1. Let's assume we want to design a Logistics System with following basic functionality:

   • The system can take an order to deliver it to a given destination.

   • The order will be a list of items and there is a cost of each order to process.

   • User has to register himself / herself to use this system.

   • User can track his / her order.

   • Orders will be shipped by bike or truck, but only a single order will be shipped by a single vehicle.

   - The User class is for users/clients/customers, who will be charged to get their items delivered.

   The main classes will be and suggested attributes:

   1. **User** (ID, name, address, MobNo, EmailID)

   2. **Item**: (price, volume , weight)

   3. **Vehicle**: The Vehicle class represents the vehicle which will be used to ship/deliver an order. It will be of two types: 1. Bike and 2. Truck. The bike has only 10 unit of capacity. The truck has only 100 unit of capacity. suggested attributes : (id , vehicleNo , capacity , current_position , current_status[Free,busy,Not_working])

   4. **Location**: Longtide , latitude

   5. **payment details:** (payment_method [Net_banking,Credit_card, Debit_card] , tansitionId, amount, payment_status [paid,unpaid] , cardNumber)

   6. **Order:** (id,order_priorty[Low, Medium, high] ,sender, location, payment_detailes, items_list,total_weight, orders_status[Delivered ,processing, Canceled] , order_place_time , order_delivery_time , vehicle)

   7. **LogisticsSystem(main)** : has methods as

      a. take_an_order().
      b. Take_orders()
      c. Process_an_order().
      d. Track_order()
      e. Cancel_order()
      f. Register_new_user()

   The User class is for users/clients/customers, who will be charged to get their items delivered.

2. Which design pattern do you think is the best for this system, and why?
3. Write python code and documentation.
4. Write needed python code to demonstrate this system!