Store Management Application (Basic Notes):

Problem Statement
Currently, the process of opening new stores and managing their inventory is manual and time-consuming. This results in inefficiencies, inaccuracies, and delays in store operations. To address these challenges, we propose the development of a comprehensive store management application.

The proposed Store Management Application will provide the following key features:
1. Store Creation and Search
2. Item Creation and Search
3. Add Items to Stores
4. Purchase Order Management

- ***definitely will need to use constructors, array lists multiple versions of switch statements as well as if…else loops for the project along general Java programming information to make this program be functional on the front end; also HashMaps could be helpful with this project as well***

- ***LOTS of testing will have to be done with this program not just for basic program functionality but to see if we're covering as much as possible in the project description***
- ***Check out Hashing and HashMaps in Java for this project: https://www.geeksforgeeks.org/hashing-in-java/***

- ***Future improvements that an be made for this project in the future by myself and other possible students:***

    - ***using either APIs and/or SQL databases for store item information and addition in the future***
    - ***adding in a graphical interface (GUI) to pull up information in a more user-friendly format***
    - ***starting off creating a basic, functional program BEFORE trying to add in APIs, etc.; not doing so was not the best use of time before the deadline for this version of the project (got a bit TOO into testing that side of the fence than actually crafting the project backend at the beginning)***
    - ***having more levels of user role access***
    - ***being able to have all user menus go back to the main menu before exiting the program completely, if necessary***
    - ***integration of this program into Microsoft Azure***

Product Requirements
This Product Requirement outlines the detailed specifications and features for the development of the Store Management Application, as requested by the VP of Stores. The objective of this

application is to streamline the process of opening new stores, managing inventory, and optimizing store operations.

First Part of Program:

For now, let's say the users logged into the system via an outside source and then they are going to go in and select their role as store admin, store manager or store staff post-greeting prompt (step #1)

1. User Roles - can select by listing as options via maybe char selection and then move onto the next step of the program
    1. Store Admin
        Can create, update, and delete stores.
        Manages user access and roles.
        Manages item categories.
        Generates purchase orders.

    2. Store Manager
        Can add items to the store's inventory.
        Monitors store inventory levels.
        Generates purchase orders for the store.
    3. Store Staff
        Can view store inventory.
        Can request item additions.
        Can update item quantities (e.g., sales).

2. Store Management - role 1 can only do this part with actually creating stores
    2.1 Store Creation - with the first version of the program, can this be done via a constantly updated array list option so that the created stores can ALSO be accessed via the store search?
        Admin can create a new store with the following details:
        Store name
        Location
        Contact information.
        Store type (e.g., retail, warehouse)
        Opening date

    2.2 Store Search - need not just these search terms but a default statement that says something along the lines of "store does not exist/not found" should be in the mix
        Users can search for stores based on:
        Location - string
        Store type - char
        Opening date - date

Store name - string

3. Item Management

3.1 Item Creation - can done by role 1; can this be done via a constantly updated array or table option so that the created stores can ALSO be accessed via the store search?; need to create categories as below; THIS PART IS PROBABLY GOING TO BE THE MOST DIFFICULT TO ACCOMPLISH

Admin can create and manage items with the following details:
Item name - string
Description - string
Category - string OR char (by making a list of categories and then using the char as a selection)
Price - double
Initial quantity - int

3.2 Item Search - can be done by role 2 & 3; need to create categories as below

Users can search for items based on:
Item name - string
Category - string OR char (by making a list of categories and then using the char as a selection)
Price range - double OR char (by making a list of categories and then using the char as a selection)

4. Inventory Management

4.1 Add Items to Stores - this is for user 2

Store managers can add items to the inventory of specific stores.
Input:
Store selection - char
Item selection - maybe pull up from
Quantity - int

4.2 Real-time Inventory Tracking - need a command to pull up & print out a store's inventory

The application will maintain real-time inventory levels for each store.
Notify store managers when stock reaches predefined thresholds.

5. Purchase Order Management

5.1 Purchase Order Creation - this is for user 1 & 2

Admin and store managers can create purchase orders.
Input:
Store selection

Item selection
Quantity
Automatically populate supplier details based on item category.
Generate a unique purchase order number.

5.2 Purchase Order Display - this is for user 1

Display purchase orders with the following details:
Purchase order number
Item list and quantities
Supplier details
Order status (e.g., pending, approved, delivered)

Conclusion

This PRD serves as a detailed blueprint for the development of the Store Management Application. It outlines the features, user roles, security measures, and other essential aspects required to meet the VP of Stores' objectives of streamlining store management and improving operational efficiency. The successful implementation of this application will lead to enhanced store operations and data-driven decision-making.

Additional credit:
Use open API for API documentation.
Create a GUI front end (web or client). Instead of interfacing with your application via the Postman, you will instead create a front end to access your application. If you do decide to go this route, we will use the GUI to test your functions.

API Information For the future to build upon this program for one's GitHub:

- due to possibly using an API for the data entry info, think about WHAT kind of store one will be managing for the data portion of the project (might make things a bit easier to manage as time goes by); also a nice amount of free APIs are out there
- maybe use MySQL, Zamp and PostMan for a database for the project
- USE POSTMAN TO TEST APIS - https://www.postman.com/
- POSTMAN LIST OF PUBLIC APIS: https://www.postman.com/explore
- maybe also see if one can find an example API to use for grocery store inventory information
- possible good API to use as a simple item request function as a part of the ordering program: https://github.com/vdespa/Postman-Complete-Guide-API-Testing/blob/main/simple-grocery-store-api.md
- another possible good API resource for the project: https://www.mealme.ai/data
- another possible good one - https://spoonacular.com/food-api/pricing

- since it does NOT need to be a grocery store…maybe this API: https://untappd.com/api/docs?ref=apilist.fun
- https://www.thecocktaildb.com/api.php?ref=apilist.fun
- Discogs API - https://www.discogs.com/developers
- List of some free APIs - https://dev.to/ruppysuppy/7-free-public-apis-you-will-love-as-a-developer-166p
- More free APIs - https://free-apis.github.io/#/
- Simple Grocery Store API - https://www.postman.com/dark-meadow-950355/workspace/postman-valentin/collection/15905165-36ff111b-0c7e-4a33-8300-109c10fe8e03
- Edamam API: https://developer.edamam.com/food-database-api
- Krogers has free API access: https://developer.kroger.com/
- even more free APIs: https://rapidapi.com/collection/list-of-free-apis
- have to make sure to import the right packages into the Java program as a whole beyond scanner, etc., especially for using APIs (ex. https://scand.com/company/blog/how-to-use-api-with-java/)