

Title: Project Proposal: PlantWise Co

**CEUB - FATECS Bachelor's Degree in Computer Science - BCC Final Course Work - FCW
Prof. Dr. Santana Preliminary System Description Home and Agricultural Cultivation
Manager**

Description of the Theme: This project entails the development of a programmable home cultivation manager designed to assist gardening enthusiasts and individuals interested in cultivating useful plants in their homes. It involves an electronic component that can be connected to various sensors and programmed according to each gardener's needs. Additionally, an accompanying application will provide information and resources for cultivating various edible and medicinal plants, enabling users to grow their own healthy foods and natural remedies at home. The system and its accompanying application are temporarily named PlantWise "Manager" to better elucidate the concept. The company plans to develop its own hardware component in the future.

Objectives and Expected Benefits of the Proposed Solution:

Objectives of the Proposed Solution:

- 1. Cultivation in Indoor and Unfavorable Environments:** The management system will be specifically designed to meet the needs of cultivation in indoor environments, such as apartments and houses without yards or gardens. It will provide detailed information on plants that adapt well to these conditions and offer solutions to optimize available space. The primary objective is to make domestic cultivation of plants useful for nutrition and health more accessible and easier for users. The system will provide detailed information and practical guidance so that even people without gardening experience can successfully cultivate their own plants at home.
- 2. Process Automation and Remote Monitoring:** The PlantWise "Manager" will include automation features to simplify domestic cultivation. Sensors and smart devices will be integrated into the solution to monitor the cultivation environment, including temperature, soil moisture, and light.
- 3. Integration of Artificial Intelligence and Machine Learning:** The solution, through an application, may also utilize artificial intelligence and machine learning in the future to provide personalized recommendations to users. Based on collected data, the application can offer precise guidance on specific care for each type of plant, adapting to individual cultivation needs.
- 4. Promoting Healthy Eating:** The solution aims to encourage healthier and more sustainable eating habits by allowing users to have control over the origin of the foods they consume. Growing vegetables and herbs at home contributes to a more balanced diet, free from pesticides and preservatives.
- 5. Encouraging the Use of Medicinal Plants:** The application can also highlight the medicinal potential of various plants, promoting the use of natural and herbal remedies. By growing medicinal plants at home, users can benefit from the therapeutic properties of these plants sustainably and affordably.
- 6. Reducing Environmental Impact:** By cultivating at home, users reduce dependence on industrialized food products, thus reducing the environmental footprint associated with large-scale production and transportation of food. This contributes to a more sustainable lifestyle.

Benefits for Future Customers and Users:

1. **Financial Savings:** Cultivating at home can help users save money as they won't need to purchase certain foods and medications. Additionally, by cultivating more efficiently, waste can be avoided.
2. **More Nutritious Foods:** Plants grown at home are usually fresher and more nutritious as they are harvested at the right ripeness. This ensures that users have access to foods with higher nutrient content.
3. **Health and Well-being:** Having medicinal plants available at home can provide health benefits and help treat common issues such as digestive disorders, stress, and respiratory problems.
4. **Gardening Experience:** The system provides an enriching gardening experience and connection with nature, which can reduce stress and promote emotional well-being.

Sales Strategies:

1. **Digital Marketing Campaigns:** Utilizing digital marketing strategies such as social media ads, blogs, influencers, and email campaigns to reach a broad audience interested in gardening, healthy eating, and natural medicine.
2. **Active Customer Support and Community:** Offering the best possible customer support, updating equipment functions, and encouraging the formation of an active online community of users to share their experiences, tips, and successes in home cultivation.

Interaction with Requirements Suppliers:

As an experienced cultivator, the Project Manager will be responsible for informing the business needs and system requirements. His experience in the field of home cultivation will be invaluable to ensure that the proposed management system meets user expectations and provides practical and efficient solutions for cultivating useful plants in domestic environments.

Similar Solutions:

At present, it is not commonly understood that similar solutions exist. Gardeners commonly use generic automations in their cultivation, often depending on their own interpretation for changing routines and also for triggering actions such as turning on lights, turning off the exhaust fan, or watering plants through a pump. Our application, integrated with sensors, can automatically water plants when their pots reach a certain level of moisture in a specific region, and this watering can be done according to various factors not only the one mentioned above, having several extension possibilities. While similar management systems are unknown, we will cite applications that have some user ratings and recommendations to understand what users value in such solutions and how they can be adapted to the context presented by our system:

Gardening and Horticulture Applications: Several applications provide information on plant cultivation, care tips, pest identification, growth tracking, and more. They can serve as inspiration for PlantWise "Manager" in terms of functionalities and usability.

Culinary Recipes and Nutrition Applications: Applications that offer healthy culinary recipes, emphasizing the use of herbs, vegetables, and fruits, can provide insights on integrating information about healthy eating into the "DomesticPlant."

Health and Wellness Applications: Applications that focus on medicinal plants and phytotherapy, providing information on health benefits and proper use, can inspire the section of PlantWise "Manager" dedicated to plants with medicinal properties.

Home Management and Automation Applications: Applications that allow the control of home systems, such as temperature, humidity, and lighting, can provide insights on how to integrate automation and monitoring features into PlantWise "Manager."

Gardening and Medicinal Plant Blogs: Researching specialized websites and blogs on gardening, horticulture, and the use of medicinal plants can offer inspiration for content and resources to be included in the PlantWise "Manager" application.

Market Analysis:

The growing concern about food quality, the search for healthier eating habits, and the interest in natural remedies have driven people's interest in cultivating their own plants at home. Additionally, awareness of environmental impacts and health risks associated with the overuse of industrial and chemical products has led people to seek more sustainable and natural alternatives.

This trend towards a healthier and more sustainable lifestyle creates a growing demand for solutions that facilitate domestic cultivation of useful plants, such as herbs, vegetables, and medicinal plants. In this sense, the PlantWise "Manager" application can meet this demand by providing a tool that empowers users to grow their own plants, providing fresher and healthier foods, as well as natural remedies, thereby contributing to well-being and health.

Furthermore, with the growing popularity of smart devices and home automation, integrating monitoring and automation technologies for plant care can attract a wider audience, including people looking for convenience and ease in home gardening.

Estimated Number of Potential Users:

The estimate of potential users will depend on various factors such as the availability of the application on different platforms (iOS, Android, web), the reach of promotion and marketing efforts, the target audience's interest in home gardening, and the use of plants for food and health, as well as competition in the market for similar applications. However, we already have a business model idea to be followed:

Products Offered:

1. Programmable Management Center