

FUNCTIONAL REQUIREMENTS SPECIFICATION

DOCUMENT NUMBER: FRS-001

DATE ISSUED: 11/22/24

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1. Interface Requirements

1.1. Login screen

The main functionality of the login screen will securely log in users with their credentials or access account recovery options. This ensures secure access and a smooth start to the user's journey.

Interface Details:

- Field 1 accepts alphanumeric input for the username.
- Field 2 accepts alphanumeric input for email and only accepts when there is a valid email extension.
- Field 3 accepts passwords with masking.
- A submit button exists directly below field 1 and field 2 to execute login.
- A "Forgot Password" link navigates users to a recovery form.

1.2. Account creation page

The main functionality of the account creation page is to allow users to create accounts by entering personal details, including location and preferences. This facilitates onboarding while ensuring accurate data entry for personalization.

Interface Details:

- Field 1 accepts alphanumeric input for the username.
- Field 2 validates email addresses.
- Field 3 only accepts secure passwords that meet specified complexity requirements.

1.3. Main dashboard

The main functionality of the dashboard is to provide an overview of all gardens, recent notifications, and upcoming tasks. This Centralizes key data for quick access, fostering user engagement.

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Interface Details:

- Displays a list of gardens with progress bars indicating growth stages.
- Clicking on a garden opens its detailed view.

1.4. Notification page

The main functionality of the notification page is to display system-generated notifications for plant care and weather alerts. This helps users stay on top of critical tasks and adapt to environmental conditions.

Interface Details:

- Notifications are sortable by type (e.g., reminders, alerts).
- Users can mark notifications as they read or delete them.

1.5. Plant catalog page

The main functionality of the plant catalog page is to enable users to search for plants by name, category, or care needs. This provides comprehensive plant information for informed gardening decisions.

Interface Details:

- Search field accepts text input for keywords.
- Results display plant images, names, and summary details.
- Clicking on a result opens a detailed plant profile.

1.6. Plant selection page

The main functionality of the plant selection page is to allow users to add plants to their garden from the catalog or via custom entries. This simplifies plant addition while ensuring data integrity for tracking features.

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Interface Details:

- Search
 - Search field accepts text input for keywords.
 - Clicking on a result brings the selected plant to the garden plot space.
- Create custom plant entry:
 - Field 1 accepts alphanumeric input for the general plant type.
 - Field 2 accepts alphanumeric input for the plant variety.
 - Field 3 is a dropdown menu for soil type.
 - Field 4 is a dropdown menu for sunlight exposure.
 - Field 5 is a dropdown menu for water requirements.
 - Field 6 is a date field for planting date which accepts only past dates or current date.
 - The submit button brings the custom entry to the garden plot space.

1.7. Discussion board

The main functionality of the discussion board is to facilitate community interaction through posts, comments, and upvotes. This encourages knowledge sharing and community building among users.

Interface Details:

- Read / explore
 - Search field accepts text input for keywords.
 - Radio button exists on each post and comment to function as an upvote.
- Create post
 - Button 1 exists to create a post.
 - Text field 1 accepts alphanumeric input for post titles.
 - Text field 2 accepts alphanumeric input for post body with a character limit.
 - Button 2 is a submit button to publish the post.

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1.8. Settings and Profile page

The functionality of the settings/profile page is to enable users to manage their account, privacy preferences, and app settings. This ensures the platform is adaptable to individual user preferences.

Interface Details:

- Update profile
 - Field 1 accepts alphanumeric input for the username.
 - Field 2 accepts alphanumeric input for email and only accepts when there is a valid email extension.
 - Field 3 accepts passwords with masking (old password).
 - Field 4 accepts passwords with masking (new password).
 - Field 5 accepts 5-digit integer input of valid zip codes. (uncertain about what we decided as a group here)
 - Field 6 accepts 10-digit integer input for a phone number.
- Notification settings
 - Field 7 is a radio button to represent receiving watering reminders.
 - Field 8 is a time field to adjust the time that watering notifications are sent.
 - Field 9 is a radio button to represent receiving fertilizing reminders.
 - Field 10 is a radio button to represent receiving harvest reminders.
 - Field 11 is a radio button to represent receiving freeze notifications (only available if location is provided).
 - Field 12 is a radio button to represent receiving discussion board reply notifications.

