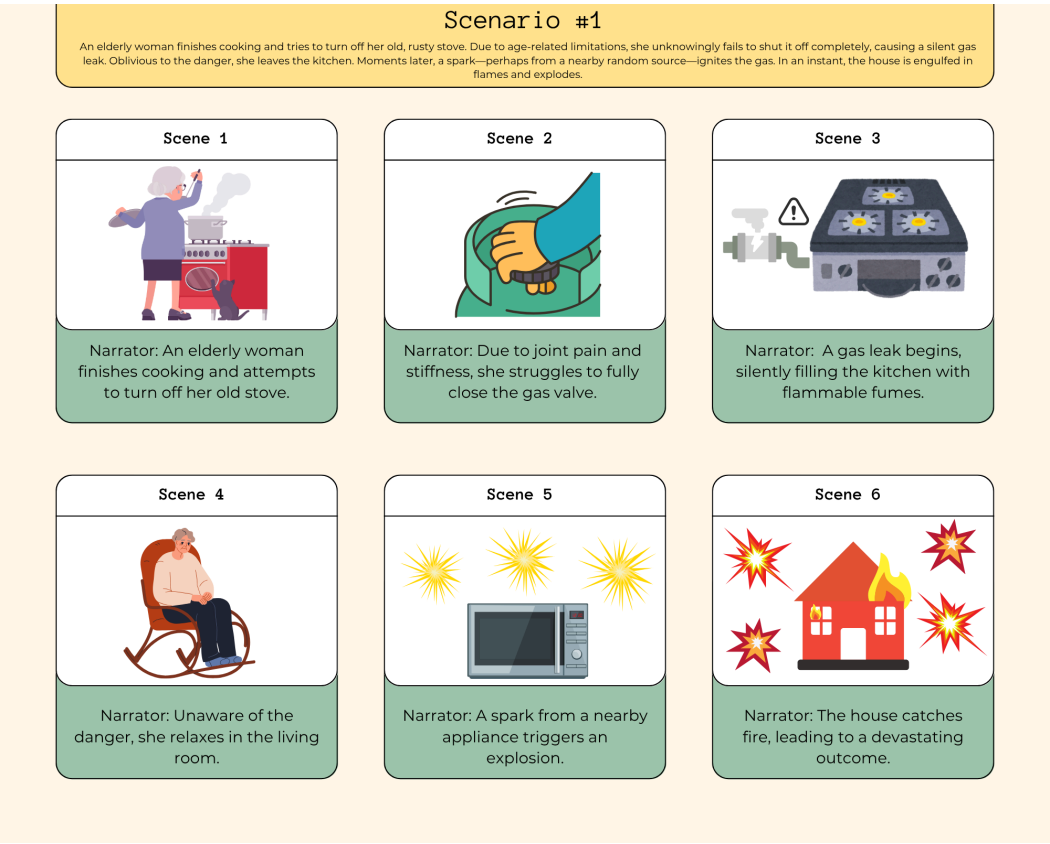
Scenario

Scenario 1: An elderly woman finishes cooking and tries to turn off her old, rusty stove. Due to age-related limitations, she unknowingly fails to shut it off completely, causing a silent gas leak. Oblivious to the danger, she leaves the kitchen. Moments later, a spark—perhaps from a nearby random source—ignites the gas. In an instant, the house is engulfed in flames and explodes.

Scenario 2: Lola Cherry, an elderly woman living alone, begins her usual morning routine by cooking breakfast. She turns on the stove but gets distracted by a phone call and unintentionally leaves the pot. As time passes, flames start to form while Lola Cherry remains unaware. With no one around to notice the danger, a simple distraction quickly escalates into a fire hazard.

Scenario 3: Nanay O'Nanay cooked her favorite dish but forgot to turn off the stove. She was used to being the first person out of the kitchen, as her grandchildren would use it after her. Unfortunately, the gas valve was left open and unattended for a long period of time. Thankfully, nothing happened—but it could have turned into a hazardous and disastrous situation.

