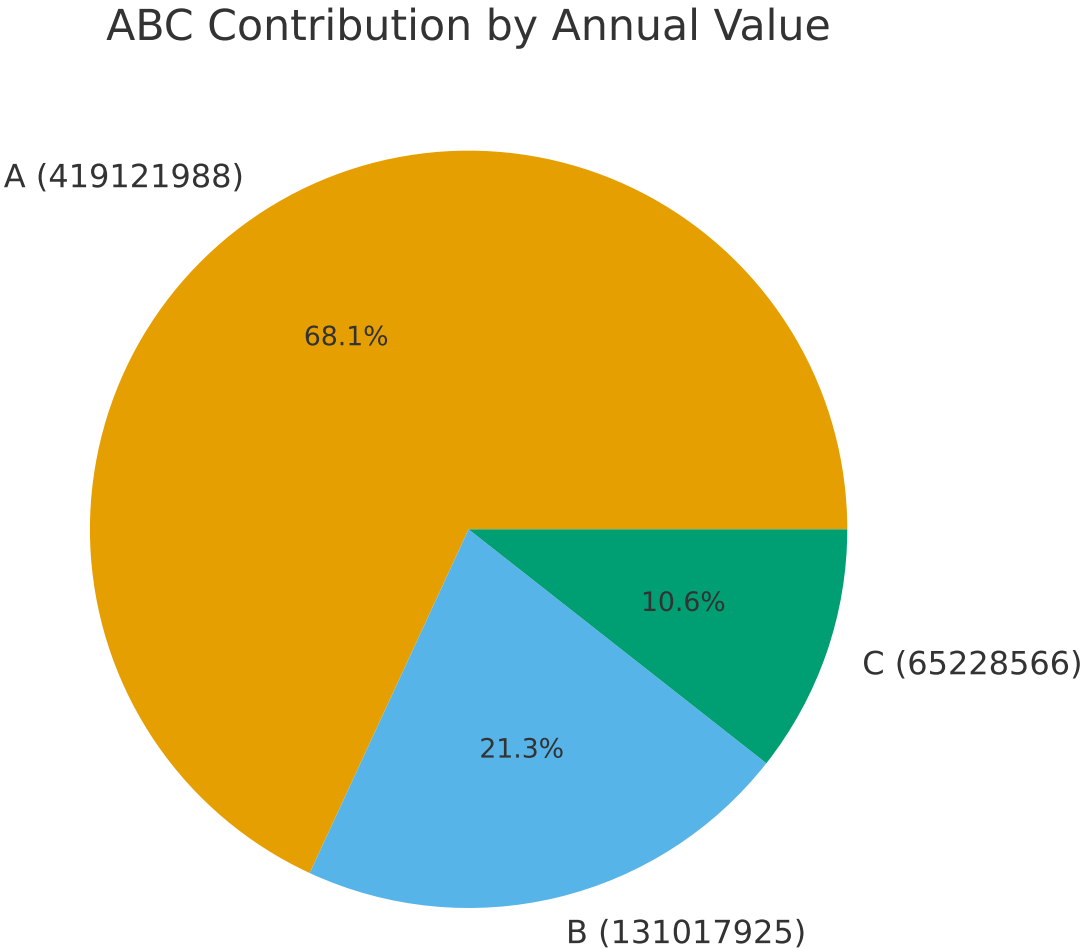
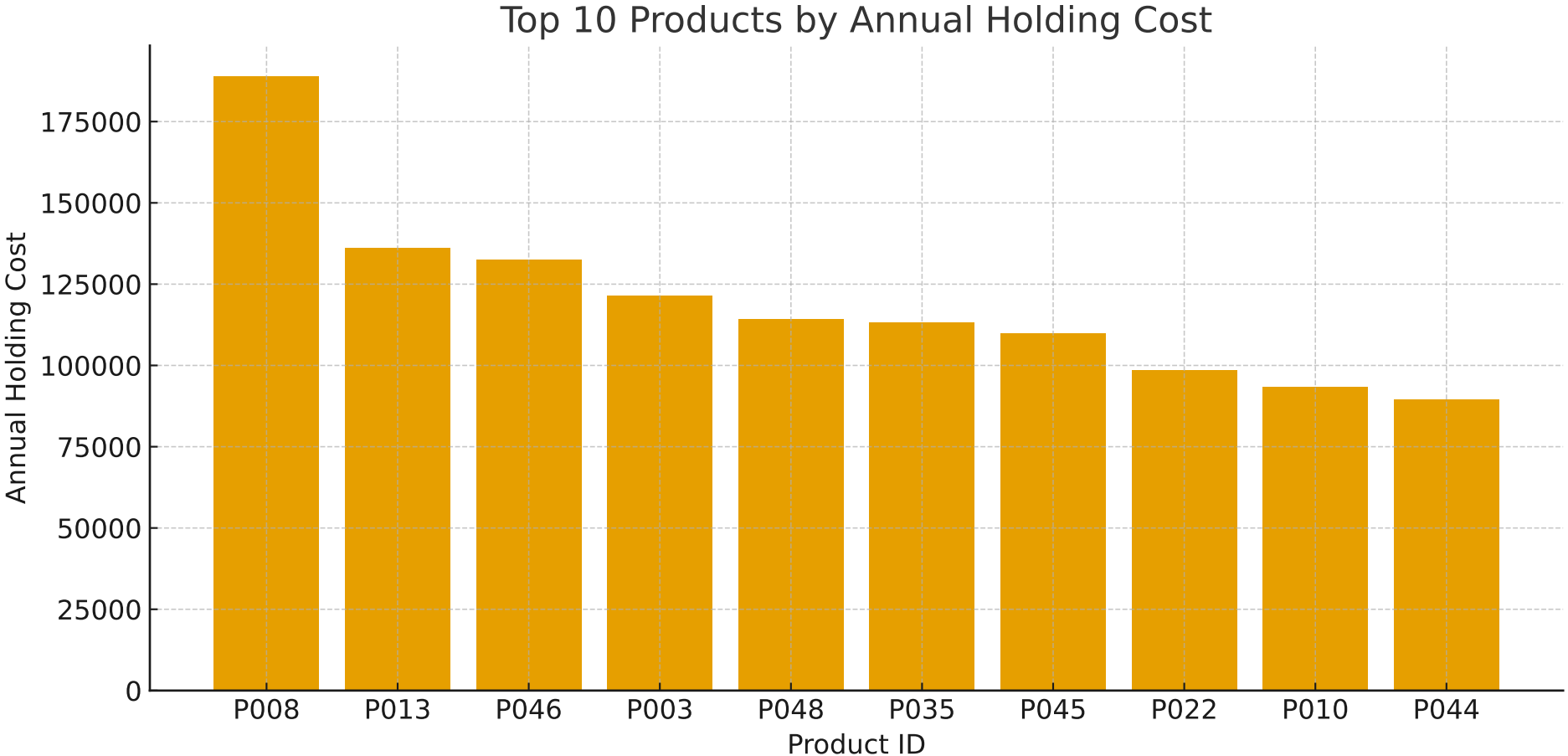
