

# **Technical Specifications (Rev. 2)**

Team No Stress

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# Tech Specs - What The Food? PWA

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## Overview

Our product is being built as A Progressive Web App or PWA for short. PWAs function as a website, but are downloadable on a phone and are virtually indistinguishable from a mobile app. The purpose of this choice is to maximize the amount of users we can target. PWAs remove the limitation of building for a specific OS or device and instead allow us to work on any device that has Google Chrome and an internet connection. Our application provides users with instant access to information on a variety of name brand food products. Speed is a priority for our application. The faster a user can get from taking their phone out of their pocket, to seeing the desired information, the more value our product provides. For specifics on how the product works and a breakdown of functionality, please refer to the [BRD](#). For visualization of the planned UI, refer to the [sitemap](#). For a comprehensive overview of the project as a whole, refer to the [HL Design document](#). This project is expected to take just shy of a year to complete, with the first half dedicated to planning and managing documentation. A list of coding standards can be found [here](#). The coding standards provided were created by Vatanak Vong.

## Assumptions

- Speed is everything when it comes to our application, the faster we can give the user the information they are looking for, the more likely they will continue using the application and may potentially recommend it to others.
  - The key here is both fast load time, and the fewer clicks the better.
- Alongside speed, reliability of information is essential as incorrect information makes the application worthless. The database must be monitored closely and pass frequent automated tests to validate information within it.
- We will only be targeting users who know American English and are located within the contiguous United States.
- We are only ensuring compatibility on Google Chrome browsers with the following versions:
  - 94.0.4606.61 for Windows and Android
  - 94.0.4606.52 for iOS

## Out of Scope

- Offline Use
  - The application requires an active internet connection in order to send and receive information from the database.
  - The option to allow the users to scan products and have it return results later was considered, however not returning results immediately significantly hurts the products value. Additionally, it is reasonable to assume most users will have internet access through either free wifi in grocery stores, or from their own data plan connected with the phone.

## Software

- Communication Software:
  - Discord
    - Internal instant messaging and voice calls.
      - Stand meetings are done daily in the team member Discord server. Upon meeting time all members manually join the meeting and present their stand up. The benefit of Discord over Zoom is it allows the team to create multiple calls at the same time. This is useful when the team breaks up into smaller teams to focus on specific tasks. Team members are able to quickly swap between calls to communicate with the other sub teams. Additionally allows for privately messaging individual team members if a topic does not require the attention of the entire team.
  - Outlook
    - Email communication with the client.
      - All deliverables are to be emailed to the client unless specified otherwise. The only acceptable email to contact the client at is [vatanak.vong@csulb.edu](mailto:vatanak.vong@csulb.edu)
      - Team members contacting the client must abide by the following guidelines:
        - All email communication from team members must have the subject line in this format:
          - CECS 491A - Sec # - Purpose
          - # being your enrolled class section number
          - Purpose being a very short description for the purpose of the email
        - If the email is regarding a team matter, then make sure to CC the entire team in alphabetical order by first name
        - If the email is a personal matter, then you don't need to CC anyone
        - Don't make email body verbose; get to the point and ask specific questions
        - Don't list your team members in the email body
        - Don't repeat the subject line in the email body
  - Slack
    - Emergency communication with the client.
    - If a new team member joins they must acquire an invite to Slack by contacting the client through the email listed above. This should be done ASAP to avoid any issues in the event Outlook goes down.
  - Zoom
    - General communication with the client.
      - For all internal voice calls our team uses Discord, however many clients tend to be more familiar with Zoom so we require its use in order to accommodate the client.

- Document Software:
  - Diagrams.net
    - Used for any basic graphics that we need to help the customer or team visualize the flow of the project.
      - Uses include but not limited to the creation of
        - Decision Tree
        - Site Map
        - UML Diagrams
  - Google Drive
    - Easy way to organize documents and collaborate in real time with team members working on the same document.
      - Used for the creation, storage, and sharing of all technical documents.
      - Documents can be shared to both people inside and outside of the team with read/write access being determined on a by case basis.
      - Google Sheets, a part of Google Drive is used for Burn Down Charts at the end of sprints to graph capacity and velocity. Helping the team visualize how well the sprint planning reflected reality. Allowing the team to better plan for future sprints.
  - Google Sheets
    - Used to create and track the project backlog
- Operating Systems:
  - Windows 10
    - Popular desktop operating system used for development
      - This is the preferred OS of members of our team. Having this operating system makes trouble shooting problems much easier as it reduces the number of variables when compared to a team mates set up.
  - MacOS
    - Alternative desktop operating system used for development. Not preferred, but is an acceptable OS to use. All software will work on MacOS but may require some different steps to set up. Additionally MacOS will be needed for testing the application in that environment.
  - iOS
    - Mobile operating system used for testing and using the web application.
  - Android
    - Mobile operating system used for testing and using the web application.
- Version Control Software:
  - GitHub
    - Used for code collaboration, version control history, and project development
    - Used to store all iterations of important documents to help visualize how they changed over time and provide an opportunity for reflection on how the project development cycle went.

- Project Development Software:
  - Visual Studio Code
    - Multifaceted code editor capable of building and compiling code in many languages
- Programming Languages:
  - HTML 5 (v5.2)
    - HTML will be used to create the structure of the website
    - HTML is a standardized language widely used, the simplicity and well established nature of HTML made it the optimal choice for this project.
  - CSS (v2.1)
    - Rule based language that allows for flexibility on how documents are presented to the users.
    - CSS works well the HTML and allows us to make the website more visually pleasing
  - JavaScript (ECMAScript 2021)
    - JS was chosen over alternatives due to our developers' experience with that language as well as the amount of resources available for trouble shooting or learning.
    - Node JS (16.13.0)
      - Back-end JavaScript library used to build and run server-side code.
      - Used for the creation of the service worker.
  - SQL (Server 2019)
    - Used to create communication with a database
    - Used for logging anything information related within the app
  - MySQL (v8.0.26)
    - Relational database management system based on SQL.
    - This was chosen because MYSQL is the industry standard. Falling into line with what others use makes finding capable developers simpler.
  - C# (.NET 6.0)
    - Will be used to communicate with the relational database.
    - Will be used to write automated tests.
- Client Side Frameworks:
  - Vue (v2.6)
    - Open-source JavaScript framework used for building front-end components.
    - Also used for designing user interfaces.
    - React and Angular were considered for this, however Vue was chosen because it's easier for inexperienced developers to pick up.
- Web Server Host:
  - MariaDB
    - MariaDB is an open-source relational database made by the developers of MySQL.
    - Used as the relational database server of our app.

- Internet Information Services
    - IIS is a web server by Microsoft that runs on Windows systems.
    - Used to host the server for our app.
- Programming Libraries:
  - html5-qrcode
    - Html5-qrcode scanner is an open source barcode reader that will save us a significant amount of time on developing our own system that reads barcodes from images.
    - This will be integrated into the PWA to allow users to scan barcodes. After the scan, the information will be sent to our database for use in many of our features.
  - Entity Framework Core
    - Entity Framework Core is an open-source object relational mapper for .NET applications.
    - Will be used to query data from the relational database as objects in C#.
- Project Testing Software:
  - xUnit
    - xUnit is an open-source unit testing framework for .NET applications.
    - Will be used to automate testing for the project.