Storyboards



Scenario #1

Scenario #2

Lola Cherry, an elderly woman living alone, begins her usual morning routine by cooking breakfast. She turns on the stove but gets distracted by a phone call and unintentionally leaves the pot. As time passes, flames start to form while Lola Cherry remains unaware. With no one around to notice the danger, a simple distraction quickly escalates into a fire hazard.

Scene 1

Lola Cherry: Let me cook.

Scene 2

Phone ringing

Scene 3

Narrator: The pot continues to heat up unattended.

Scene 4

Narrator: Without attention, a hearty meal became a fire risk.

Scene 5

Narrator: Lola Cherry unaware of the growing risk.

Scene 6

Lola Cherry: wowowow naay nasunog~

Scenario #2

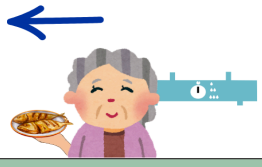
SCENARIO #3

Nanay O'Nanay cooked her favorite dish but forgot to turn off the stove. She was used to being the first person out of the kitchen, as her grandchildren would use it after her. Unfortunately, the gas valve was left open and unattended for a long period of time. Thankfully, nothing happened—but it could have turned into a hazardous and disastrous situation.

Scene 1

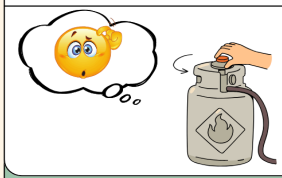
Narrator: O'Nanay cooks her favorite after turning on the gas and stove.

Scene 2



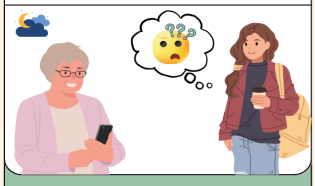
Narrator: O'Nanay successfully cooks her food and goes her merry way.

Scene 3



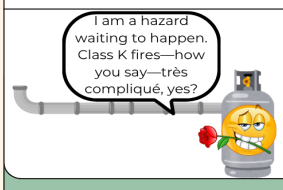
Narrator: O'Nanay eats her food, forgetting turn off the gas.

Scene 4



Narrator: Later that night, her grandchild arrived from school. She asked her granchild if the gas was off. Despite O'Bata just arriving a few minutes ago.

Scene 5



Narrator: The LPG gas was left unattended for the majority of the day.

Scene 6

Narrator: O'Bata went to check and saw how the valve was very loose. Thankfully, nothing happened.

Scenario #3

Problem Statement

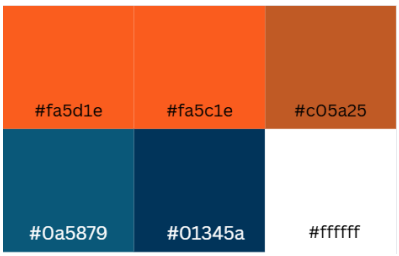
- **An elderly woman was unable to properly turn off the stove due to age-related difficulties, resulting in a gas leak**
- **An elderly woman inadvertently starts a kitchen fire while cooking breakfast, distracted by a phone call.**
- **Elderly woman forgets to turn off the stove, leaving gas leaking unattended (causing a safety risk).**

Application Size Comparison

Design

The Kitchen Sentinel companion app is designed to reflect a clean, minimalist interface suitable for both elderly users and caregivers. To support this design direction, the team is currently evaluating key visual elements, including the color palette, font style, and the overall graphical user interface (GUI).

Color Palettes



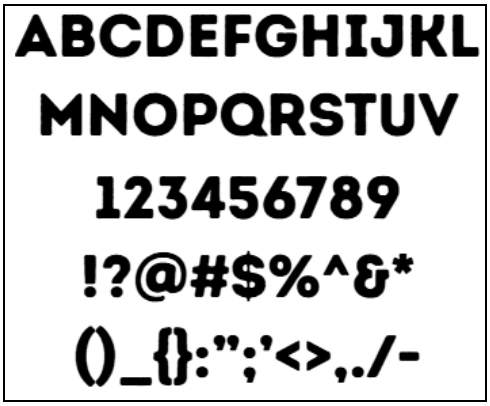
Color Palette 1

Color Palette 2

Color Palette 3

Several color palettes are being explored, with a focus on readability, accessibility, and visual comfort. Although the final selection has not yet been made, the chosen palette will be finalized before the prototyping stage to ensure a consistent and user-friendly visual experience throughout the app.