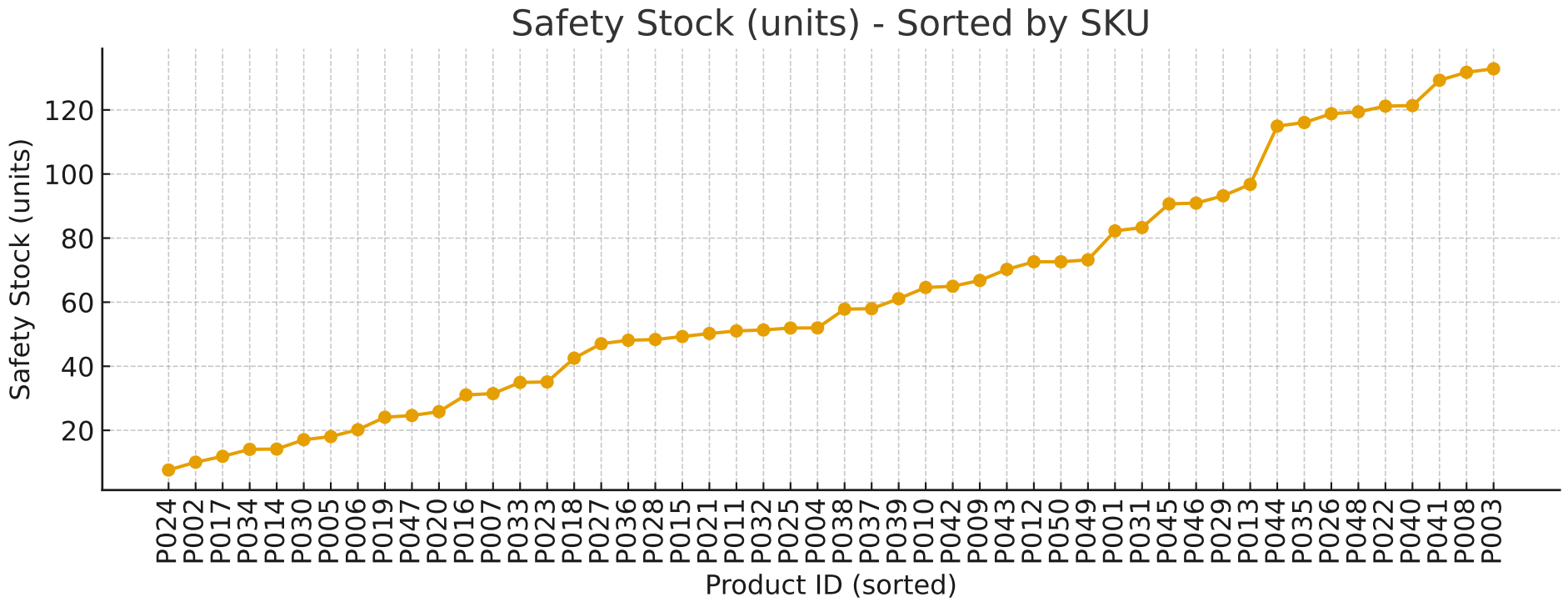
Inventory Optimization Project - Summary

