User Takes Survey



## UI Mockups

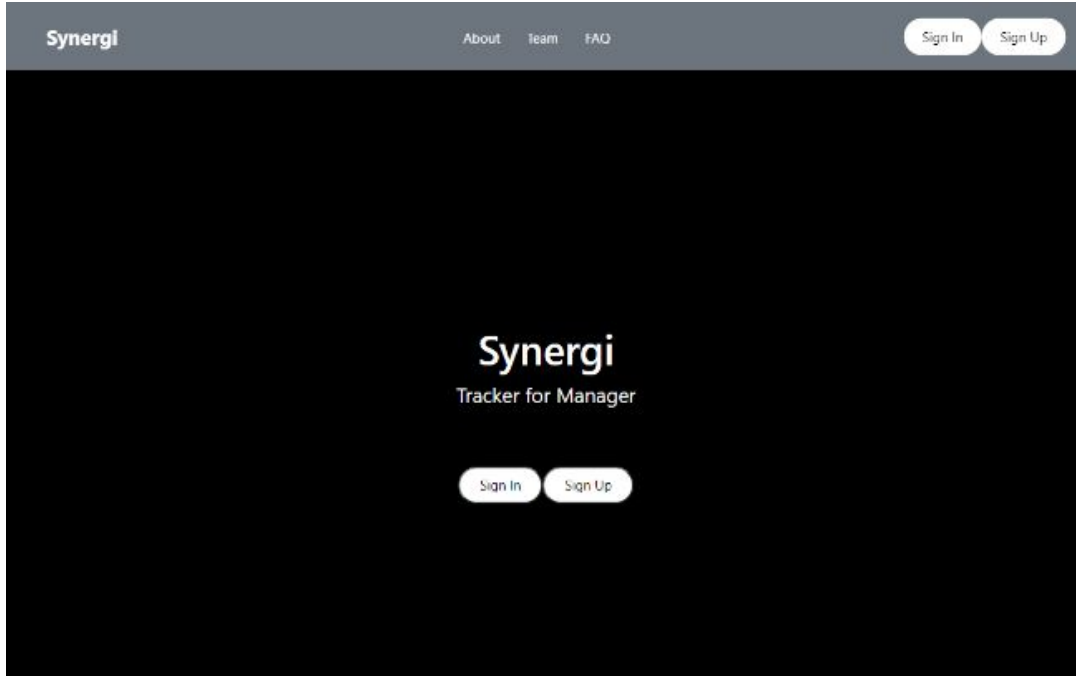


Figure 1 - Home page

