**Test Plan**

**Objectives of The UI Evaluation**

**Usability:**

* Ease of navigation between different screens.
* Clarity of the information displayed.
* Responsiveness of the app to user interaction.

**Functionality:**

* Accuracy of the login process.
* Correct display of air quality data.
* Proper functioning of the "View More/Less" feature for detailed air quality data.
* Effectiveness of the educational material in conveying information.
* User profile management, including main asthma trigger and asthma severity levels.
* Accuracy and update frequency of the location mapping for poor air quality areas.
* History page's data representation and time frame selection.
* Notifications: reliability, relevance, and clarity of air quality alerts.
* Settings: ability to manage device connection and notification preferences.

**Test Cases For the Screens Login Screen:**

* Attempt to login with correct and incorrect credentials.
* Check feedback for invalid login attempts.

**Home Screen:**

* Verify the air quality percentage updates in real-time.
* Check for the presence and accuracy of PM2.5, PM10, and VOC levels.
* Test "View More/Less" functionality for additional measurements.

**Education Page:**

* Assess the readability of the content explaining air quality measurements.
* Test any interactive elements like "Read more".

**Asthma Profile Page:**

* Test for the correct saving and updating of user's main triggers and asthma severity levels.

**Location Page:**

* Ensure the map loads correctly and displays historical bad air quality markers.
* Test the responsiveness of the map to user inputs, such as zooming and panning.

**History Page:**

* Verify that weekly air quality history is displayed and can be toggled between "This Week" and "Last Week."
* Check that the average scores and values are correctly calculated.

**Notifications Page:**

* Confirm that notifications are listed in chronological order.
* Test the display of the heading and message for accuracy and completeness.

**Settings Page:**

* Test the device management section for pairing and connectivity status.
* Toggle notification settings, specifically the sound option, and observe changes.
* Use the logout button and verify that it logs out the user correctly.

**Objectives for User Evaluation:**

* **Effectiveness:** How well does the app help users in monitoring air quality and managing asthma?
* **Efficiency:** How quickly can users perform tasks such as checking air quality history, viewing notifications, and updating their asthma profile?
* **Satisfaction:** How pleased are users with the app's features, design, and overall experience?
* **Learnability:** How easy is it for new users to understand how to use the app and navigate its features?
* **Memorability:** After using the app, how easily can users remember how to use it without assistance?
* **Error Frequency and Severity:** How often do users make errors, how severe are these errors, and how easily can they recover from them?

***User Evaluation Test Cases:***

**First Impressions:**

* Record initial reactions upon opening the app for the first time.
* Assess how the login and account setup processes are.

**Daily Usage:**

* Ask users to perform daily tasks such as checking air quality, updating profiles, and setting notification preferences.
* Observe and record any difficulties or errors encountered during these tasks.

**Notification Clarity:**

* Evaluate if the notifications provide clear, actionable information.
* Assess if users understand what to do when they receive a notification of poor air quality.

**Information Comprehension:**

* Test the users understanding of the education page.
* Users will be asked to explain what PM2.5 and PM10 to gauge the clarity of the information.

**User Feedback:**

* Conduct interviews to collect user feedback on various aspects of the app.

**Error Monitoring:**

* Record any errors users encounter and how they resolve them.

**Accessibility Check:**

* Ensure that users with different abilities can use the app comfortably.
* Check for font sizes, color contrasts.