Weijia Zhao: CS 6310 Spring 2023 Assignment 1

Q1: How does your design address the need to ensure that drones can lift/carry a new order line?

I include a method called “calRemainingCapacity()” in class “Drone”. It will return the remaining capacity of the drone by calling “calTotalWeight()” inside, which in turn calculates the total weights this drone is carrying now by summing up the weights of each order. When a customer try to add a new order line by calling the “addLine2Order()” function, the system will check the weight of this new order line and compare it with the remaining capacity of the drone that is assigned to carry this order. When the weight of the new line is greater than the remaining capacity, the addition fails and return False. Otherwise the new line is added and return True.

Q2: How does your design address the need to ensure that a customer can afford a new order line?

I include a function “calTotalCost()” in the class “Order” to calculate the total cost of all current order lines in this order by calling “calLineCost”, which return a hash map for each item and its total cost (i.e. unit cost multiply quantity). In addition, the class “Customer” has an attribute “credit” and when customer try to add a new order line by calling the “addLine2Order()”, the system will compare the new/updated total cost of the order with credit available to this customer. If the cost is greater, then adding this new order line is forbidden and the adding operation fails by returning False. Otherwise the addition of a new order line is processed.

Q3: How does your design address the need to display the incoming revenue for each store?

I include an attribute “status” in class “Order”. I will just first filter through all orders to select the orders that come from this store and the status is pending. Then for each such order, I call the “calTotalCost()” method to calculate the incoming revenue from this order. I then sum over all incoming revenues to get the total incoming revenue.