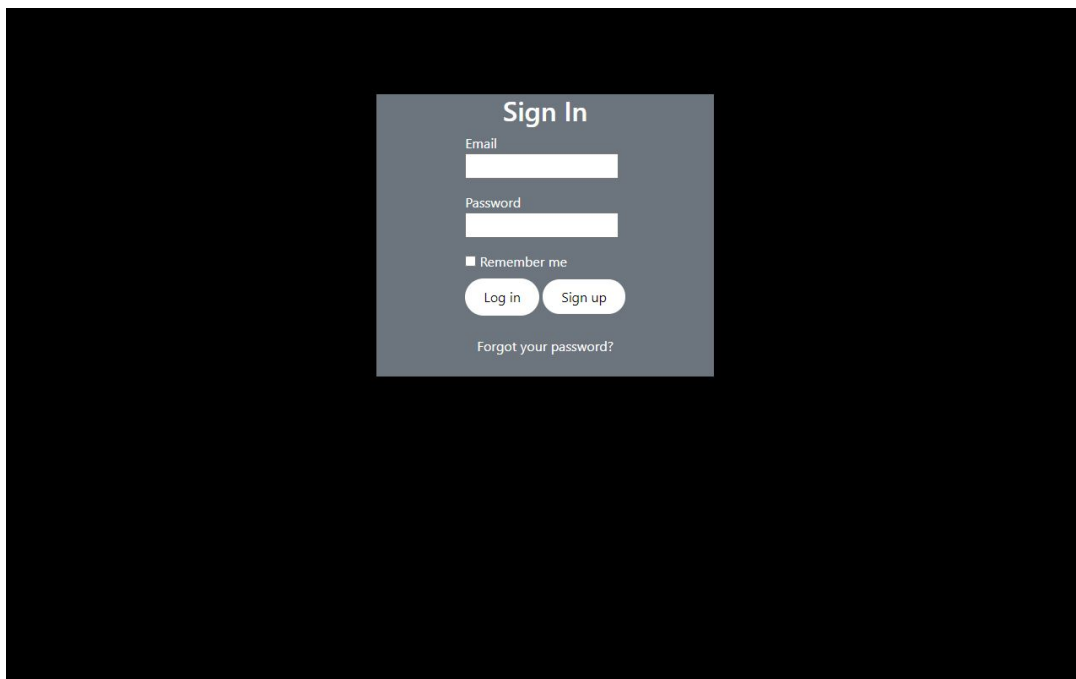


Figure 2 - Sign In page

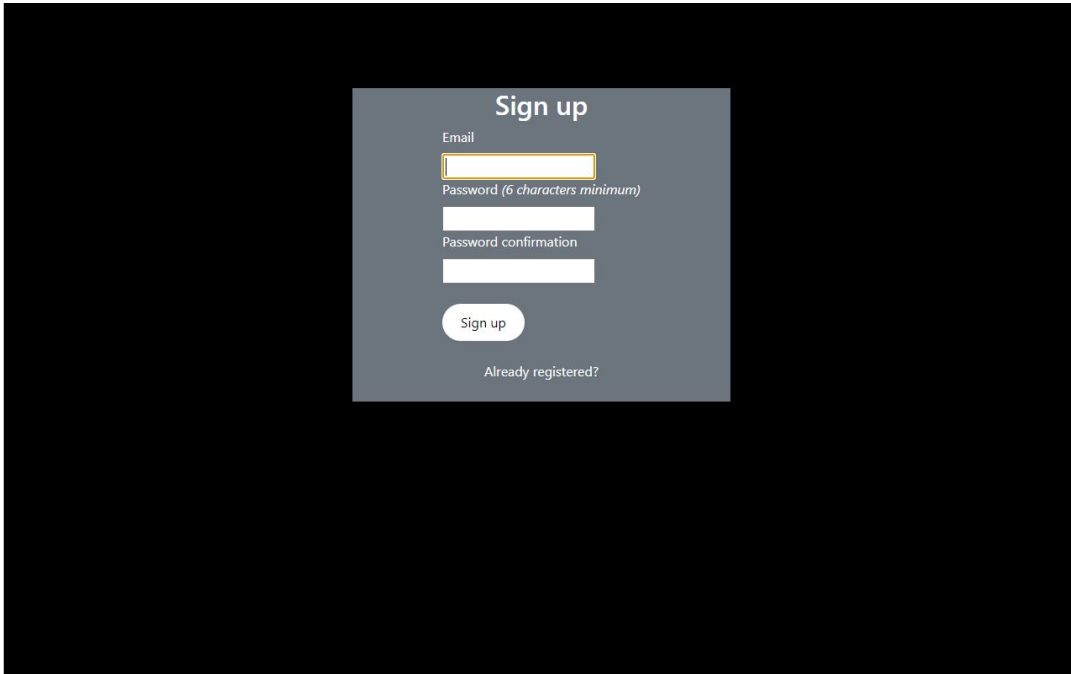


Figure 3 - Sign Up page

