

An aerial photograph of a forest fire. Thick, dark grey and white smoke billows upwards from the burning area, partially obscuring the sky. Below the smoke, bright orange and yellow flames are visible, consuming the forest floor and some trees. The surrounding forest consists of tall, dark green evergreen trees. The overall scene is dramatic and intense.

Asher Application

Team: Fire Watch February 1st, 2023

Asher Application Overview

The Asher Application allows data scientists and post-fire assessment teams to document information about the ash after a fire has occurred. The information collected from these forms will be submitted to the data scientist's database, where they will later be able to review a site's progress up to that point. One way this data can be used is to see whether or not ash will contaminate nearby water systems. With this information, the scientists can devise a plan to prevent or help the situation so it will not be as bad.



Users and Environment

Users:

Data Scientists- They will analyze the ash samples uploaded to the database by other scientists or the post fire assessment teams.

Post-fire assessment teams- They will help with data collection of the ash after the fire has occurred.

Environment:

On-Site - The post fire-assessment teams and data scientist teams will be collecting data at the sites of recent wildfires, each looking at different plots at the site.

Lab - The scientists will be analyzing the data collected from the field to determine the progress of the site and whether the ash may get to water systems so they can better prepare if this happens.



Cognitive Walkthrough For Asher Application

Use Scenario: Filling Out An Ash Information Form



Use Scenario Personas

Persona 1: Tina Brooke (Data Scientist)

Tina Brooke is a 33-year-old data scientist who has spent two years in the field so far. She enjoys what she does and seeing the progress of the sites she visits over time. She has used the old application to log the ash data and is excited to try the new Asher Application, which will be more intuitive and user-friendly.

Persona 2: John Hunt (Post-fire Assessment team member)

John Hunt is a 27-year-old who has been a part of the post-fire assessment team for almost a year now. He is passionate about seeing the different types of burn sites and analyzing their potential impacts on the environment. John has only used the old application a few times, but he believes there could be a better application to do so. He will be using the new Asher application for the first time in this scenario.



Use Scenario: Data Scientist Tina Brooke

Context:

After a fire, Tina will go to the burn site and use our application to gather information about the fire. Tina will return every two to four weeks to see how the burn site is progressing and fill out a form for each visit, performing the same steps each time.

Tina's Steps:

1. Tina opens the Asher Application.
2. She logs in to the Asher Application with her credentials.
3. She begins to fill out the form, starting with filling out her name, the site and plot ID, and then begins taking pictures of the ash.
4. She selects the dominant ash color in her plot.
5. Tina measures the depth of the ash and types it into the ash depth text box.
6. She then moves to the additional information text box, where she describes the moisture content of the ash and other important details of her plot.
7. Tina has checked over her form and is now ready to submit it to the database.
8. Finally, Tina clicks the submit button, and she moves on to her next plot.



Use Scenario: Post Fire Assessment Team- John Hunt

Context:

After a fire, a post-fire assessment team arrives at the burn site and plans to use our application to gather information about the fire to help with their assessment. John has decided to be the one to collect the data for this fire.

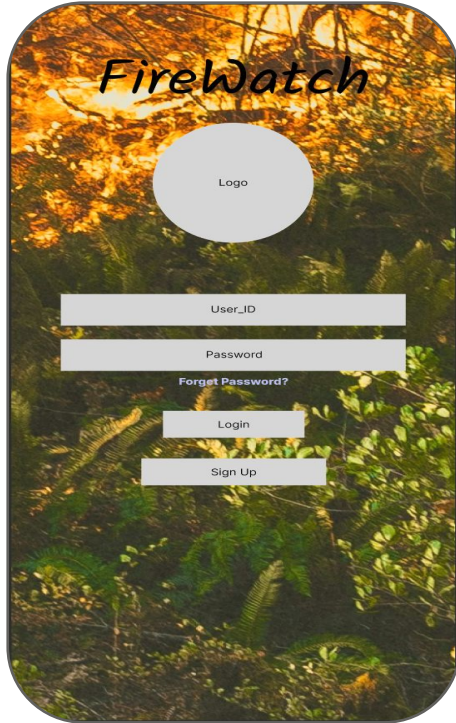
John's Steps:

1. John opens the Asher Application.
2. He logs in to the application with his credentials.
3. John then clicks the "Begin Form" button.
4. He begins to fill out the form, starting with filling out his name specifying he is on the post-fire assessment team, the site ID. He then begins taking pictures of the ash.
5. John struggles to get the camera to take pictures using the application.
6. He goes to the device's camera application and takes pictures, then navigates back to the Asher application and selects them from the camera roll to upload to the form.
7. John selects the dominant ash color at the site from the ash ruler on the application.
8. John measures how deep the ash is and then enters this into the ash depth box.
9. John moves on to the additional information description box and adds details of the site.
10. John checks over his form and prepares to submit it.
11. John clicks the submit button and then logs out.



