# Water pump prediction UX design

Dennis

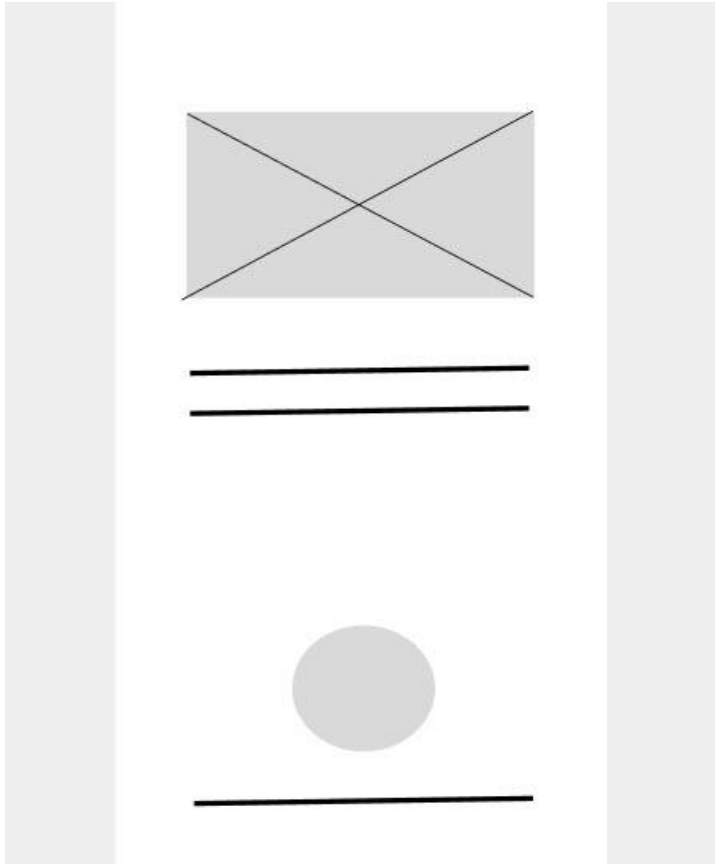
# Project overview

## The product:

This app is used to predict the water pump conditions for a Water department.

## Project duration:

July 2022 to December 2022



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# Project overview

## The problem:

Currently the water department having difficulty locating which water pump that needed replacements or repair in their area.

## The goal:

Design an app to use artificial intelligence technology to predict which water pump due to expire.

# Project overview

## My role:

UX designer intern in charge of this project.

## Responsibilities:

Performed user research, design, mockups, prototypes.

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# Understanding the user

- User research
- Personas
- Problem statements
- Competitive audit
- Ideation

# User research: summary

Based from user’s interview, they need an app to be able to predict the water pumps in advance so that the water department can quickly fix them for proper water supply.

# Persona 1: **Participant A**

Problem statement:

A is a Water Dept Officer who needs the app outside daily because he is always on the move.

**Participant A**

**Age:** 35
**Education:** BA
**Hometown:** S----------
**Family:** Single
**Occupation:** Officer

*"Using AI in water pump issues"*

**Goals**

- Able to zoom in/out in web browser
- Able to work in remote areas with poor internet

**Frustrations**

- Too much screen scrolling
- Web interfaces confusing

Participant A needs to use the application to predict water pumps without internet. He prefers to be able to use the mobile app on the move.

# Persona 2: **Participant B**

Problem statement:

B is currently interning in water department who needs to test the app functionality as this task was assigned to her.

**Participant B**

**Age:** 21
**Education:** High School
**Hometown:** S----------
**Family:** Stay with parents
**Occupation:** Intern

*"Jovial and outgoing personality, willing to learn technology"*

**Goals**

- Able to predict pump failure in short time
- Responsive app and save storage space

**Frustrations**

- Lost and confused in using the mobile app
- No user guide built into the application

Participant B is currently doing internship that is piloting AI as part of improving efficiency and reduce labour costs in long term. She is keen to learn and give feedback on machine learning mobile app usage.

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# Competitive audit

This application is first time ever being introduced to use AI in real-time to water department.

There are NO competitors outside offering this service.

