Plant Care Manager

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Specification Document (Phase 1)

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1.1 Problem Summary

Plant enthusiasts find it challenging to take care of their plants. This can be attributed to the quantity of plants, which grows, as one continues their hobby of keeping plants. The quantity makes it challenging. Tasks, necessary for the maintenance of plants, are often forgotten or organized chaotically.

The purpose of the program is to assist the plant enthusiasts by providing a way of organizing/managing their tasks and plants. The program helps the organization by providing an interface in which the user can easily view, navigate and change the plant and task data stored. Plants and Tasks can also be labeled for them to be easily grouped. Tasks are a central part of the program as the user would most likely do them daily. The program will provide an interface to show tasks due soon and a listview to easily view all tasks. To help the user view their tasks better, they will have the ability to sort and to filter tasks by labels. Data from the program can also be transferred to pdf

1.2 Research

Many plant care apps in the market help their users take care of their plants. Planta is one of the most popular plant care apps. It has a paid and free version as many other similar plant care apps do. Planta provides an all-in-one app if you upgrade to premium. It can log plants, set up smart reminders which can tell the user when to water the plants based on the weather, check the right light intensity for a plant and create a plant journal. All other plant apps have their own unique advanced features. "Picture this" has an AI that helps your sick plants, "ThePlantMe" has a plant journal to keep track of a plants progress using pictures and a plant identifier. "Blossom" can help you explore and discover different plants. Gardenia is a free plant reminder app and provides gardening-oriented weather data. Almost all popular plant care apps have a knowledge bank to educate users on taking care of their plants (such as articles or guides).

1.2 Motivation

Many popular plant care apps have limited functionality or have to pay for full functionality on their reminders. Planta only provides watering reminders until your upgrade to premium. "PictureThis" doesn't have a reminder system. In contrast to other plant care apps, the program will not restrict access on its reminder/task system. In addition, the program doesn't need an internet connection. Many plant care apps don't support offline such as Planta and Gardenia. The program can support offline use and it has the core functionality of organizing plants and reminders. The program also has its unique feature of transferring tasks into a pdf file for download.

1.3 Specifications of Program Function

Home page
- When requested, shows a help pop-up window with relevant information that a user can refer to for help.
- Will show the details of tasks that are close to their due date
- When requested, transfers the user to the plant manager, tasks page or encrypted notes page.

Menus
Help menu
- Requests the help pop-up present on the home page
- Contact developer. Prompts a pop-up message in which the user can either copy the email address to write an email to the developer or copy the website(google forms) to write and send their message there.

Actions menu
- Download plant list. Shows a pop-up screen. The user would need to specify specific plants or all plants to be transferred to pdf.
- Download task and reminders list. Shows a pop-up screen. The user would need to specify specific tasks or all tasks to be transferred to pdf. The tasks will then have a special label attached "in pdf", indicating that they are transferred to pdf. The user would also need to specify where the pdf will be downloaded.
- Sync tasks. A pop-up screen displaying all "in pdf" tasks. The user can then have the option to "complete all" indicating to the program that all the tasks have been completed on paper and has to update them. The user can also specify individual tasks that have been completed on paper.
- Save Data. The program will proceed to save the data it has stored in a text file

Plant manager
- A User can add a plant they have and enter information about it. The user would need to enter the plant name to add a plant. Only the plant name is required.
- Changes information about a plant. The user can press the edit button to change the information about the plant. The user has the option to cancel or save the changes made.
- Deletes a plant. The user would need to specify which plant to delete. The user can do this by pressing the delete button next to the plant displayed.
- Display plant. Display all information about a specified plant

- Sorts the list of plants based on what the user has selected. "Alphabetically" or "Alphabetically by Labels"

Task List
- Adds a task. Relevant information would need to be entered by the user. The user would have to enter the "heading of the task"(required), due date(optional) labels(optional) and notes(optional).
- Changes information about a task. The user would need to specify what information to change and from which task. The user can do this by pressing the edit button next to an information piece.
- Deletes a Task. The user can do this by pressing the delete button next to the task displayed.
- Display task. Display all information about a specified task
- Complete task. The user can choose if the task is completed or not.
- Sorts the list of tasks based on what the user has selected. "Alphabetically" or "Alphabetically by Labels" or "Due Date"
- Filter tasks. The user can choose to filter by predefined labels: "high priority", "medium priority", "low priority" "in pdf".