2. Regulatory/Compliance Requirements

2.1. Industry Standards

Web Content Accessibility Guidelines (WCAG) 2.1: Accessibility for the disabled community, applies broadly across technology without legal threat.

- Warrants Inclusive design strategies during design and implementation broadly.

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2.2. Legalities

Children’s Online Privacy Act (COPPA): Applicable to applications used by children 13 years and under. Relevant to the collection of personal data i.e. location, name, email; permission is needed from a parent.

- In the sign-up view we may disallow account creation for those falling in the specified age range.

3. Security Requirements: User access

The U-Plant application allows two primary types of users to enter data into the system:

3.1. Registered Users

- Account Creation: Any individual who registers an account can enter personal and garden-related data.
- Personal Data Entry:
 - Garden Details: Enter information about their gardens, such as names, soil types, sunlight exposure, and layouts.
 - Plant Management: Add and update plants in their gardens, including species, growth stages, health status, and personal notes.
- Community Contributions:
 - Sharing Surplus: Post offers of surplus produce or gardening items with details like item names, quantities, availability, and photos.
 - Event Listings: Create and manage community events with titles, descriptions, dates, times, and locations.
 - Customization:
 - Preferences: Set personal preferences like location, units of measurement, and privacy settings to control information visibility.

3.2. Administrators

- System Management:
 - Content Updates: Add or modify system-wide data such as guides, notifications, and community guidelines.

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- Plant Catalog Maintenance: Update the plant catalog with new species and care instructions.
- Community Oversight:
 - Moderation: Monitor and manage community content to ensure responsible use.
 - User Support: Address user reports, manage inappropriate content, and enforce guidelines.
 - Technical Maintenance:
 - System Updates: Perform updates and maintenance to keep the platform secure and up-to-date.

4. Security Requirements: System data

The U-Plant system requires various data inputs to function effectively, categorized as follows:

4.1. User Data

- Account Information
 - Email/Username and Password: For user authentication and account access.
 - Profile Details: Optional information like profile pictures and bios.
- Preferences
 - Location: City or ZIP code for localized advice and community features.
 - Units of Measurement: Choice between metric and imperial units.
- Privacy Settings
 - Visibility Controls: Manage who can see personal information within the community.

4.2. Garden Data

- Garden Information
 - Garden Names: User-defined names for easy identification.
 - Soil Type and Sunlight: Details to aid in plant care recommendations.
- Garden Layout
 - Visual Maps: Representations of garden spaces.

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- Plant Placement: Positions of plants within the garden layout.

4.3. Plant Data

- Plant Information
 - Selection: Choose plants from a catalog or add custom entries.
 - Growth Tracking: Dates and stages of plant growth.
 - Health Status: Notes on plant condition.
 - Personal Notes: User observations or reminders.

4.4. Notification Data

- Care Reminders
 - Task Notifications: Alerts for watering, fertilizing, harvesting, etc.
- Weather Alerts
 - Environmental Notifications: Warnings about adverse weather conditions.
- Customization
 - Personalized Notifications: Based on user preferences and plant data.

4.5. Community Data

- Surplus Sharing
 - Posts: Listings offering surplus produce or items.
 - Details: Item names, quantities, availability, locations, and photos.
- Community Events:
 - Event Listings: Information about local gardening events.
 - Participation Indicators: Users can express interest or confirm attendance.
- Messaging:
 - Private Communication: Secure messages between users.

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5. Work Cited

Ofni Systems, “Functional Requirements.” [Link](#)

U-Plant Project Proposal

U-Plant User Requirements Specification Report

COPPA - Office of Public Affairs | Federal Trade Commission
Federal Trade Commission (.gov)
<https://www.ftc.gov/about-ftc/commissioners-staff>

WCAG - <https://www.w3.org/TR/WCAG21/>