CIS-18B

Decorator Pattern

Assignment Breakdown

Assignment Title: Decorator Pattern

Point Value: 20 points

Description: The Decorator Pattern is a pretty straight forward way of building on an object using composition. We see it every day, perhaps most commonly at point of sale systems. More abstractly, it’s great for adding and removing responsibilities at runtime (arguably a more complex use of the design pattern).

For this assignment, you’re going to demonstrate your knowledge of this design pattern by creating a basic system that allows you to manage the ordering of a pizza:

1. Create a text-based menu that gives you two options:
   1. Delivery (Add a 5 dollar delivery charge)
   2. Carry-Out
2. Next, ask the user to select a size:
   1. Small (10 dollars)
   2. Medium (14 dollars)
   3. Large (18 dollars)
   4. Extra Large (22 dollars)
3. Next, ask the user to select a type of crust:
   1. Thin Crust
   2. Thick Crust
   3. Stuffed Crust (4 dollars extra, not compatible with small sized pizzas)
4. Next, in a repeating menu, allow the user to select from a variety of toppings that you have elected to sell at your pizza shop (cheese, pepperoni, sausage, olives, etc.). Continue to loop this menu (charging any extra charges you deem appropriate) until the user elects stop adding toppings.
5. Generate a “receipt” with an itemized list of all pizza items, their corresponding cost, and a final total.

Goals: Remember to follow the Decorator Design Pattern. The Decorator Pattern uses a very particular approach to composing objects that may seem a bit strange at first. If you’re having trouble, follow along with the book’s example of a coffee shop and apply the concepts there to this assignment..

Submission: Please submit your assignment as series of individual .JAVA files, as well as a video file demonstrating your completion and walkthrough of the code.