

## **Problem Statement 2 : Implement inventory management system**

You need to implement an inventory management system for an ecommerce store. An inventory management system allows administrators to add products to inventory , remove products from inventory.

The discount coupon should be a separate data structure that includes:

Discount Percentage (%): The percentage discount to be applied.

Maximum Discount Cap: The maximum amount that can be discounted from the cart.

**Example:** A 20% coupon with a maximum discount of 150 Rs on the cart value.

**Note:** You should use internal data structures for this implementation, without relying on any external database or service.

You need to implement following API:

(1) AddItemToInventory(productId,quantity) : This API will be used to add an item to the inventory

(2) RemoveItemFromInventory(productId,quantity) : This API will be used to remove an item from inventory

(3) AddItemToCart(customerId,productId,quantity) : This API will be used by customers to buy items and add the items to the shopping cart. This API will check if item is present in inventory or not

(4) ApplyDiscountCoupon(cartValue,discountId): This API will be used to calculate the Discounted price of overall cart value.

Please write a driver function to demonstrate the flow of the application and maintain a ReadMe doc for a brief overview of implementation. Bonus points for covering edge cases.