

JS Advanced Exam Retake – 02 Aug 2023

Problem 2. Inventory Management

```
class InventoryManager {  
  //TODO Implement this class  
}
```

Write a class **InventoryManager**, which implements the following functionality:

Functionality

Constructor

Should have these **3** properties:

- **capacity** – Number
- **items** – Array (empty)
- **outOfStock** – Array (empty)

At the initialization of the **InventoryManager** class, the **constructor** accepts the **capacity**.

addItem(itemName, quantity)

- This method should allow adding items to the inventory. It accepts two parameters: **itemName** (string) and **quantity** (number).
- If the quantity is **less than** or **equal** to 0, **throw an error** with the message:
 "Quantity must be greater than zero."
- If the inventory is already full (reached the **capacity**), **throw an error** with the message:
 "The inventory is already full."
- If the item already exists in the inventory, increase the **quantity** of the existing item by the specified quantity. Otherwise, add a new item with the **itemName** and **quantity** to the items array.
- **Return** a string message in the format:
 "Added {quantity} {itemName}(s) to the inventory."

sellItem(itemName, quantity)

- This method should allow selling items from the inventory. It accepts two parameters: **itemName** (string) and **quantity** (number).
- If the **quantity** is **less than** or **equal** to 0, **throw an error** with the message:
 "Quantity must be greater than zero."
- If the item does not exist in the inventory, **throw an error** with the message:
 "The item {itemName} is not available in the inventory."

- If the **quantity** requested is **greater** than the available **quantity** of the item in the inventory, **throw an error** with the message:

"Not enough {itemName}(s) in stock."

- **Decrease** the **quantity** of the item in the inventory by the specified **quantity**.
- If the **quantity** of the item becomes 0 after selling, remove the item from the items array and add the **itemName** to the **outOfStock** array.
- **Return** a string message in the format:
"Sold {quantity} {itemName}(s) from the inventory."

restockItem(itemName, quantity)

- This method should allow restocking items in the inventory. It accepts two parameters: **itemName** (string) and **quantity** (number).
- If the **quantity** is **less** than or **equal** to 0, **throw an error** with the message:
"Quantity must be greater than zero."
- If the item already **exists** in the inventory, **increase** the **quantity** of the existing item by the specified **quantity**. Otherwise, add a new item with the **itemName** and **quantity** to the items array.
- If the item exists in the **outOfStock** array, remove it from the **outOfStock** array.
- **Return** a string message in the format:

"Restocked {quantity} {itemName}(s) in the inventory."

getInventorySummary()

- This method should **return** a summary of the current inventory.
- The summary should be a **string** with the following format:
- On the first line:

"Current Inventory:"

- For each item in the items array, **add** a line in the format:

"{itemName}: {quantity}"

- If there are items in the **outOfStock** array, add a line in the format:

"Out of Stock: {itemName1}, {itemName2}" (comma-separated list of item names)

Examples

Input 1

```
const manager = new InventoryManager(2);

console.log(manager.addItem("Drill", 10));
console.log(manager.addItem("Hammer", 5));
console.log(manager.addItem("Level", 3));
```

Output 1

Added 10 Drill(s) to the inventory.
Added 5 Hammer(s) to the inventory.
Uncaught Error Error: The inventory is already full.

Input 2

```
const manager = new InventoryManager(3);

console.log(manager.addItem("Drill", 10));
console.log(manager.addItem("Hammer", 5));
console.log(manager.addItem("Chisel", 3));
console.log(manager.sellItem("Drill", 3));
console.log(manager.sellItem("Paintbrush", 2));
```

Output 2

Added 10 Drill(s) to the inventory.
Added 5 Hammer(s) to the inventory.
Added 3 Chisel(s) to the inventory.
Sold 3 Drill(s) from the inventory.
Uncaught Error Error: The item Paintbrush is not available in the inventory.

```
const manager = new InventoryManager(3);

console.log(manager.addItem("Drill", 10));
console.log(manager.addItem("Hammer", 5));
console.log(manager.addItem("Chisel", 3));
console.log(manager.sellItem("Drill", 3));
console.log(manager.restockItem("Drill", 5));
console.log(manager.restockItem("Paintbrush", 1));
```

Output 3

```
Added 10 Drill(s) to the inventory.
Added 5 Hammer(s) to the inventory.
Added 3 Chisel(s) to the inventory.
Sold 3 Drill(s) from the inventory.
Restocked 5 Drill(s) in the inventory.
Restocked 1 Paintbrush(s) in the inventory.
```

Input 4

```
const manager = new InventoryManager(3);

console.log(manager.addItem("Drill", 10));
console.log(manager.addItem("Hammer", 5));
console.log(manager.addItem("Chisel", 3));
console.log(manager.sellItem("Drill", 3));
console.log(manager.sellItem("Hammer", 5));
console.log(manager.restockItem("Drill", 5));
console.log(manager.restockItem("Paintbrush", 1));
console.log(manager.getInventorySummary());
```

Output 4

Added 10 Drill(s) to the inventory.
Added 5 Hammer(s) to the inventory.
Added 3 Chisel(s) to the inventory.
Sold 3 Drill(s) from the inventory.
Sold 5 Hammer(s) from the inventory.
Restocked 5 Drill(s) in the inventory.
Restocked 1 Paintbrush(s) in the inventory.
Current Inventory:
Drill: 12
Chisel: 3
Paintbrush: 1
Out of Stock: Hammer