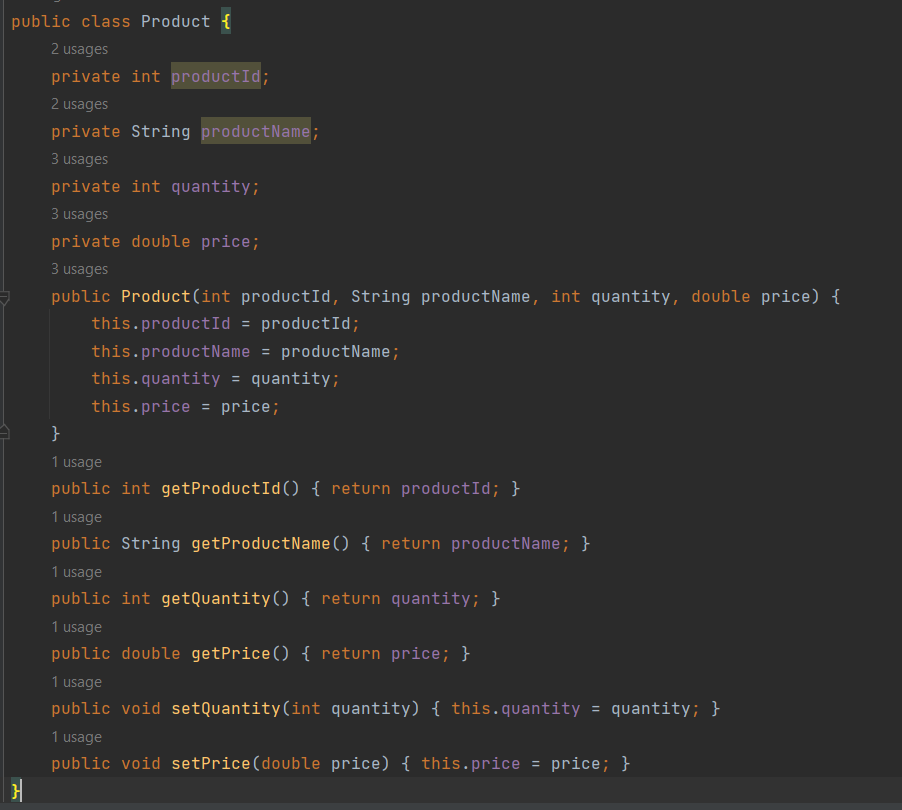
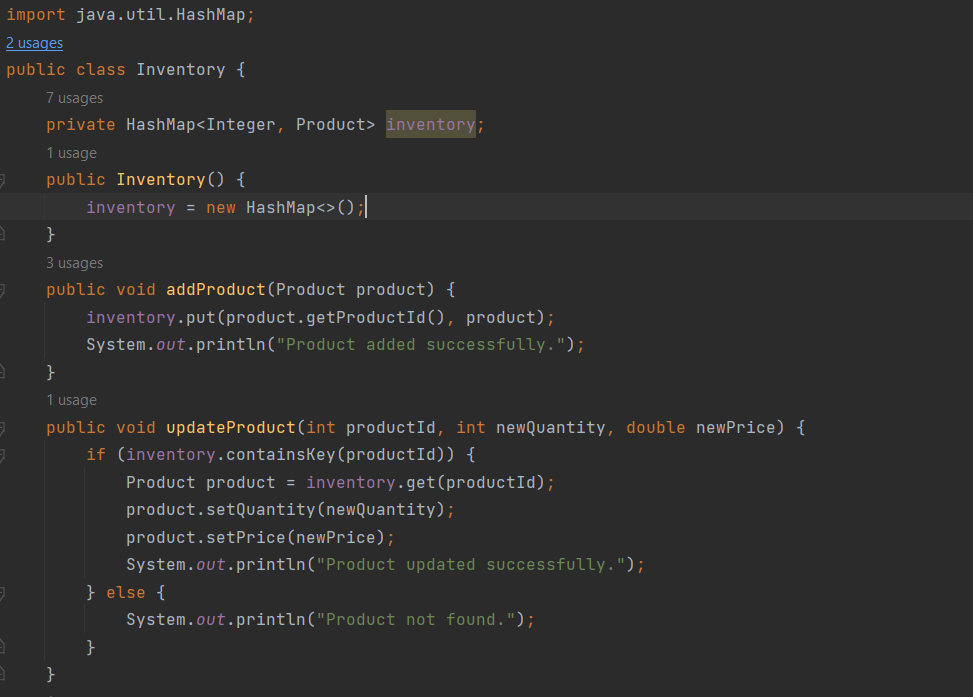
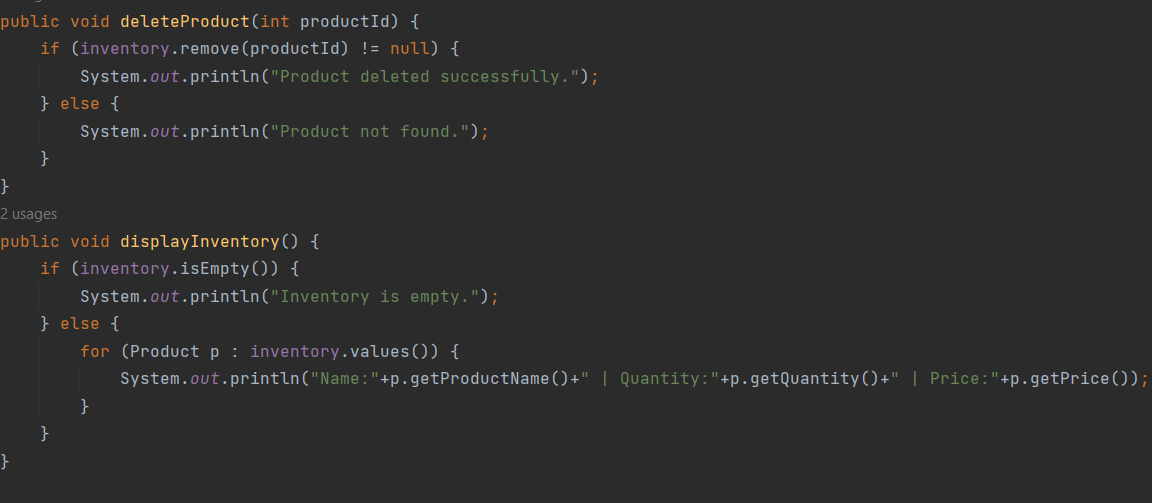
**Exercise 1: Inventory Management System**

