

Github Link: <https://github.com/proesslet/HCI—Diabetes-Monitoring-System>

Installing and Running

Installing Dependencies

1. Inside of the root directory, run ‘npm install’
2. Verify that a ‘node_modules’ directory has been created

Running the App

To run this application, you can either compile the Javascript and create servable files that you can then open in your browser, or you can just run it in development mode (this is the easiest since we are not deploying this application to a server).

1. Inside of the root directory, run ‘npm run dev’
2. Open a web browser and go to localhost:5173 (Note: the port may be different depending on your computer’s configuration)

Application Description

This application is a diabetes monitoring system that allows users to record their current blood sugar level and it will inform them whether it is high, low, or normal. If it is high or low, it tells them what steps to take to bring their blood sugar levels back to normal.

File Descriptions

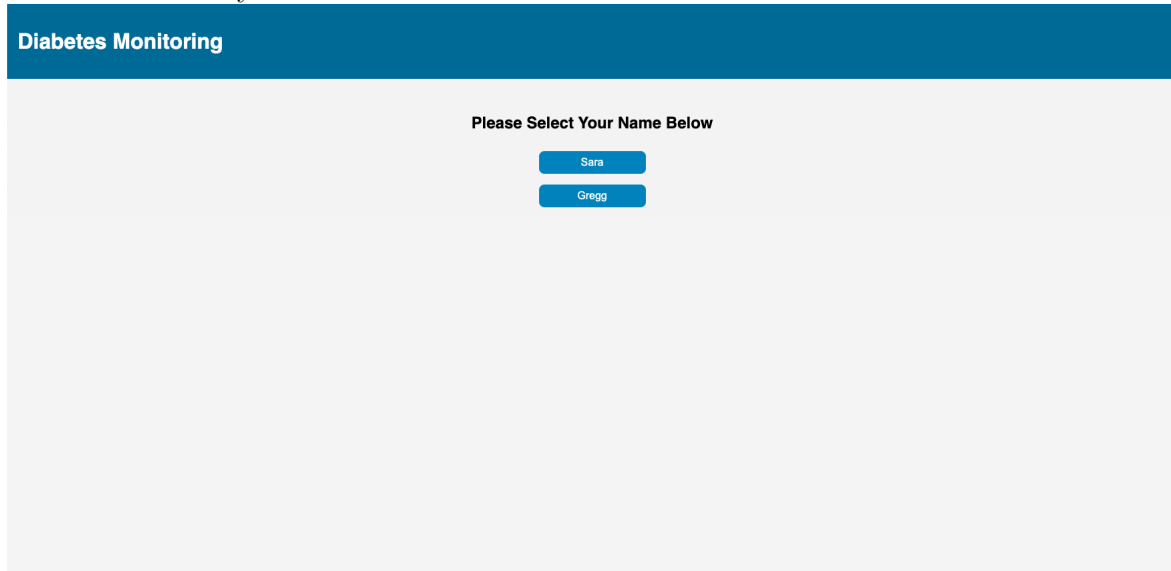
You don’t need to understand all of the files in this app in order to understand the code. The main files/directories that are required to understand are listed below:

1. node_modules - this directory contains all required dependencies.
2. main.js - this file mostly contains set-up and configuration code for the app. It is also where the global variable for the user information is stored.
3. App.vue - this is the main vue file for the application. It contains the logic for signing a user in and logging them out and also contains the code for the header.
4. components - this directory stores all the files needed for the app. It includes the file that controls the logic for allowing a user to record their glucose level as well as some other files for utilities such as tooltips and popups.

Documentation

Log-in Screen

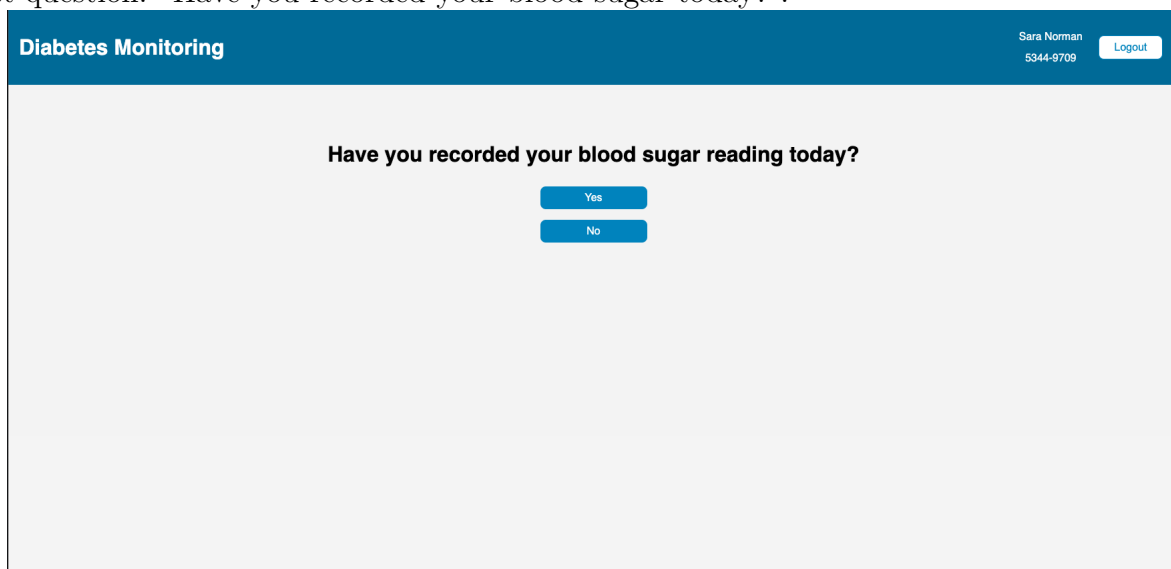
This screen displays a list of users. Once a user is selected, it logs them in and allows them to access the system.