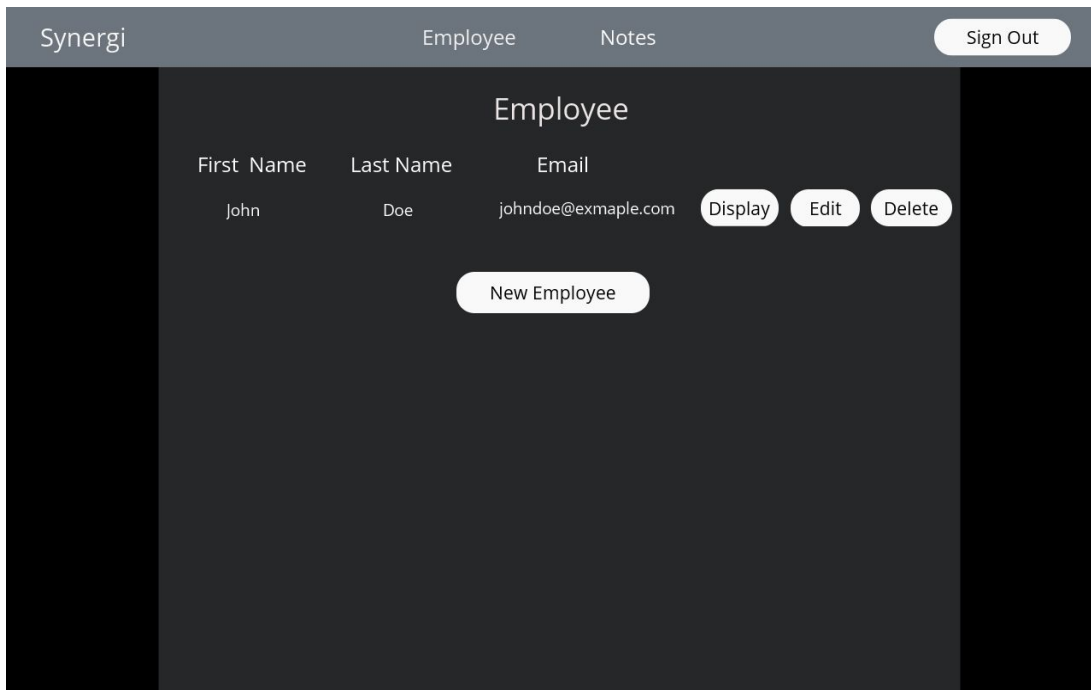


Figure 4 - Employees page



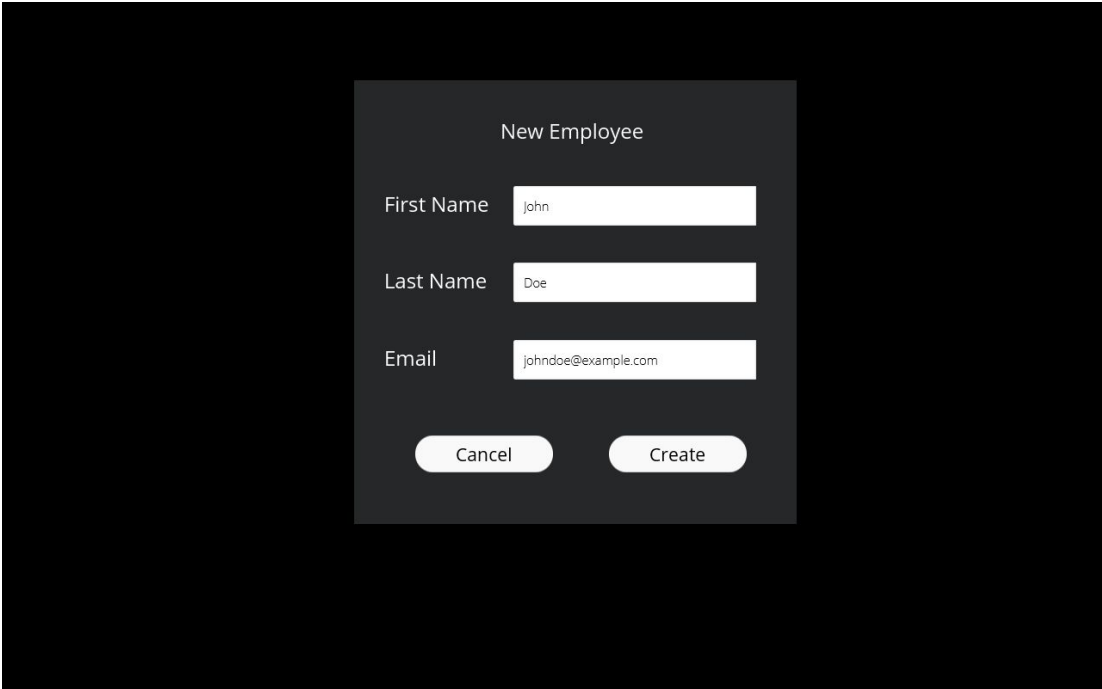


