Java & DSA - ASSIGNMENT - DAY 20

Please practice the following activities

1. Implement HAS-A Relationship between the given classes
   a. Restaurant
   b. Menu
   c. Dish
   1 Restaurant as 1 Menu
   1 Menu has many Dishes
   You can use ArrayList or LinkedList to implement 1 to many relationship

2. Create a Singleton Design Pattern using below given classes.
   a. Restaurant
   b. RestaurantManager (To be Implemented as Singleton)
   c. Any new restaurant would be added, or the existing list of restaurants will be fetched using functions of RestaurantManager Singleton Class.
      i. addRestaurant(Restaurant restaurant)
      ii. getNearByRestaurants()
   Assume RestaurantManager shares HAS-A Relationship with Restaurant

3. Implement a factory design pattern, for various payment methods available on an eCommerce store. Consider below classes
   a. Payment
   b. Card
   c. NetBanking
   d. UPI
   e. PaymentFactory

   Here PaymentFactory is a factory class which can further return any type of Plan

4. Implement a factory design pattern to recharge a mobile connection online. Consider below classes
   a. Plan
   b. Plan3G
   c. Plan4G
   d. Plan5G
   e. PlanFactory

   Here PlanFactory is a factory class which can further return any type of Plan

5. Implement Abstract Factory Design Pattern for Products in an eCommerce Store. Consider below classes
   a. ProductFactory
   b. MobileFactory
   c. TVFactory

   Here ProductFactory is an abstract factory which can further return MobileFactory or TVFactory