The screenshot shows the 'Diabetes Monitoring' application's log-in screen. It features a dark blue header with the text 'Diabetes Monitoring'. Below the header, the main content area is light gray and contains the prompt 'Please Select Your Name Below' in bold. Underneath this prompt are two blue buttons: 'Sara' and 'Gregg'.

Post-login Screen

This is the first screen a user sees after they have logged in. As you'll notice, the user's name and ID number is displayed in the top-right corner as well as a logout button (this button takes the user back to the main log-in screen). This is displayed throughout the whole application, so a user can choose to logout at anytime. This page also includes the first question: "Have you recorded your blood sugar today?".



The screenshot shows the 'Diabetes Monitoring' application's post-login screen. The dark blue header contains 'Diabetes Monitoring' on the left, and the user's name 'Sara Norman' and ID number '5344-9709' on the right, next to a 'Logout' button. The main content area is light gray and displays the question 'Have you recorded your blood sugar reading today?' in bold. Below the question are two blue buttons: 'Yes' and 'No'.

Glucose Entry Screen

Once a user has recorded whether or not they have recorded a reading today, the app will then ask them to record their current glucose level. If a user has already recorded a reading today, it will simply ask them to enter it. If they haven't recorded it yet, then the message that is displayed has a bit more urgency to it.

The top screenshot shows the 'Diabetes Monitoring' app interface. The header is blue with the text 'Diabetes Monitoring' on the left and 'Sara Norman 5344-9709 Logout' on the right. The main content area is light gray and contains the text 'Please Enter Your Glucose Reading' in bold. Below this is a text input field with the placeholder 'Enter glucose reading' and a blue 'Next' button.

The bottom screenshot shows the same app interface but with a more urgent prompt: 'Please Enter Your Glucose Reading Immediately' in bold. The rest of the interface, including the header and the input field/button, is identical to the top screenshot.

In addition, this page includes techniques to prevent errors and make it easier to use. When the user hovers their mouse over the input box, it displays a tooltip that describes what range of numbers is allowed. Also, if a user tries to enter a number outside of the allowed range, it will display an error message and allow them to fix it.

The left screenshot shows the 'Please Enter Your Glucose Reading' screen with a tooltip displayed over the input field. The tooltip text reads: 'Your glucose reading should be between 0 and 99'. The input field has a small downward arrow on the right side, and the 'Next' button is visible below it.

The right screenshot shows the same screen but with an error state. The input field now contains the text '4444'. Below the input field, a red error message reads: 'Please enter a valid glucose reading between 0 and 99'. The 'Next' button remains visible below the error message.

After the user has successfully entered a valid blood sugar level, the app will then process

it and determine whether it is high, low, or normal.

High Blood Sugar

If the user's blood sugar is high, it will first inform them to call their doctor immediately. A screen is displayed with their doctor's name and phone number. After they call their doctor, they can continue in the app. Next it will ask them if they had the presence of ketones in their urine. After that it then asks the user to write any notes as to why their blood sugar may be abnormal. The "notes" page will be described in more detail later on.

The image displays two screenshots of a mobile application titled "Diabetes Monitoring".

The top screenshot shows a notification: "Your blood sugar is high." Below this, it says "Please call your doctor IMMEDIATELY:" followed by "Dr. Jason Rosenberg" and "579-0432". A blue button labeled "Next" is at the bottom.

The bottom screenshot shows a question: "Do you have ketones in your urine?". Below the question are two blue buttons: "Yes" and "No".

Both screenshots have a dark blue header with the text "Diabetes Monitoring" on the left and "Sara Norman 5344-9709 Logout" on the right.

Low Blood Sugar

If the user's blood sugar is below their normal range, the application informs them of this and also gives some recommendations on how they can bring it back up. Once the user clicks the "next" button it takes them to the same "abnormalities notes" page as it does for if their blood sugar is high. We will discuss that page in more detail next.

Diabetes Monitoring

Gregg Norman
1275-4307Logout

Your blood sugar is low.

Remember to eat a snack that is high in sugar and take any medicine that has been prescribed to you.

Next

Abnormalities Notes

This page is displayed whenever a user's blood sugar is outside of their normal range. It allows them to write some notes on why they think their blood sugar isn't normal. As you can see below, this input prevents errors by requiring the user to enter some notes. If they don't, it shows them a helpful error message and allows them to try again. In addition, this page has a blue "information" icon that when clicked, displays a pop-up containing some information on what types of things could cause an abnormal blood sugar.

Diabetes Monitoring

Gregg Norman
1275-4307Logout

Why do you think your glucose reading isn't normal? ⓘ

Enter notes here

Please enter a note explaining why your glucose reading isn't normal

Next

Diabetes Monitoring

Gregg Norman
1275-4307Logout

Why do you think your glucose reading isn't normal? ⓘ

Enter notes here

Next

Please enter possible reasons as to why you might think your reading is abnormal. This could be things such as:

- Drinking soda
- Ate a lot recently
- Haven't eaten enough
- Sick

Close

After the user has submitted their notes, the app shows a friendly "thank you" page and allows the user to logout so that other's may access the system.

Diabetes Monitoring

Gregg Norman
1275-4307Logout

Thank you for recording your glucose reading!

Logout

Normal Blood Sugar

If the user's blood sugar is within their normal range, the app informs them off this. Since there are no abnormalities, there is no need for any notes and thus the app gives the user the option to log out so that the next user may access the system.

Your blood sugar is in your normal range.

Thank you for continuing to monitor your health!

Logout