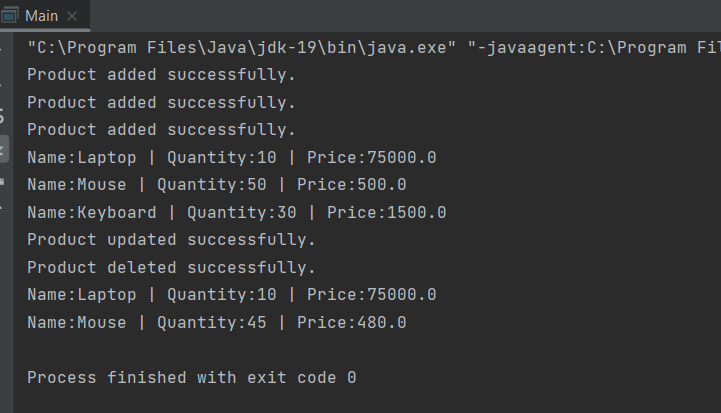




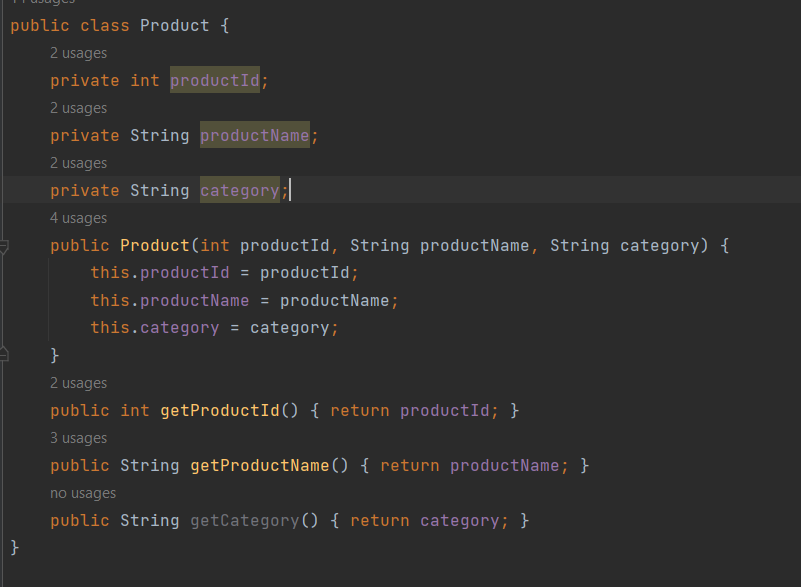


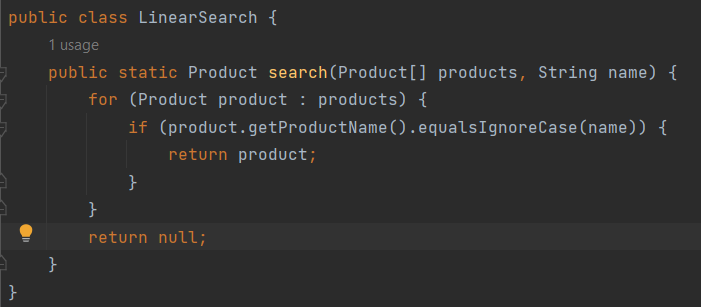


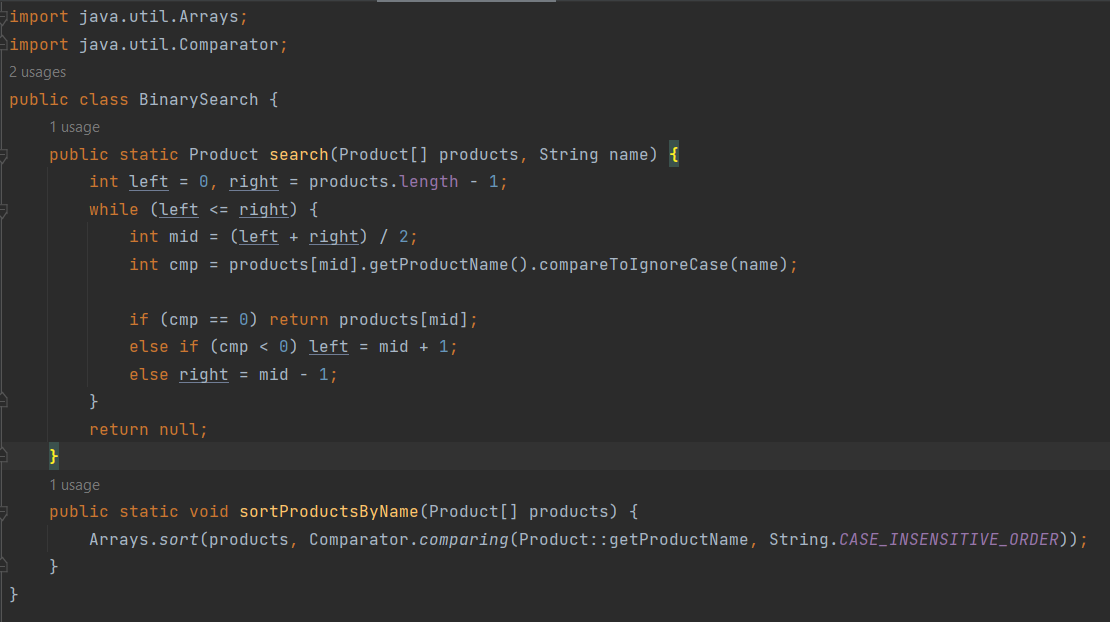
**Output:**



**Exercise 2: E-commerce Platform Search Function**

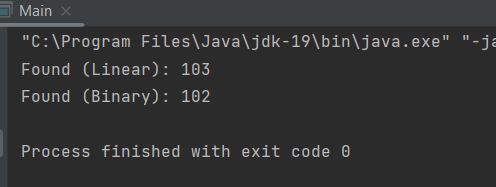






