

Project Plan Presentation

ASE 485 Capstone Project

Title: NomNom Safe

Focus: Business-Facing MVP & Learning with AI

Problem Domain

Importance & Impact

Solution

Sprint 1 Features

Features

1. Switch backend to Firebase
2. Refactor using SW Design Patterns & Principles
3. Improve navigation
4. Responsive design

Feature 1 Purpose

1. Switch backend to Firebase

Have a single source of data for user- and business-facing sides.

- Current backend uses MongoDB
- Convert backend to access the Firebase DB currently being used by the user-facing side of the app

Feature 2 Purpose

2. Refactor using SW Design Patterns & Principles

Refactor `server` & `client/src/components/auth` folders to enforce maintainability & extensibility by applying:

- SOLID principles
- DRY principle
- Separation of concerns (separate business logic from UI)
- SW Design Patterns

Feature 3 Purpose

3. Improve Navigation

Enhance user experience by implementing intuitive navigation consistently across the app.

- Develop & implement consistent locations for navigation & navigation methods
- Add navigation to pages lacking it
- Add/clarify navigation indicators

Feature 4 Purpose

4. Responsive Design

Enhance user experience across different devices by implementing a clean, flexible design that adjusts properly with different screen sizes.

- Standardize styles across different components
- Standardize layouts across different pages
- Ensure each component & layout adjusts to prevent horizontal overflow

Sprint 1 Requirements Overview

Comprehensive requirements can be found on the [GitHub repo](#)

Feature 1 Requirements

Feature 1: Switch backend to Firebase

Requirements:

- Migrate the backend fully to Firebase by replacing all MongoDB/Mongoose logic with Firestore equivalents and updating API routes to use a clean service-layer architecture.
- Maintain system quality by validating data with Zod, securing Firebase credentials through environment configuration, and ensuring performance and behavior remain consistent or improved after the migration.

Feature 2 Requirements

Feature 2: Refactor using SW Design Patterns & Principles

Requirements:

- Strengthen system reliability and maintainability by enforcing consistent behavior, stable updates, and standardized patterns such as unified error/loading handling and centralized API logic.
- Refactor using clean architecture and SOLID principles—removing duplication, separating concerns, breaking down large components, and improving naming and documentation to support long-term scalability and contributor onboarding.

Feature 3 Requirements

Feature 3: Improve Navigation

Requirements:

- Strengthen navigation clarity and usability by creating intuitive entry points, consistent patterns, and responsive, accessible layouts supported by contextual aids like breadcrumbs.
- Ensure smooth, uninterrupted movement between pages by preserving user state, preventing broken routes, and providing helpful feedback such as loading indicators during transitions.

Feature 4 Requirements

Feature 4: Responsive Design

Requirements:

- Deliver a fully responsive interface that adapts fluidly across mobile, tablet, and desktop through flexible layouts, scalable typography, and properly resizing visual elements.
- Maintain a professional, accessible user experience by ensuring consistent visuals, eliminating horizontal scrolling, and supporting responsive navigation patterns that work cleanly on all screen sizes.

Sprint 1 Milestones

4-week sprint (2/2/2026 - 3/1/2026) with weekly goals

Week 1: Convert Backend to Firebase

- **Dates:** 2/2/2026 – 2/8/2026
- **Focus:** Convert the entire backend to accommodate a Firebase DB
- **Requirements:** 1.1-1.8

Week 2: Refactor Foundation

- **Dates:** 2/9/2026 – 2/15/2026
- **Focus:** Lay the foundation for refactoring the `server` & `auth` directories using Software Design Principles
- **Requirements:** 2.1-2.11

Week 3: Complete Refactor + Improve Navigation

- **Dates:** 2/16/2026 – 2/22/2026
- **Focus:** Complete the refactor and improve navigation across the app for consistency & simplicity
- **Requirements:** 3.1-3.11

Week 4: Implement Responsive Design

- **Dates:** 2/23/2026 – 3/1/2026
- **Focus:** Implement a consistent design across the app that responds appropriately to different screen sizes
- **Requirements:** 4.1-4.11

Directory Structure

Directory Structure Overview

```
Business-Side/
  client/          # Client side
    tests_/
      integration/
        setup/
    public/
    src/
      assets/
      components/
      styles/
      utils/
      App.jsx
      index.jsx
    package.json
  docs/           # Project & individual documentation
    individual/
      anna-dinius/
      jeff-perdue/
    modules/
  scripts/         # Python scripts that aid in documentation
  server/          # Server side
    tests_/
      integration/
      setup/
    src/
      config/
      models/
      routes/
      utils/
    package.json
    README.md
    server.js
  package.json     # Top-level package.json for installing all dependencies with a single command
  README.md
```

Client-Side Directory Structure

```
client/
  └── tests/
    └── integration/          # Multi-component tests (e.g. integration, e2e)
      └── setup/
    └── public/
      └── index.html
  └── src/
    ├── assets/
    │   └── icons/
    │       └── images/
    ├── components/
    │   └── setup/
    │       └── ChooseBusiness/
    │           ├── ChooseBusiness.jsx
    │           └── ChooseBusiness.scss  # Components grouped by category
    │           ...
    │           ...
    └── styles/
        └── global.scss          # Individual component folders
    └── utils/
    └── App.jsx
    └── App.test.js            # Colocated stylesheets
    └── index.jsx
  └── package.json            # Colocated unit test files
                            # Separate package.json for client side dependencies
```

Server-Side Directory Structure

```
server/
  └── tests_/
    └── integration/          # Multi-component tests (e.g. integration, e2e)
      └── setup/
    └── src/
      ├── config/
        └── db.js
        └── db.test.js          # Colocated unit test files
      ├── models/
        ├── Business.js
        └── Business.test.js    # Colocated unit test files
        └── ...
      ├── routes/
        ├── adminRoutes.js
        └── adminRoutes.test.js # Colocated unit test files
        └── ...
      └── utils/
    └── package.json            # Separate package.json for server side dependencies
    └── README.md
    └── server.js
```

Docs Directory Structure

```
docs/
└── individual/
    ├── anna-dinius/
    │   └── ppp-dinius.md          # Anna's individual progress reports & presentations
    └── jeff-perdue/
        └── ppp.md                # Jeff's individual progress reports & presentations
└── modules/                      # Docs for each module
    ├── AdminModule.md
    ├── AuthenticationModule.md
    └── ...
└── file-structure.txt            # Comprehensive file structure of entire repo
└── Requirements.md
└── UserManual.md
```

Links

GitHub Repos

- [NomNom Safe Business-Side repo](#)
- [Learning with AI repo](#)

Canvas Pages

- [Individual Project - Anna Dinius Canvas page](#)
- [Individual Progress - Anna Dinius Canvas page](#)