COS 214 FINAL PROJECT

Functional and non-functional requirements for a plant nursery:

Momina and Friends

Functional requirements:

**Decorator:**

Category: Structural

Function in our design: It attaches additional responsibilities to our Plant object dynamically providing a flexible alternative to subclassing for Extending functionality.

Features: PotDecorator has been implemented which adds a structural-based responsibility to our object and FertilizerDecorator has been added to provide behavioural-based responsibility to our object.

**Abstract Factory:**

Category: Creational

Function in our design: An interface for GreenHouse dependant objects such as the Plants as products and their different types are subclassed correspondingly.

Features: It ensures consistency with their corresponding characteristics as the different types of plants(Concrete Products) correspond to their Abstract products and Concrete Factories.

**Prototype:**

Category: Creational

Function in our design: It allows a Plant object to be replicated, thereby creating a prototypical instance so that when an object of the same attributes is required, it does not have to be created from scratch again.

Features: The clone() function allows duplicates of the Plant object to be created if needed for bulk orders.

**State:**

Category: Behavioural

Function in our design: First state manages the different stages of growth in a plant. Second manages the health states of the plant so that we can know if more care is needed and the third one manages the ordering process of the plant

Features: The different states correspond to different actions that need to be done which helps with the plant lifecycle management as well as payment management

**Iterator:**

Category: Behavioural

Function in our design: It allows us to collect and traverse the plants in our inventory without exposing its underlying representation or other details.

Features: PlantIterator iterates through the vector of Plant objects

**Singleton:**

Category: Creational

Function in our design:

Features:

**Strategy:**

Category: Behavioural

Function in our design:

Features:

**Memento:**

Category: Behavioural

Function in our design:

Features:

**Command:**

Category: Behavioural

Function in our design:

Features:

**Observer:**

Category: Behavioural

Function in our design:

Features:

**Mediator:**

Category: Behavioural

Function in our design:

Features:

**Composite:**

Category: Structural

Function in our design:

Features:

Non-functional requirements (at least 3):