# Ideation

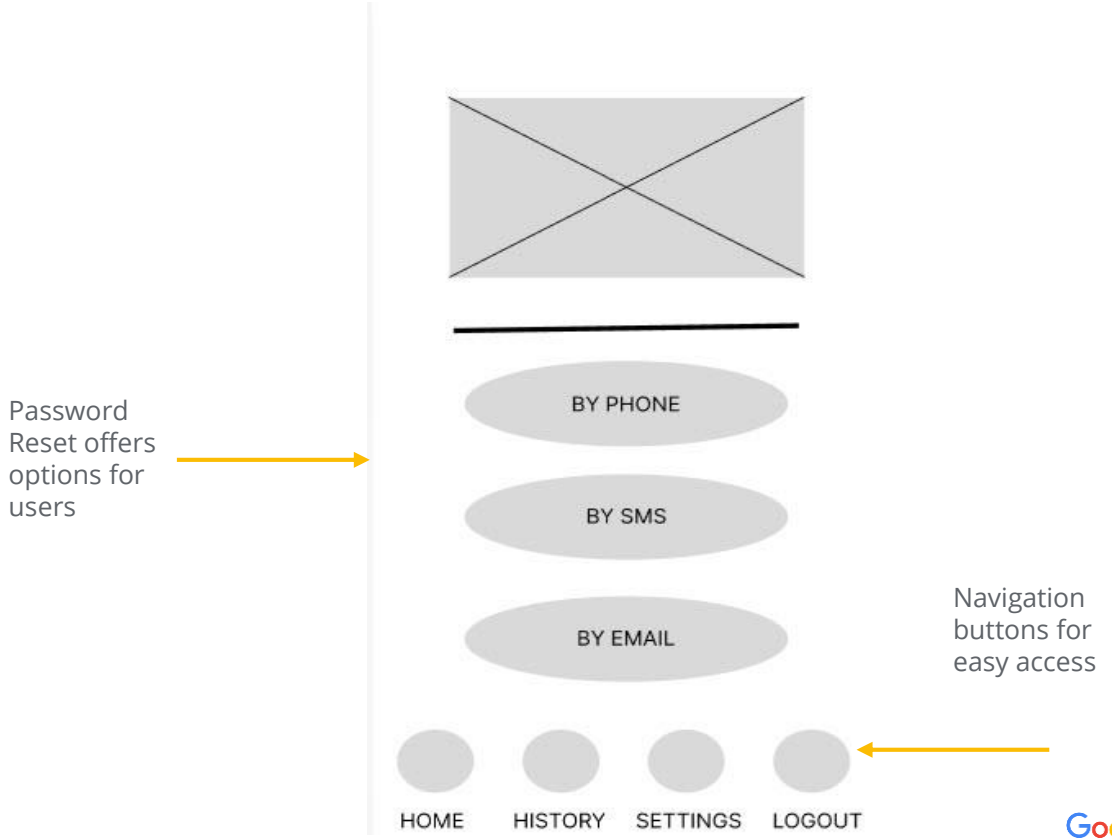
For phase one of this project, the **minimum task** to be done by users able to enter relevant data and get predictions.

