**E commerce Platform Search Function**

**Understanding Asymptotic Notation**

**Big O Notation**

Big O notation describes how an algorithm's performance scales as input size grows. It measures the worst-case scenario of time or space complexity.

* **O(1)**: Constant time (ideal)
* **O(log n)**: Logarithmic time (very efficient)
* **O(n)**: Linear time
* **O(n²)**: Quadratic time (less efficient)

**Search Operation Scenarios**

* **Best case**: Item found immediately (O(1) for both algorithms)
* **Average case**: Item found after searching half the elements (O(n) for linear, O(log n) for binary)
* **Worst case**: Item not present (O(n) for linear, O(log n) for binary)

**Product Class**

A computer screen shot of a program code

AI-generated content may be incorrect.

Linear Seach

A screen shot of a computer code

AI-generated content may be incorrect.

Binary Search

A screen shot of a computer program

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Testing Linear and Binary Search Functions

A computer screen shot of a program

AI-generated content may be incorrect.

**Output**

A screen shot of a computer

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