

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 relationships

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