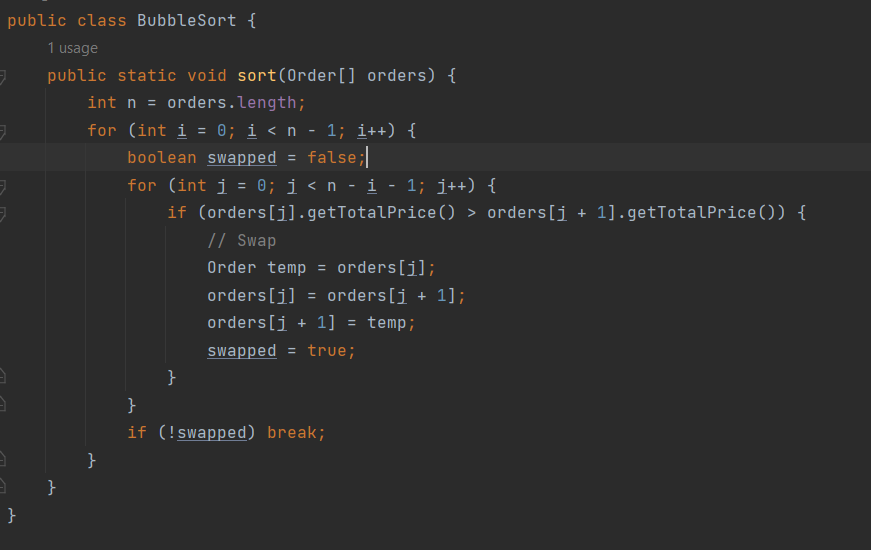


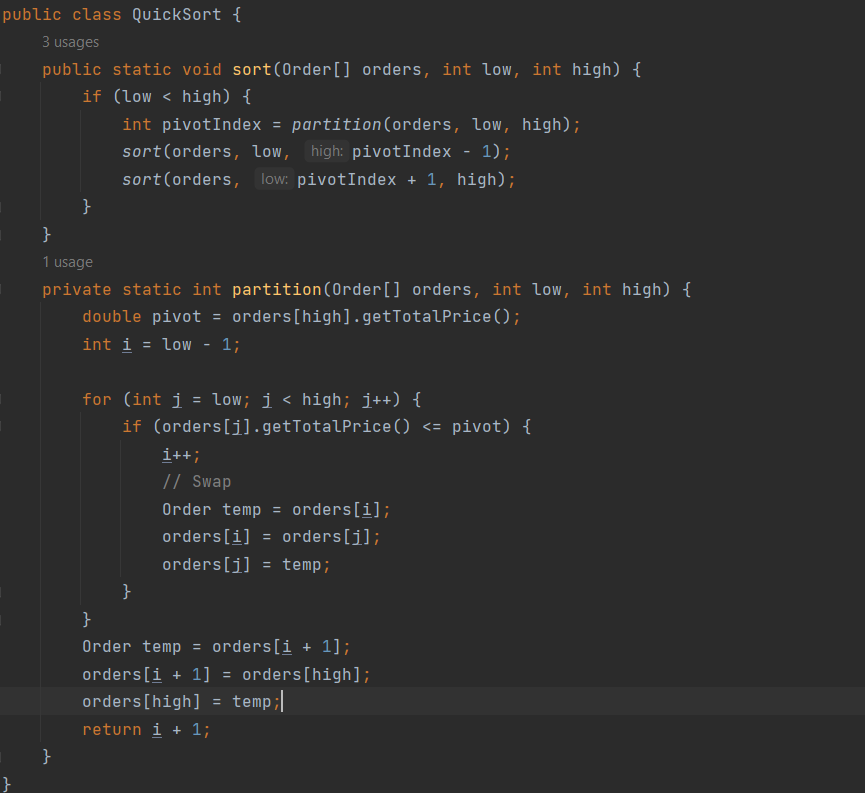
**Output:**

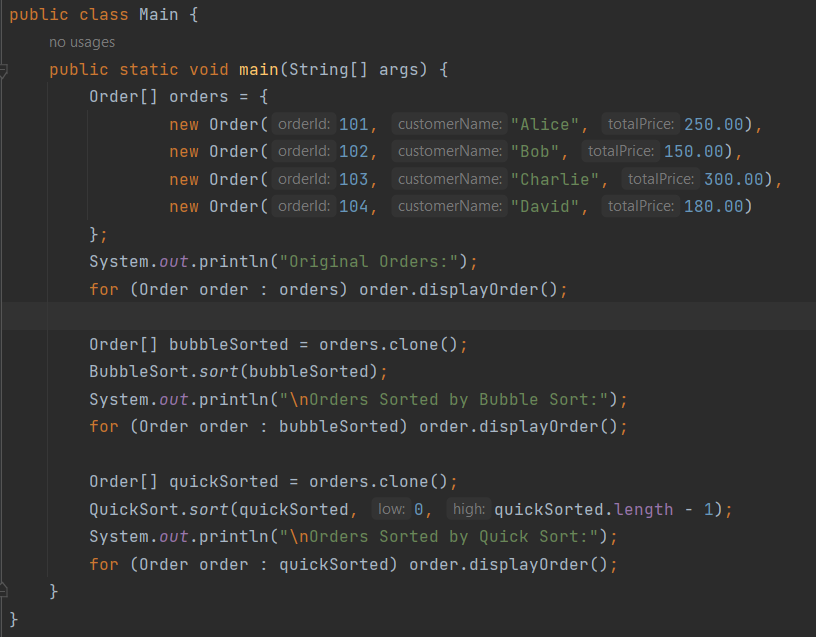


**Exercise 3: Sorting Customer Orders**

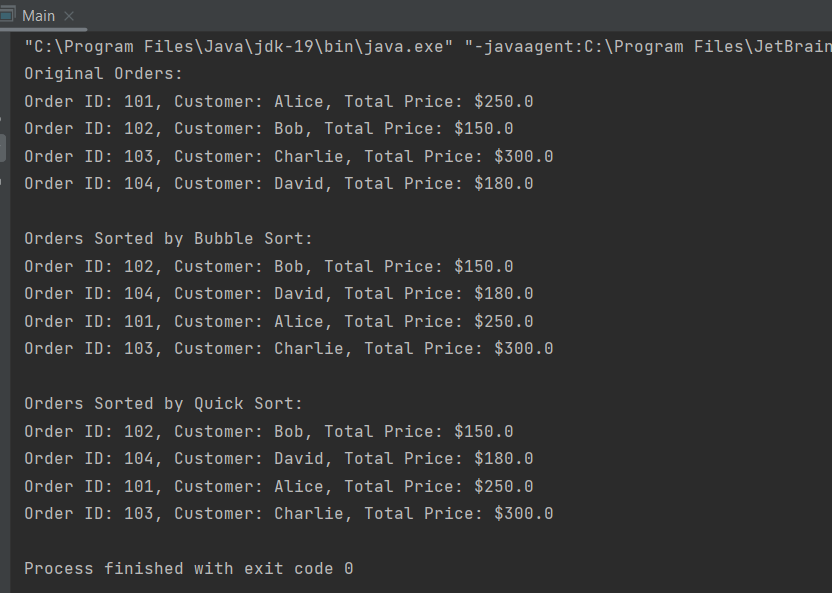