# Starting the design

- Digital wireframes
- Low-fidelity prototype
- Usability studies

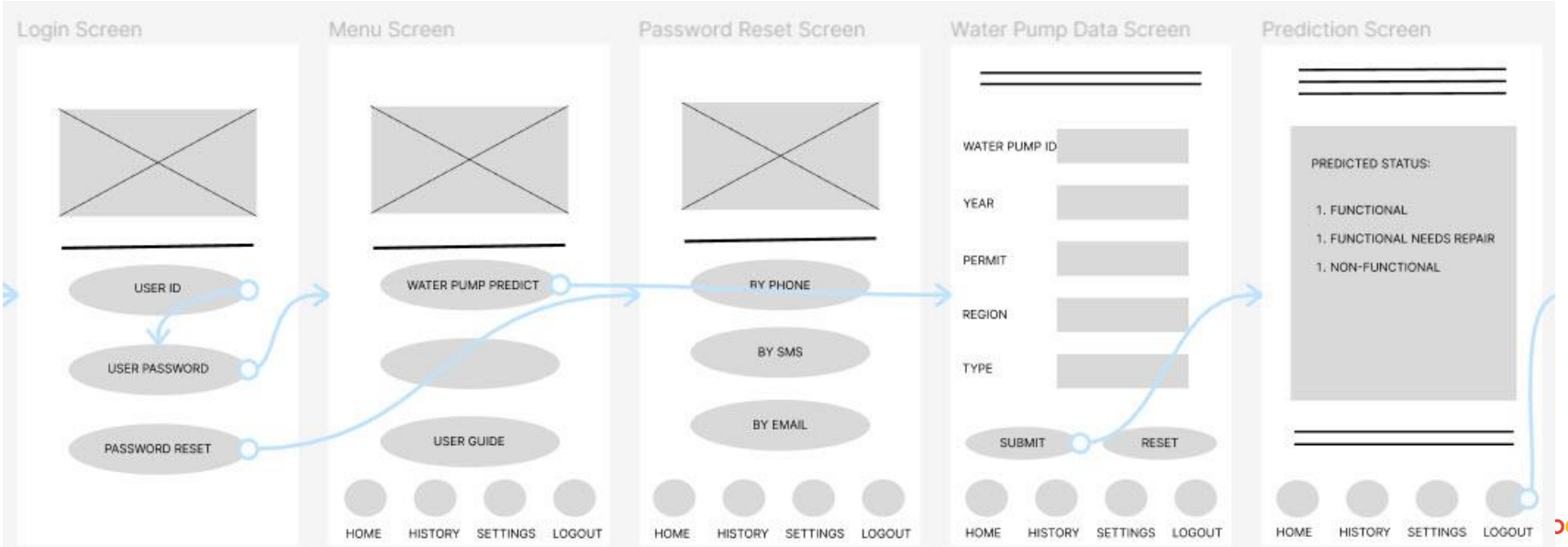
# Digital wireframes

Based from users feedback, I included Password Reset screen for users to choose from.



# Low-fidelity prototype

This is a general flow on user's way to using the app.



# Usability study: parameters

Study type:

Unmoderated and moderated usability study

Location:

Africa, remote and onsite

Participants:

7 participants

Length:

30-60 minutes

# Usability study: findings

Insert a one to two sentence introduction to the findings shared below.

1

### Login

Users need to be able
To reset password easily

2

### Accessibility

Users would like to have extra options like font sizing, magnifier options

3

### Data

Users need to ease in data entries and smooth selections

# Refining the design

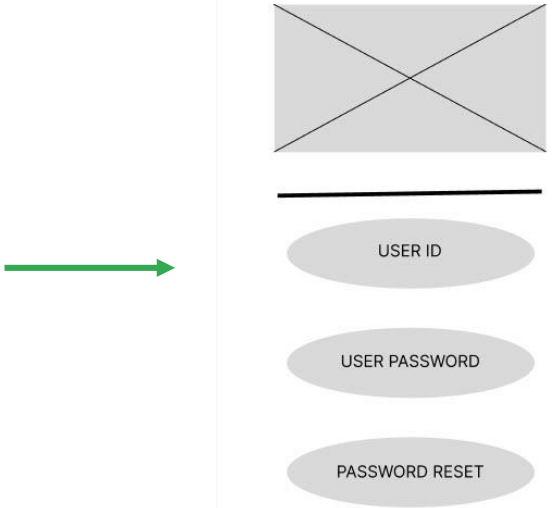
- Mockups
- High-fidelity prototype
- Accessibility

# Mockups

I provided the new option for password reset in login screen.

Before usability study

Mockup 1 before

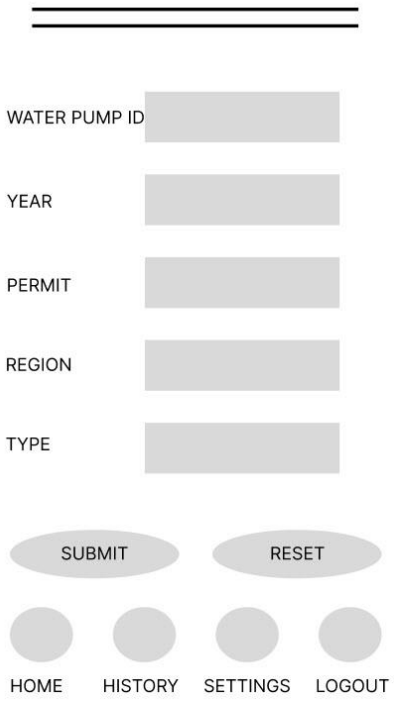


After usability study

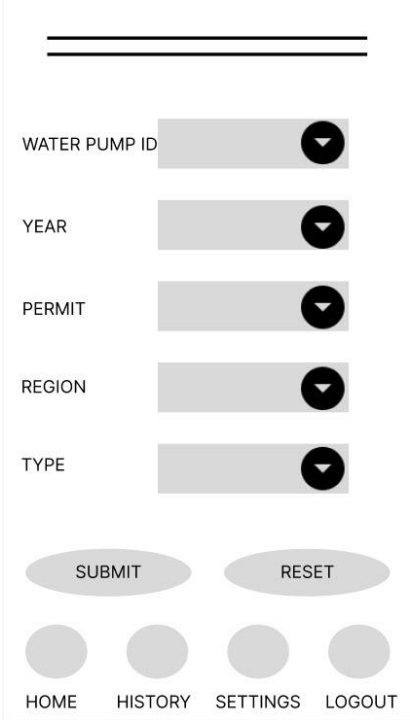
# Mockups

In order for users to enter data faster, we create option of drop-down buttons for selections.