Figure 5 - Create a new employee

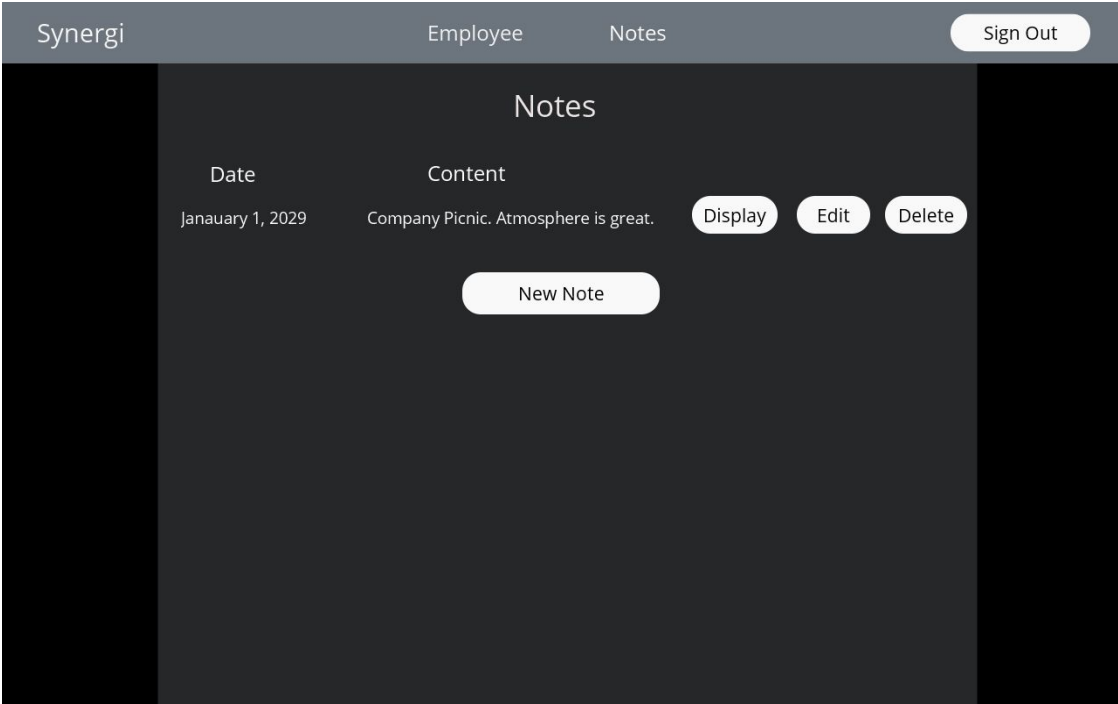


Figure 6 - Notes page

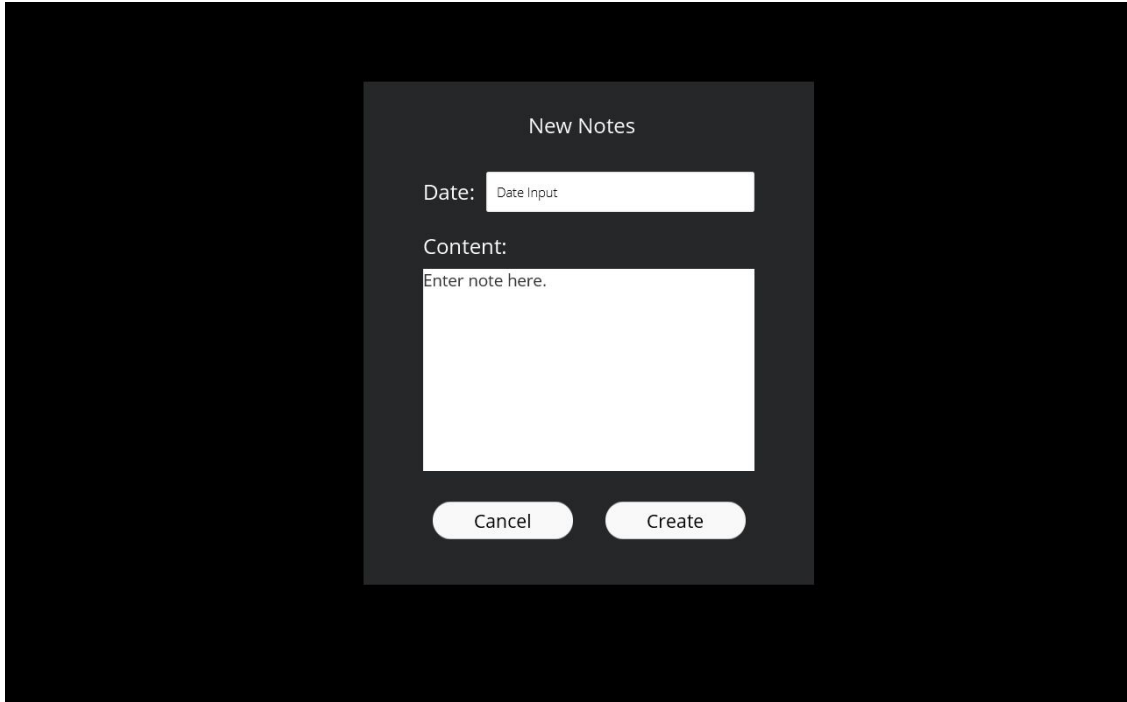


