Analysis:

Time Complexity Comparison:

Linear Search:

- Time: O(n)

- Space: O(1)

- Pros: Works on unsorted data, easy to implement

- Cons: Inefficient for large datasets

Binary Search:

- Time: O(log n)

- Space: O(1)

- Pros: Much faster for large sorted datasets

- Cons: Requires sorting beforehand => O(n log n)

Which Is Better?

- If data is unsorted and searching occurs rarely: Linear Search is acceptable.

- If data is sorted or searching is frequent: Binary Search is better due to logarithmic performance.

- For real-world platforms with millions of products, binary search or indexing/search engines like Elasticsearch are more suitable.