Before usability study




After usability study

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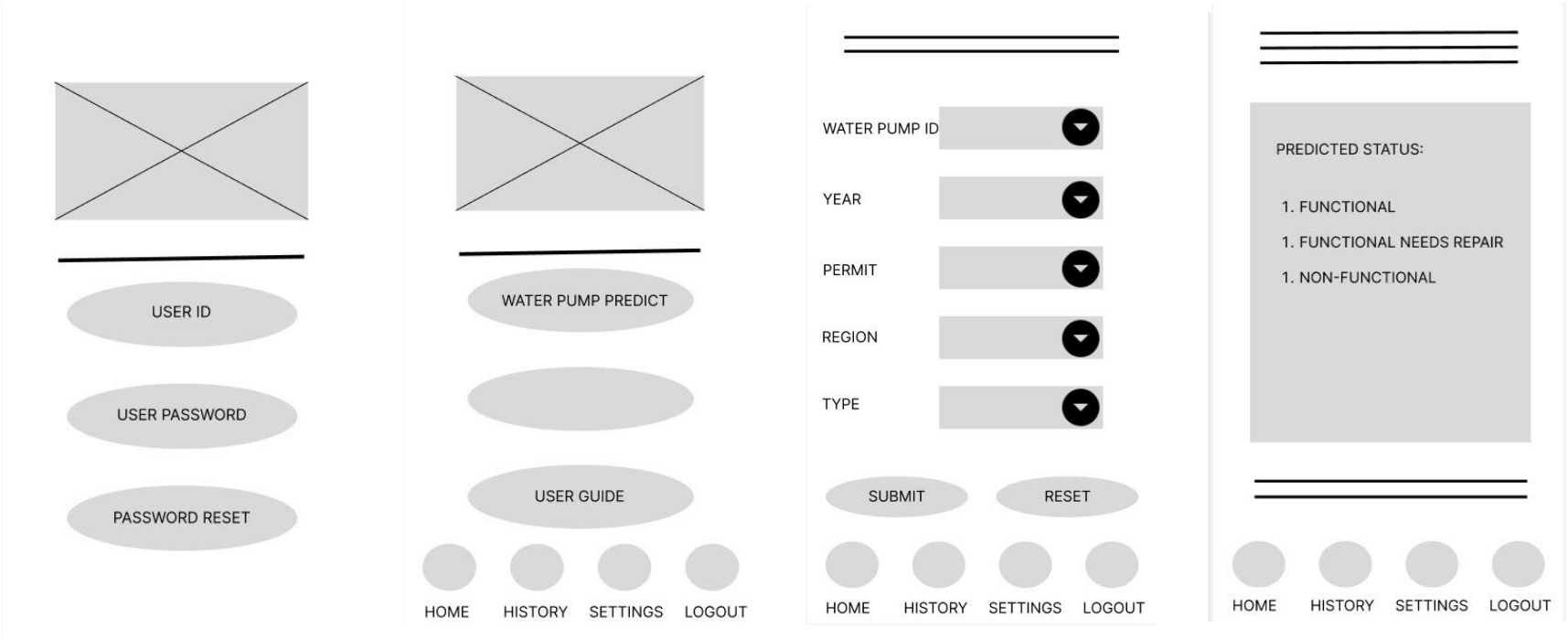
# Mockups


USER ID
USER PASSWORD
PASSWORD RESET
WATER PUMP PREDICT
USER GUIDE
HOME
HISTORY
SETTINGS
LOGOUT
WATER PUMP ID
YEAR
PERMIT
REGION
TYPE
SUBMIT
RESET
HOME
HISTORY
SETTINGS
LOGOUT
PREDICTED STATUS:
1. FUNCTIONAL
1. FUNCTIONAL NEEDS REPAIR
1. NON-FUNCTIONAL
HOME
HISTORY
SETTINGS
LOGOUT