Figure 7 - Create a new note

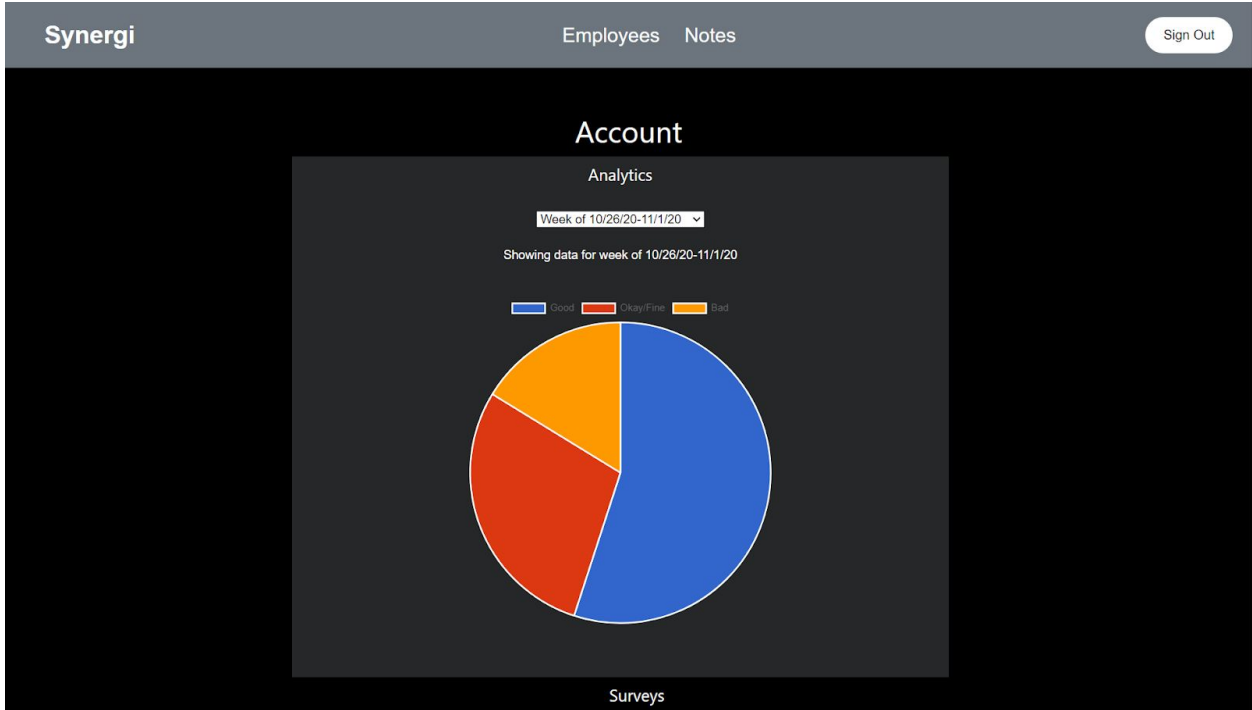


Figure 8 - Account Page (Upper half)

