

# Develop a Demand and Supply algorithm



## Problem Statement

In a Production-Distribution Supply Chain, Storage and Transportation Capacities are mutually conflicting constructs.

If we want to utilize the Transport Capacity to the best possible, you need more storage, and if we want to reduce Storage Capacity, we need to use transport sub-optimally.

The problem is to get the best possible production plan so that Storage Capacity is not violated and achieving a near optimal transport capacity.



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## Proposed solution format | Expected Output

- Sample demand based on a probability distribution and supply based on constant capacity from the factory can be considered.
- Develop an algorithm to match the demand and supply in a way that utilizes both transport and storage in a near optimal way.
- The approach could be a heuristic solve or ML techniques using any commonly used technology like Python or Java.

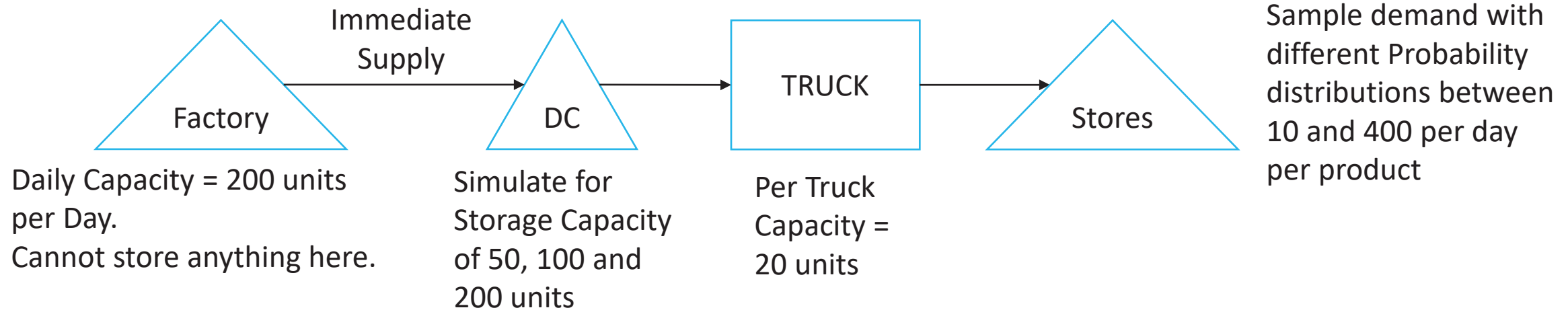
**Note:** You can mention technology to be utilized to solve this problem statement as well.



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## Planning Horizon: 3 Months | Supply Chain Example



### Problem:

- Develop an algorithm to compute the minimum number of Trucks needed to satisfy the maximum demand given the Capacity and Storage Constraints.

**Note:** Depending on the demand variability, you would need to store stock at DC by building ahead of time at the factory. On the other hand, you need trucking capacity to move the Stock to the Stores in case it exceeds Storage capacity at DC.

