**Understand the Problem**

**Why Data Structures and Algorithms Are Essential in Handling Large Inventories:**

Efficient inventory management requires fast and reliable **data storage, access, and updates**. When the number of products grows into the thousands or millions, poor choices in data structures and algorithms can cause:

1. **low performance**
2. **High memory usage**
3. **Data inconsistency or duplication**

Well-designed **data structures** and **algorithms** ensure:

1. **Fast lookups** to find products by ID or name.
2. **Quick updates** to stock levels, prices, etc.
3. **Efficient deletions** of discontinued products.
4. **Scalability** for large product volumes.
5. **Better organization**

**Suitable Data Structures for Inventory Management:**

1. HashMap
2. ArrayList
3. TreeMap
4. LinkedList
5. Heap
6. Set
7. PriorityQueue