

## **COS214-Project**

### **Task 1- Practical 5**

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### **Functional Requirements**

Strategy – The system will use different plant care strategies based on the plant. e.g. Watering and Sunlight exposure

State- The system will have plants in different states e.g. Seed state, Sprouting state, Mature state, which alters how they are cared for.

Factory Method- Allows different factories or departments to make different types of plants.

Prototype- Allows us system to make multiple plants based on other plants.

Command- Allows plantCare e.g. Watering plants and Sunlight exposure, and selling plants to be encapsulated as objects to decouple these functions from invokers.

Composite- Allows for multiple plants to be grouped together e.g. Flower bundles.

Decorator- Allows for plants/plant groups to be given modifiers such as plant wrappings and decorative plant pots.

Mediator-Allows customers to communicate with a staff member in order to ask for information, request recommendations and to make orders. Also allows for staff-to-staff communication.

Observer- Notifies employees of changes in plant health/states and changes in inventory.

Chain of responsibility- Allows for different staff members/types to handle requests made by customers.

Singleton- Ensures there is only one inventory at any given moment to avoid inconsistencies.

Builder- Allows for construction of plant and flower packages and bundles.

Iterator- Allows system to iterate through plants.

## Non-Functional Requirements

Usability- System provides intuitive way for staff and customers to complete tasks e.g. Plant watering, Ordering, Notifications.

*Ensures users can interact efficiently with the system, leveraging Mediator and Command patterns*

Scalability-System can support at least 150 users at a time without performance degradation.

*Ensures Greenhouse and Sales subsystems can handle peak loads.*

Reliability- System will guarantee near 100% percent uptime and maintain data integrity in Inventory and Customer service subsystems.

*Vital for Inventory and Sales processes to prevent discrepancies.*