Encrypted Notes
- The user would be able to view the headings of encrypted notes. The user won't be able to view the contents as they are encrypted with AES.
- Add Note. The user can add a note that would be encrypted with a default password.
- When the user wants to access a note, the user would need to enter the password specific to the note. The password(stored in the program) would be encrypted in AES. The program verifies if the password is correct and only allows the decryption process to commence if the password is correct.
- View the note. The note would be decrypted by the secret key(the password) and be displayed on the program.
- Lock the note. This will encrypt the note so that it can't be accessed.
- Delete Note. The user would have the option to delete the note if the note has been decrypted.
- Edit Note. The user would have the option to edit the note if the note has been decrypted. When the user presses save, the note will be encrypted again and saved in the program.
- Change Password. The user would have the option to change the password if the note has been decrypted. The user would have to type the new password. Once the user confirms the change, the note will be encrypted again with the new password.

1.4 Specification of Interface

The user interface used would be GUI.

Home screen
- Buttons to take you to manage your tasks or plants or encrypted notes
- A menu that expands, in which the user can select actions from.
- Block showing tasks that are due soon.
- Small help button

Task Screen
- A Scroll Pane to show a list of all tasks and Reminders (on the left)
- A Bigger Pane to show detailed information about task/reminder selected (on the right)
- A menu in which the user can select an action.
- A tabbed pane for navigation
- A sort area in which the user can choose options

Plants Manager Screen
- A Scroll Pane to show a list of all Plants (on the left).
- A Bigger Pane to show detailed information about a plant selected (on the right)
- A menu in which the user can select an action.
- A tabbed pane for navigation
- A sort area in which the user can choose options

Encrypted Notes Screen
- A Scroll Pane to show a list of all Notes
- An add Encrypted Note button
- A Bigger Pane to show the note details
- Buttons to edit, change password and delete note appear once the note has been decrypted.
- A tabbed pane for navigation

1.5 Specification of Help

A help button is available to the user that is present on the Home Screen. Pressing the help button would prompt a pop-up window. The pop-up window would contain information about common problems and solutions.

When an error has occurred the program prompts the user what the problem is and possible ways to fix it, if possible.

If a user can't solve their problems from the above help solutions, then the user can then contact the developer. The user can send their problem via email for the developer to see as an email will be provided. The user is also given a website(google forms) as an alternative way to write their message to be sent to the developer

1.6 Specification of Permanent Data Storage

The program's data would be stored in a text file.

Plant text file:
- **Plant Name** *(The plant's name)*
- **Notes** *(Text that the user wants to be saved with the plant)*
- **Label** *(Stores the label assigned to the plant)*

Task text file:
- **Heading Name** *(Heading of task)*
- **DoneOrNot** *(Stores if a task has been done or not)*
- **Due Date** *(Stores the due date of the task. Formatted [yyyy-mm-dd] - Optional if it is a task)*
- **Label** *(Stores the label assigned to the task)*
- **Extra Information** *(Text the the user wants to be saved with the task)*

Encrypted Notes File:
- Note Heading (Stores the heading of the note in plain text)
- Encrypted Content (Stores the content of the note encrypted in AES)
- Encrypted Password (Stores the password of the note encrypted in AES)

1.7 Hardware and Software Requirements

Developer requirements

Hardware
- CPU - Intel Core i3 or better CPU
- 4GB RAM or higher
- 20GB of storage available (HDD or SSD)

Software
- Windows 10 or higher
- Java 8 or higher
- Netbeans 12
- PDF Reader

User requirements

Hardware
- CPU - Intel Celeron or better CPU
- 2GB RAM or higher
- 2GB of storage available (HDD or SSD)

Software
- Windows 10 or higher
- Java 8 or higher
- PDF Reader

References

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