BloomCart: An OOP-Based Java Project

Presented by

[Rishabh Singh]

[Ayush Dubey]

Course: [Btech CSE] / Semester[3rd]

Introducing BloomCart: Your Personal Florist

BloomCart is an intuitive, object-oriented Javaapplication designed to streamline the process of customising and ordering flower bouquets. It offers users a seamless experience from selection to order confirmation.

Key Objectives: Crafting a Robust System

OOP Implementation

DemonstratecoreObject-Oriented Programming principles effectively.

Custom Bouquet Creation

Enableuserstodesignuniquebouquets with various options.

Dynamic Price Calculation

Ensureaccurateandreal-timepricing based on customisations.

Efficient Order Management

Facilitatesmoothhandlingandprocessing of customer orders.

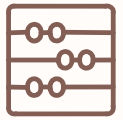
Core Features: Bringing Your Vision to Life

Browse Flowers

Exploreawidearray of fresh flowers.

Customise Bouquet

Selectflowers,wrapping, and add a personal message.



Auto Price Calculation

Getinstantpricingupdates for your customisations.

Order Summary

Reviewyourorderbefore finalising the purchase.

Customer Details

Securelyinputandmanage customer information.

Underlying Technologies: The Java Foundation

Java Core Language

- Robust andplatform-independent.
- Ensures scalability and maintainability.

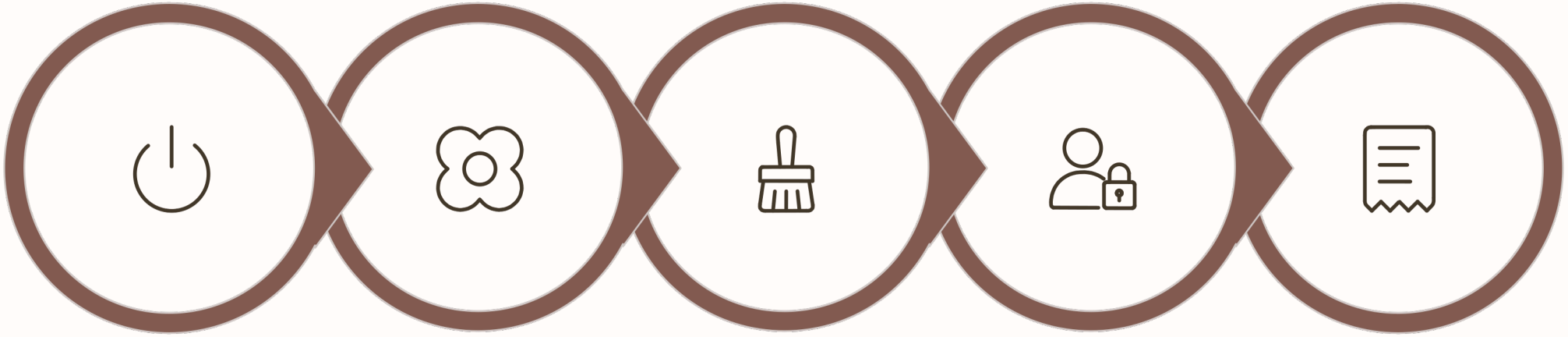
OOP Paradigms

- **Encapsulation:** Protecting internal states.
- **Inheritance:** Reusing code for hierarchies.
- **Polymorphism:** Flexible method behaviours.

Advanced Concepts

- Interfaces for abstract types.
- Exception handling for error resilience.
- Optional file handling for persistent data.

System Flow: A Seamless User Journey



Initiate **Select** **Customize** **Details** **Summary**

This diagram illustrates the intuitive step-by-step process a user follows within the BloomCart application, ensuring a smooth and logical flow from start to finish.

