Online Food Delivery System

In this problem, you need to design a food delivery system. It will handle both ordering and delivering food.

There would be a **Menu** class used to add, remove and update food items in the menu. Menu can be updated at any time for its price and description. While adding food items to the menu if any **FoodItem** is not in stock it would throw "**OutOfStockException.**" In case of updating, if the menu does not contain the **FoodItem** it would throw "**ItemNotFoundException**." Menu is to be created randomly.
Customers and **DeliveryPersonnel** have two common pieces of information- **name** and **contact information**. Customers can browse a menu and place orders for various quantities of available food items while reading their descriptions. While ordering, it would throw an "**InvalidOrderException**" if quantity is negative for a food item. The code should use proper error handling. In case of canceling an order for a food item that was never ordered or throwing "**ItemNotFoundException**" if the ordered food is not in the menu. Once a food item is added to order, the order will have a status such as pending, updated, canceled,confirmed or delivered and a total cost. The order can be updated several times or canceled before the order is confirmed. After confirmation, the order cannot be updated or canceled .
One delivery personnel will handle multiple deliveries once at least one order is confirmed and keep track of the states of their deliveries. Threading is to be used to handle multiple orders and deliveries to make things faster and more efficient. The OrderThread should randomly create the orders. There would be 20 orders and a delivery personnel can handle at most 5 deliveries at a time.

Make sure to avoid data inconsistency for shared resources.Use proper error handling to Tackle any inconsistency. Integrate object-oriented design principle (abstraction, encapsulation, inheritance, polymorphism) in solution.