Font Style



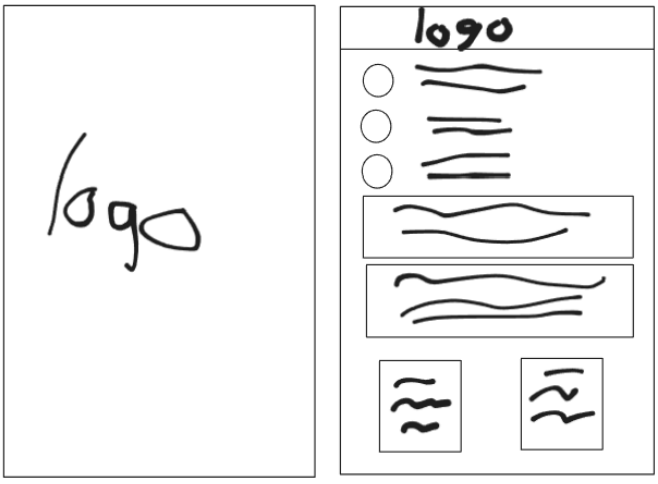
The team has chosen Intro Rust as the primary font for the Kitchen Sentinel application. This font was selected for its bold, clear appearance, which aligns well with the app's goal of being both readable and visually engaging, particularly for elderly users. While it offers a more distinctive look than standard minimalist fonts, the team believes it strikes a balance between simplicity and character—making it suitable for a modern, functional design that stands out without being overwhelming.

Graphical User Interface (GUI) and Feature Flow

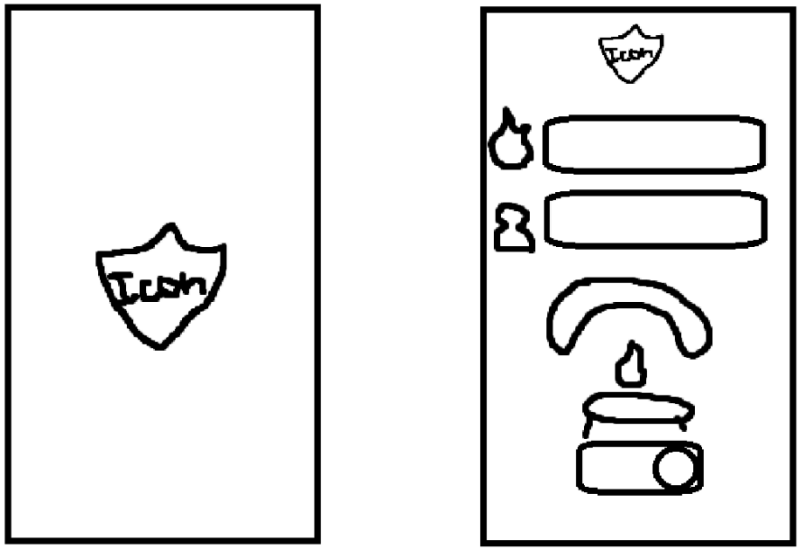
The team has decided to design the application using the Android GUI framework to maintain simplicity and consistency. By focusing on a single platform, the team avoids the complexity of developing and maintaining multiple interface versions. The design will be based on Android UI.

The application features a single main screen with a minimal set of controls designed for ease of use. This interface highlights the most important system statuses, such as fire detection, motion sensing, gas detection, and alert notifications. By concentrating on these key elements, the design ensures users can quickly assess critical information and respond effectively to alerts.