# High-fidelity prototype

Screenshot of prototype with connections or prototype GIF

# Accessibility considerations

1

Font size options to increase/decrease

2

Dashboard buttons for easy access

3

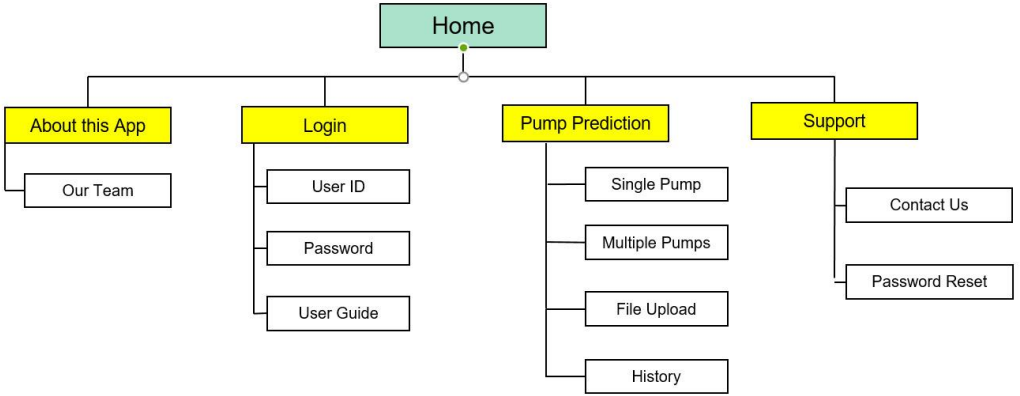
Future voice to text can be implemented

# Responsive Design

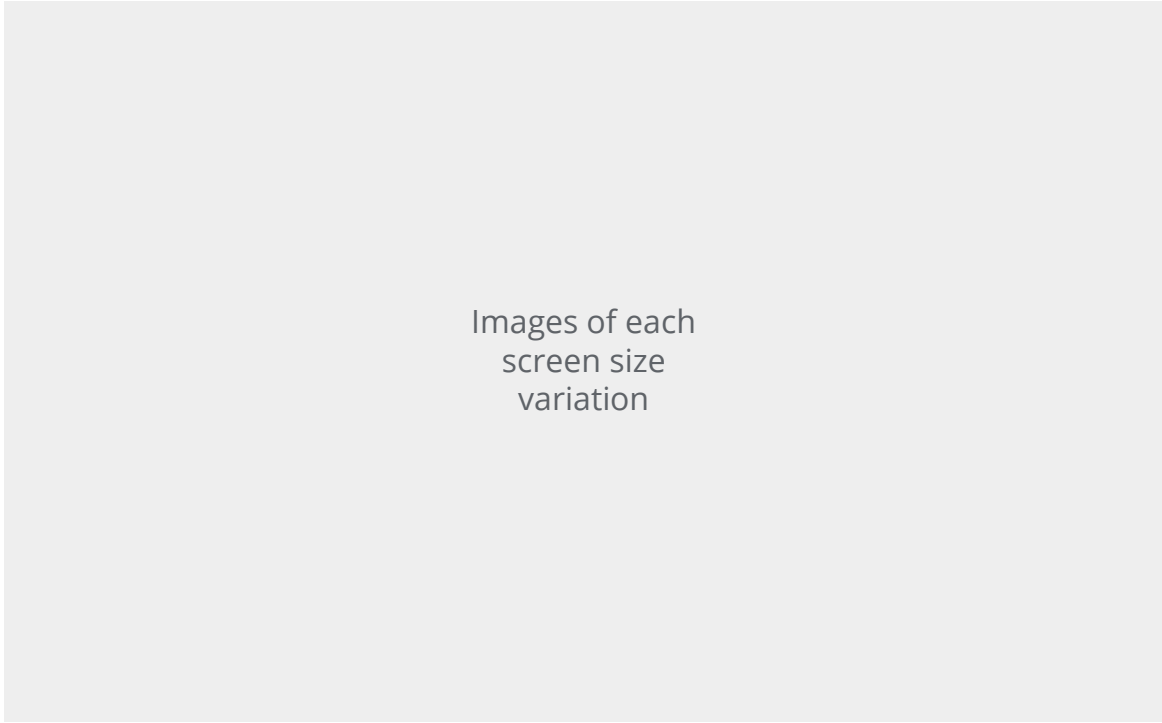
- Information architecture
- Responsive design

# Sitemap

The website initial layout



# Responsive designs



# Going forward

- Takeaways
- Next steps

# Takeaways

## Impact:

Smooth and good satisfaction from users

## What I learned:

Ability to make design changes to help users gives me a great satisfaction.

# Next steps

1

Refining the water pump data entries by ideate sessions with colleagues

2

Introduce the app ability to predict several pumps at one go

3

Would like to have language translation options for those who are not English fluent

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# Let’s connect!

Thank you very much for reviewing my work!

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