Objective: Reduce holding costs while maintaining service levels for 50 SKUs using ABC classification, Safety Stock (Z=1.65 for 95% SL), Reorder Point (ROP), and EOQ (Ordering cost=₹200, Holding rate=25%) formulas used: - Annual Value = Annual_Demand × Unit_Cost - Safety Stock = Z × StdDev_Daily × sqrt(Lead_Time_days) - ROP = Daily_Demand × Lead_Time_days + Safety Stock - EOQ = sqrt((2 × Annu × Ordering_Cost) / (Unit_Cost × Holding_Rate))

Results & Insights: - Total Annual Holding Cost (all SKUs): 2,739,563.94 - Top 10 SKUs contribute 1,197,371.22 (43.7%) of total holding cost. - ABC by value: A=419121988, B=131017925, C=65228566 (chart). - Safety Stock range: 7.62 to 132.84 units. Recommendation: Focus optimization efforts on Category A items and the top 10 SKUs by holding cost. Consider tuning service level (Z) and holding rate assumptions for scenario analysis.


ABC Contribution by Annual Value
A (419121988)
68.1%
10.6%
C (65228566)
21.3%
B (131017925)


Top 10 Products by Annual Holding Cost
Annual Holding Cost
0
25000
50000
75000
100000
125000
150000
175000
P008
P013
P046
P003
P048
P035
P045
P022
P010
P044
Product ID


Safety Stock (units) - Sorted by SKU
Safety Stock (units)
20
40
60
80
100
120
P024
P002
P017
P034
P014
P030
P005
P006
P019
P047
P020
P016
P007
P033
P023
P018
P027
P036
P028
P015
P021
P011
P032
P025
P004
P038
P037
P039
P010
P042
P009
P043
P012
P050
P049
P001
P031
P045
P046
P029
P013
P044
P035
P026
P048
P022
P040
P041
P008
P003
Product ID (sorted)