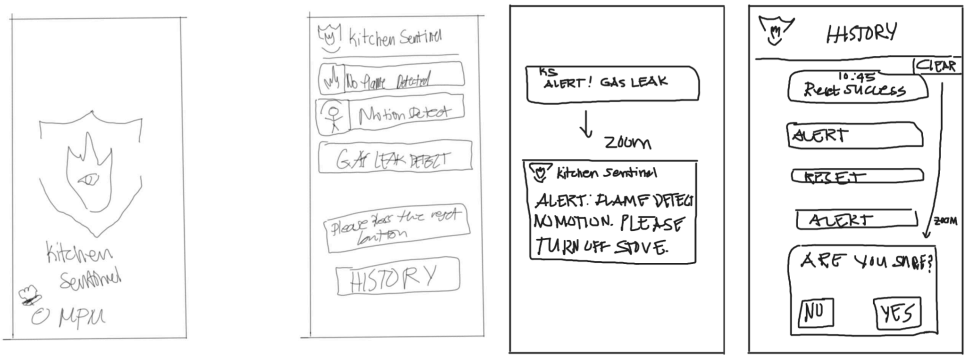
Design Sketches and Alternatives
Sketch 1:



Sketch 2:



Sketch 3:



The hand-drawn sketch shown above serves as the initial visual draft for Design 3. It illustrates the layout and core features of the application, including the loading screen, system dashboard, history log, and alert notifications. The sketch was created using digital drawing tools to visualize the structure and flow of the design before moving on to detailed mock-ups.

Mock-up/Prototype

The team developed a series of interface mock-ups to visualize the core features of the Kitchen Sentinel application. Each mock-up represents a key screen or functionality intended to support user interaction and hazard awareness.

Mock-Up #1

Loading Screen:

- Displays the Kitchen Sentinel logo prominently on startup.
- Establishes brand identity with a clean, centered visual of the app's shield/flame/eye logo and the app name in bold.
- Sets a professional and trustworthy tone before entering the main functionality.

Dashboard:

- Presents a real-time status overview with a visually intuitive interface.
- Displays status for three core monitoring systems:
- Gas Leak Detection (blue icon – "NO LEAKS DETECTED")
- Flame Presence Detection (red icon – "FLAME DETECTED!")
- Motion Detection (red icon – "NO MOTION DETECTED!")

Alert Panel:

- Highlights critical situations, e.g., "Flame presence detected with no motion!" in a bold red box.
- Emphasizes urgency and directs user attention immediately.

Caregiver Notification:

- Displays confirmation that an alert has been sent to the caregiver.
- Uses high-contrast text to ensure visibility (turquoise background with orange font).

Navigation Buttons:

- Activity Log – leads to the history of detected events.
- Settings – allows users to configure detection parameters and notifications.

Activity Log:

- A chronological list of events (e.g., gas leak alerts, motion detection changes).
- Timestamps for each event to support review by caregivers or users.

Mock-Up #2

- **Loading Screen -** Greets the user with a centered Kitchen Sentinel logo and uses a warm, minimalist background to establish a sense of safety and simplicity.
- **Dashboard -** Provides a clear snapshot of current kitchen conditions using a friendly and clean UI. Highlights status indicators:
    - **Flame Status** - uses a green button labeled *“NO FLAME DETECTED”* to indicate safety and switches to orange when a flame is present.
    - **User Presence** - shows orange with “UNATTENDED” when no motion is detected and vice versa.
    - **gas leak monitor gauge** - uses a color-coded arc—from green (safe) to red (danger)—to indicate gas levels in real time
    - **burner icon with a toggle switch** - visually represents the system’s active status, allowing users to easily identify and control gas monitoring.

Mock-Up 3:

- **Loading Screen** - Displays the Kitchen Sentinel app logo and Team MPM logo upon startup to set a branded and professional tone.
- **Dashboard** - Features a clean layout with simple icons representing the system's three core detection functions:
    - Gas Detection
    - Fire/Heat Detection
    - Motion Detection
    - *Alerts are visually highlighted next to each icon when a threat is detected. As well as the History button.*
- **History Log** - Displays a list of past alerts and events, organized chronologically. Timestamps are shall included to allow caregivers or users to review specific incidents.
- **Notification Screen** - Pop-up notifications appear with detailed messages. These notifications are designed to be high-contrast and easily readable.