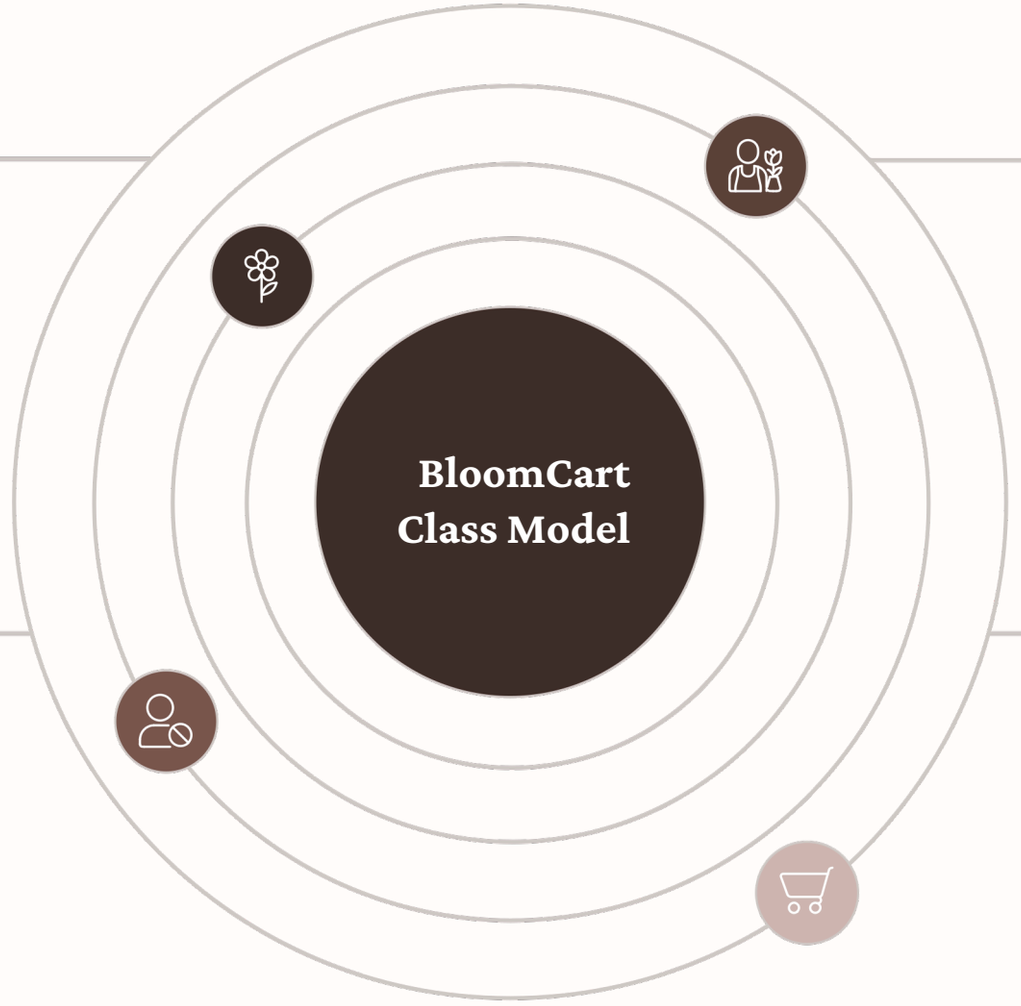
Class Design: The Blueprint of BloomCart

Flower

Represents individual flower attributes

Bouquet

Containsmultiple Flower instances



Customer

Customerdetails for orders

Order

Holdsone Customer and one Bouquet

The UML Class Diagram provides a visual representation of the core classes and their relationships, forming the architectural backbone of BloomCart.

Class Responsibilities: Defining Roles

1

Flower Class

Managesattributes like name, color, and individual price.

2

Bouquet Class

Holdsalist of chosen flowers, wrapping type, message, and calculates the total cost.

3

Customer Class

Storescustomer'sname, address, and contact information.

4

Order Class

Encapsulatesorder ID, associated customer, bouquet details, and delivery date.

5

BloomCartApp

Handles the main application logic, including menu display and user input.

Functional Flow: Step-by-Step Interaction

Show Menu

Presentoptions for flower selection and customisation.

Select Flowers

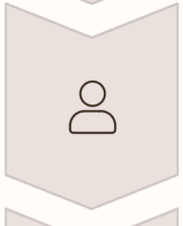
Userchoosesdesired flowers from the available catalogue.

Add Wrapping & Message

Personalisethebouquetwithwrapping paper and a custom note.

Price Calculated

Dynamiccalculation of the total bouquet cost.



Enter Customer Details

Inputessentialdeliveryandcontact information.

Display Summary

Reviewallorderdetails before final confirmation.

Error Handling & Validation: Building Resilience

Robust Input Validation

- **Invalid Input Prevention:** Ensures user inputs are always in the correct format and range, preventing unexpected application behaviour.
- **Empty Bouquet Prevention:** Prevents orders from being placed without any flowers, guiding users to create a complete bouquet.
- **Error-Safe Navigation:** Implements mechanisms to handle incorrect menu selections gracefully, maintaining application stability.

These measures contribute to a user-friendly and stable application experience, even when faced with unforeseen user actions.