Week 2 – inventory management System

A company's current inventory management system is manual and time-consuming. It cannot dynamically adjust inventory levels, causing overstocking of slow-moving items and frequent stockouts of high-demand products. The inventory problems have decreased customer satisfaction, lost sales, and increased carrying costs.

**Question 1: Describe three ways JavaScript arrays and their**[**manipulation methodsLinks to an external site.**](https://www.learn-js.org/en/Manipulating_Arrays)**could contribute to solving the company's inventory management challenges. Your answers should not include code but describe how JS methods or syntax could implement inventory management functions. Here's a short list of typical inventory management features:**

* Product List
* Stock Replenishment
* Managing new and discontinued products
* See [Inventory management softwareLinks to an external site.](https://en.wikipedia.org/wiki/Inventory_management_software) for more features...

**Question 2: Using the Internet resources, describe [Node.Links to an external site.](https://nodejs.org/en/about" \t "_blank)js and [NPMLinks to an external site.](https://www.npmjs.com/" \t "_blank) in your own words (consider reading the**[**NPM documentationLinks to an external site.**](https://docs.npmjs.com/)**page). Then, search the web for popular NPM packages, provide the name, link, and a 1-2 sentence description of two NPM packages that might help build the company's inventory management system issues. Read the package description (some are significantly better than others) and list what each package's contribution might be.**COMPLETE BY 9/5/23 @ 11:59 am EDT

Reply to at least two classmates.

Question 1:

This company have some major issues such as complicated manual management, time- consuming issue, hard to adjust inventory level. Based on this problem, using the JavaScript could be easy to manipulate these issues by using the arrays. The first issue is how to record the new product. We could have one array holding the main products we have, and each product will have the properties such as quantity, name, quality, etc. We can use Queue or Stack algorithm to insert the new product at the front of the array by using unshift method or push method. The second problem is how to take the sold- out product off the list. Inside the array, we can use splice to split the array such that we can make those sold- out products not in the list. We can store those spliced products and put them into the new array called overstock so that maybe in the future we want to check which product is needed for stock replenishment. In specifically to the stock replenishment, we can set up the warning method when such product is reaching a minimum of quantity, and it can warn the company to stock up the products.

Question 2:

Node.js is a toolbox that an asynchronous event- driven JavaScript runtime and it can do a lot of works such as networking and utilizing the JS to tell node.js what to do. And it could also handle many requests at a same time, no need to wait. NPM is a company that was owned by GitHub in 2020, and it is the package manager for Node.js. Having lots of open-source project to help JS developers easily to share packaged modules of code, and allow the developers to install and publish their packages. Some of the popular packages:

1. Async: <https://www.npmjs.com/package/async>. This package is for working with asynchronous JavaScript and designed for Node.js, it can be directly in the browser system. The reason why Async package is good for inventory management system is because it has around 70 functions, included map, reduce, filter, each, etc. By utilizing the filter function, we can filter out the product catalogs and easy to manipulate the products that we want to sale or checking the trending products by seasons.
2. Lodash: <https://www.npmjs.com/package/lodash> The Lodash package can be useful to make less hassle on working with arrays, numbers, objects, strings, etc. And makes the code easier to manipulated. In the back- end of inventory management system, we are always dealing with arrays, functions, strings, and numbers. It simplifies working with objects, and allowing to clone the objects, merging them into one piece which will be helpful for the inventory management system.