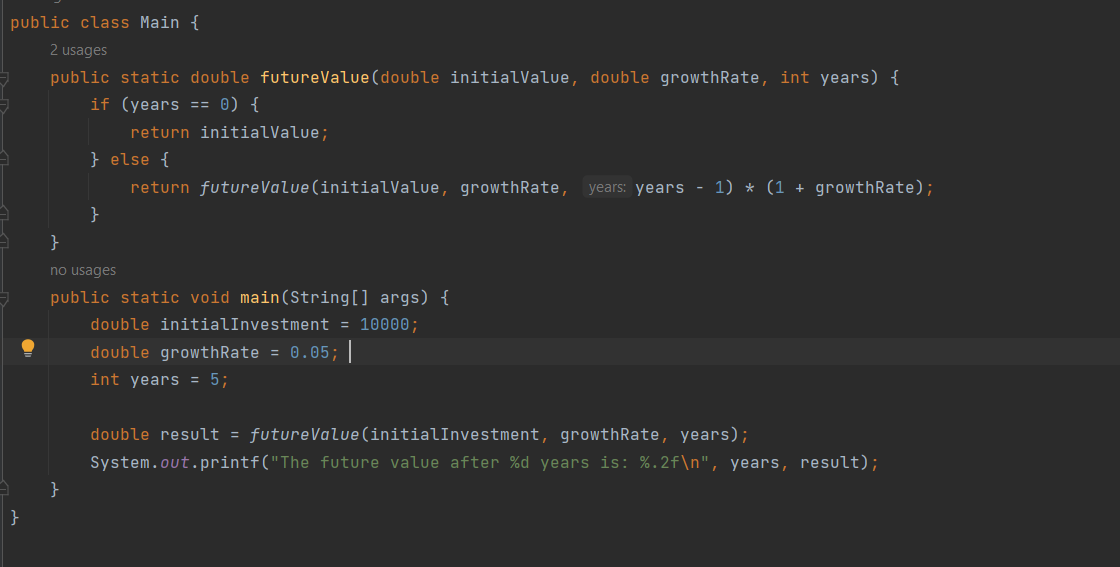




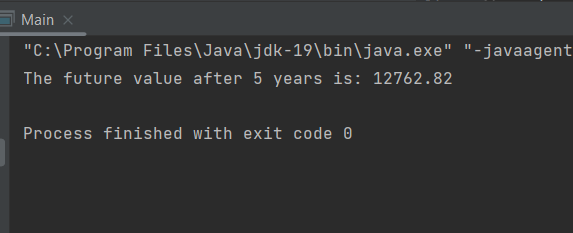
**Output:**



**Exercise 7: Financial Forecasting**



**Output:**



**Conclusion**: Recursive calls can become inefficient or cause stack overflow for large n. Hence a simple iterative approach is more efficient in Java as it is simpler.

|  |  |  |
| --- | --- | --- |
| **Feature** | **Recursive** | **Iterative** |
| Code clarity | Elegant | Simple |
| Performance | O(n) time, O(n) space | O(n) time, O (1) space |