**Exercise 1: Inventory Management System**

**Scenario:**

**You are developing an inventory management system for a warehouse. Efficient data storage and retrieval are crucial.**

Steps:

1. Understand the Problem:

o Explain why data structures and algorithms are essential in handling large inventories.

-> Efficient data structures like hash maps allow quick access to inventory items. This is essential for operations like checking stock levels or locating specific products.Efficient algorithms make optimal use of computational resources, which is crucial for large- scale systems where resource constraints can be a limiting factor. A good Data structure is the backbone of any code and helps in all its aspects.

o Discuss the types of data structures suitable for this problem.

-> The most efficient data stricture suitable for this problem is HashMap. The quick retrieving and updation of data can only be done by declaring a ID of the product and storing it into hashmaps.