**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:
  + - 1. **"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

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| **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)); |

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| **Output 1** |
| Added 10 Drill(s) to the inventory.  Added 5 Hammer(s) to the inventory.  Uncaught Error Error: The inventory is already full. |

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| **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)); |

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| **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. |

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| 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)); |

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| **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. |

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| **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()); |

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| **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 |