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

**Understand Asymptotic Notation**

**🔹 What is Big O Notation?**

* **Big O** describes the **upper bound of an algorithm's running time** as input size (n) increases.
* It helps you analyze and compare **algorithm efficiency** without needing to run code.

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| **🔹 Cases in Search:** |
| |  |  |  |  | | --- | --- | --- | --- | | Case | Description | Linear Search | Binary Search | | Best Case | First item is the match | O(1) | O(1) | | Average Case | Match somewhere in the middle | O(n/2) ≈ O(n) | O(log n) | | Worst Case | No match or last item | O(n) | O(log n) | |