

Real-Life Coding Assignment: “Smart Inventory Tracker for a Mobile Shop”

Problem Statement

You have been hired by a mobile retail store to build a mini “Smart Inventory Tracker.” The store maintains a list of mobile phone prices in an integer array. The inventory team wants two features:

1. **Sort all prices in ascending order** so they can display them cleanly on the shop’s digital price board.
2. **Search for a specific mobile price** to quickly check if a model with that price is available.

Your job is to implement this using the algorithms you learned today.

Your Task

Step 1: Sorting

Use **any one sorting algorithm** you learned today:

- Optimized Bubble Sort
- Selection Sort
- Insertion Sort
- Merge Sort
- Quick Sort

Sort the list of mobile prices so the store can display them neatly.

Step 2: Searching

Use **any one searching algorithm**:

- Sequential Search

- Binary Search

Search for a price entered by the user and tell whether that mobile model exists in the inventory.

Input Example

Array of mobile prices:

{14999, 8999, 12999, 19999, 9999, 17999, 7999}

User searches for:

9999

Expected Output

Original Prices: 14999 8999 12999 19999 9999 17999 7999

Sorted Prices: 7999 8999 9999 12999 14999 17999 19999

Enter price to search: 9999

Price found at index: 2

Requirement Summary

- Use **one sorting algorithm** taught today.
- Use **one searching algorithm** taught today.
- Use both algorithms in the same program.
- Print before/after sorting.
- Show result of search operation.