Paper Prototype Views

Login View



FireWatch

Logo

User_ID

Password

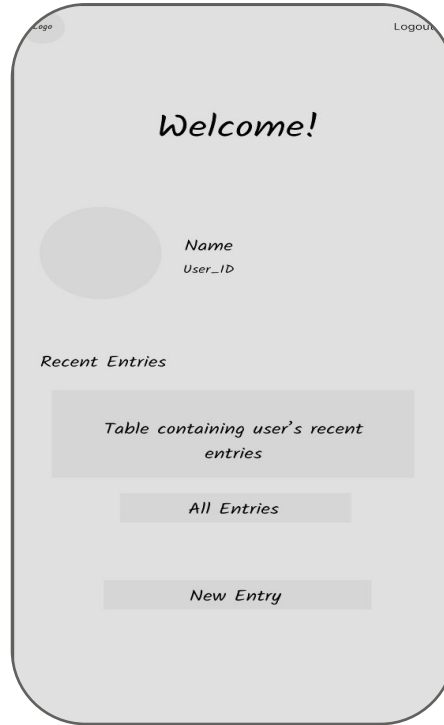
Forget Password?

Login

Sign Up

The Login View is a paper prototype for a mobile application. It features a background image of a forest with autumn foliage. At the top, the text "FireWatch" is written in a cursive font. Below it is a circular placeholder for a logo. The form includes input fields for "User_ID" and "Password", a "Forget Password?" link, and two buttons labeled "Login" and "Sign Up".

Home View



Welcome!

Name

User_ID

Recent Entries

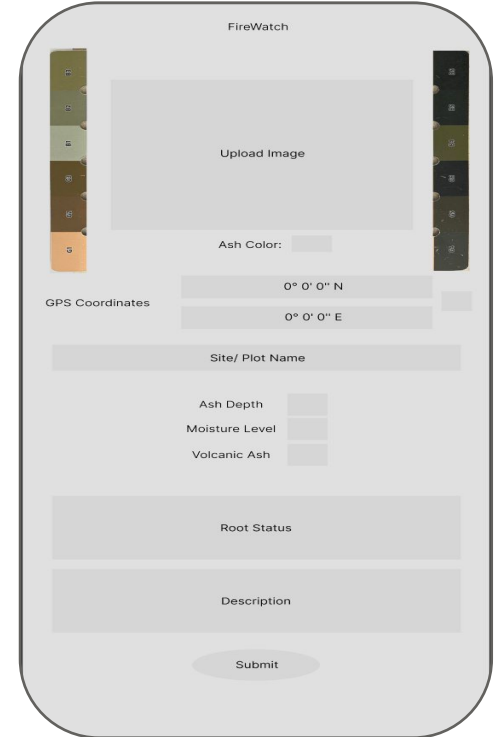
Table containing user's recent entries

All Entries

New Entry

The Home View is a paper prototype for a mobile application. It features a light gray background. At the top, the text "Welcome!" is written in a cursive font. Below it is a circular placeholder for a user profile picture, followed by the text "Name" and "User_ID". The view includes a section titled "Recent Entries" with a placeholder for a table containing the user's recent entries. At the bottom, there are two buttons labeled "All Entries" and "New Entry".

Form View



FireWatch

Upload Image

Ash Color:

GPS Coordinates

0° 0' 0" N

0° 0' 0" E

Site/ Plot Name

Ash Depth

Moisture Level

Volcanic Ash

Root Status

Description

Submit

The Form View is a paper prototype for a mobile application. It features a light gray background. At the top, the text "FireWatch" is written in a cursive font. The form includes an "Upload Image" field, an "Ash Color:" field, and "GPS Coordinates" fields with input for "0° 0' 0" N" and "0° 0' 0" E". There are also fields for "Site/ Plot Name", "Ash Depth", "Moisture Level", "Volcanic Ash", "Root Status", and "Description". At the bottom, there is a "Submit" button.

Other App Content

In terms of having a “Help View,” the users of our application are those who are used to working with technology on a daily basis and will know how to use mobile or web applications. The majority of the users will also have experience with the previous data collection form, which will allow them to understand how this new Asher application will work. With this in mind, we will most likely not have a “Help View.”



Other App Content Continued

There is a possibility that the database containing all of the ash data for each site will be accessible on the application. We are still waiting to hear back from our scientists on whether or not they want this. If our scientists decide to have this feature, then we will need to have the login page since the data should only be accessed by those who are a part of this project.

Our scientists also have yet to decide on whether they would like to have a login page and how they would like to implement that, whether each person should have their own login credentials, or if a whole team would have one account to log in.

Currently, we plan to have a login page until we hear back from our scientists.



Usability Goals and Concerns

Usability Goals: We want our application to be efficient, learnable, memorable, safe, and effective.

Potential Usability Challenges: Having access to the database on the field, ash color mismatches, accidentally deleting a form in progress, uploading the wrong information, and if we have a login functionality, there may be issues when a user or team is attempting to login.



An aerial photograph of a large forest fire. The scene is dominated by thick, billowing white and grey smoke that rises from the burning area. Below the smoke, bright orange and yellow flames are visible, consuming parts of the forest. The surrounding forest consists of tall, dark green evergreen trees, some of which appear charred or dead. The overall atmosphere is one of intense heat and destruction.

Any Questions?