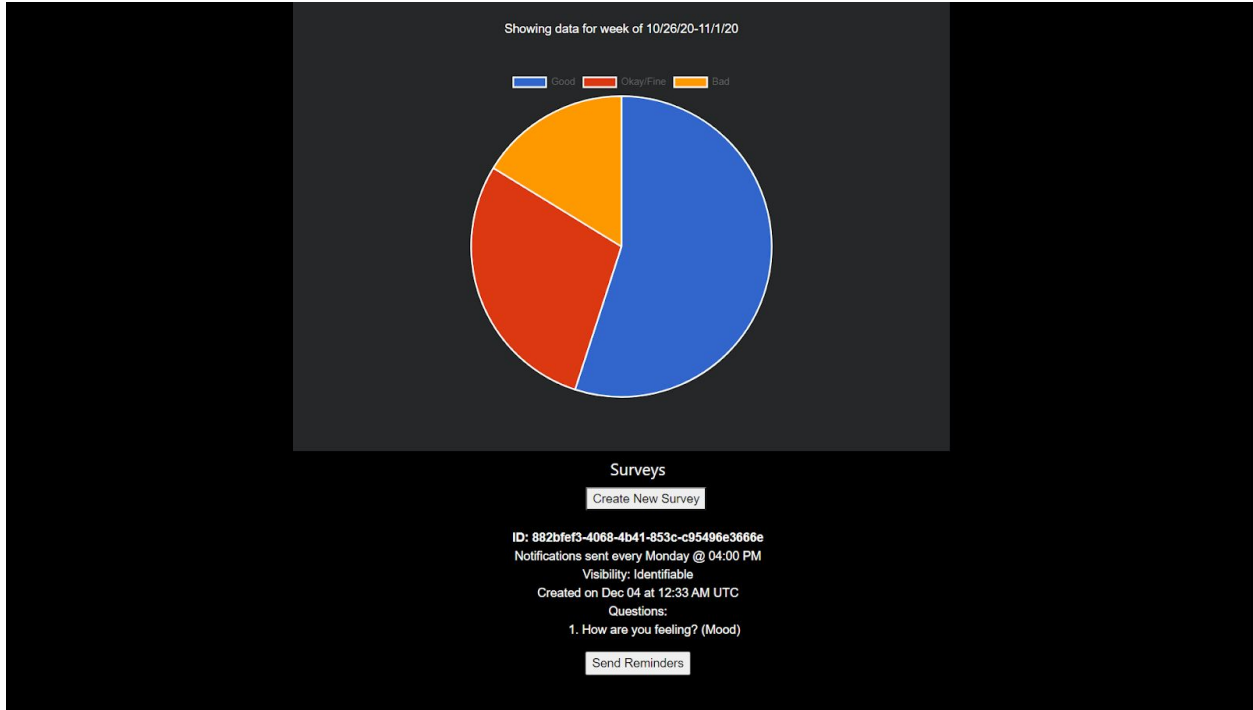


Figure 9 - Account page (Lower half)

Showing data for week of 10/26/20-11/1/20

**Enter Survey Details:**

Question 1:  
 Prompt:

Type:

Remind employees every:  
 Monday  
 Tuesday  
 Wednesday  
 Thursday  
 Friday  
 Saturday  
 Sunday

:

Is this survey Identified or Anonymous?

Create Survey

Created on Dec 04 at 12:33 AM UTC

Questions:  
 1. How are you feeling? (Mood)

Send Reminders

Figure 10 - Create a new survey

## **Appendix**

Technologies Employed:

1. Ruby on Rails
2. Minitest (Rails Testing Suite)
3. PostgreSQL
4. ReactJS
5. Heroku
6. GitHub
7. Slack