1. **Big O Notation:** Big O notation is a mathematical notation used to describe the upper bound of an algorithm's running time. It helps in analyzing the performance and efficiency of algorithms by providing a high-level understanding of their time and space complexity.

**Best Case:** The scenario where the algorithm performs the fewest steps.

**Average Case:** The scenario that represents the average number of steps the algorithm takes.

**Worst Case:** The scenario where the algorithm takes the maximum number of steps.

4. **Product Class:** Defines the Product class with attributes productId, productName, and category.

**ECommercePlatform Class:** Contains two search methods:

linearSearch: Performs a linear search on the unsorted products list.

binarySearch: Performs a binary search on the sortedProducts list.

**Main Class:** Creates a list of sample products, demonstrates linear and binary search operations, and compares the time complexity of both search methods.