PROJECT PLANNING DOCUMENT

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Project title:

U.B.E.T (Understanding Botanical Essentials for Thriving)

Problem statement:

If people don't know how to properly take care of our floral environment, then these plants would soon die.

Project Objective:

Our program aims to help users care for their plants using information from the needs of different plant groups and the current environmental conditions that the plant is currently in. The main goals are for people to learn how to care for plants so they can use it as a hobby or for profit. Either way, we want our program to contribute to the environment.

Planned features:

- A library of plant groups and information about them
- It will give instructions on how to take care of the plant properly
- A menu that will show all of the different plant group

Planned inputs and outputs:

- Input: The program will ask the user for the group/category of plant, and the plant's environmental condition.
- Output: The program will give the user the information on how to take care of the plant.
- Output: The program will present a menu showing the different kinds of plants.

Example: User input: Angiosperms, dry, hot.

Output: Your plant is too dry! Angiosperms need moisture to survive. Apply moisture but not waterlogged soil.

Logic plan:

1. Menu
    - WELCOME TO U.B.E.T!
    - Option 1: View plant group library
    - Option 2: Identify plant needs
    - Option 3: Quit

2. Option 1: View plant group library
    - **ANGIOSPERMS** - Flowering plants are plants that bear flowers and fruits, and form the clade Angiospermae. General care for angiosperms includes: understanding their light needs (direct or indirect sunlight for photosynthesis), providing consistent moisture (but not waterlogged soil), and using suitable soil for their roots and necessary nutrients.

    - **BRYOPHYTA** - Division Bryophyta (Mosses) Moss growing in damp woodland soil.To care for them, keep their environment damp, provide bright, indirect light, and ensure they have nutrient-rich soil, such as peat.

    - **GYMNOSPERMS** -Like the flowering plants, gymnosperms are vascular and produce seeds and pollen rather than relying on spore dispersal. To care for them you need to provide full sun and well-draining soil with sufficient moisture. Although it can vary with different species, for example Ginkgo trees require ample water, while many conifers are adapted to poor, cold conditions. Maintenance primarily focuses on providing the right environmental conditions and avoiding issues like excessive moisture, which can lead to disease in the poorly drained soil many species prefer.

    - **PTERIDOPHYTES** - Pteridophytes have a well-differentiated plant body into root, stem and leaves. To care for them, place them in filtered light away from direct sun, keep the soil damp by watering when the top is dry, and increase humidity with a humidifier, misting, or a pebble tray. Use a fluffy, well-draining potting mix and pots with drainage, and fertilize lightly with a nitrogen-based fertilizer during the active growing season.

- **CYCADOPHYTA -** Cycadophyta (Cycads) A typical cycad. Cycads resemble short palm trees. They have thick, woody trunks and a crown of spiky evergreen leaves. To care for them you need to water them when the top two inches of soil are dry, but never allow the soil to dry out completely, and use a granular fertilizer containing nitrogen, phosphorus, and potassium with added magnesium during the growing season. Protect them from harsh, direct sun, especially the scorching afternoon sun, and look for pests like scale insects or mealybugs

- **HORSETAILS -** Horsetails are a group of around 40 fern-like plants that usually grow in damp areas.To care for horsetail, provide it with moist to wet, well-drained soil, a location in full sun to partial shade, and consistent moisture, ideally with a pot or root barrier to prevent invasiveness.

- **LIVERWORTS -** Liverworts prefer cool temperatures, low ultraviolet (UV) light radiation, high fertility and moist or damp substrate Liverworts prefer cool temperatures. They thrive in shaded, humid areas, need consistent moisture, and are best kept away from direct sunlight or drying winds.

- **TREES -** Trees grow in a wide range of climates and soils but generally prefer well-drained soil, regular watering when young, and full sun to partial shade. Pruning helps maintain shape and health, and mulching around the base conserves moisture and supports root growth**.**

3. Option 2:
    - Getting the plants category (get_category()): Identifies the users plant category so we can use it in get_care() and find the users plant needs.

    - Getting the plants environment (get_environment()): Identifies the user's plant environment so we can use it to get_care() and find what environment the plant resides in.

    - Getting the plant's needs (get_care()): If the user's variables do not match with the needs of the plant’s category, it will require the user to take the proper steps to balance and handle their botanical essentials accordingly.
4. Option 3:
    - Makes the variable program_on False, ending the menu loop

References:

The five basic groups of plants. (n.d.). Bulb.

https://www.bulbapp.com/u/the-five-basic-groups-of-plants

Bio Explorer. (2025, February 7). *Classification of plants | 4 main types of plants | BioExplorer*.

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