**E-commerce Platform Search Function**

**Step -1 :**Asymptotic Notation

**Big O** notation describes the upper bound of an algorithm’s running time. It provides a **worst-case scenario** for input size **n**.

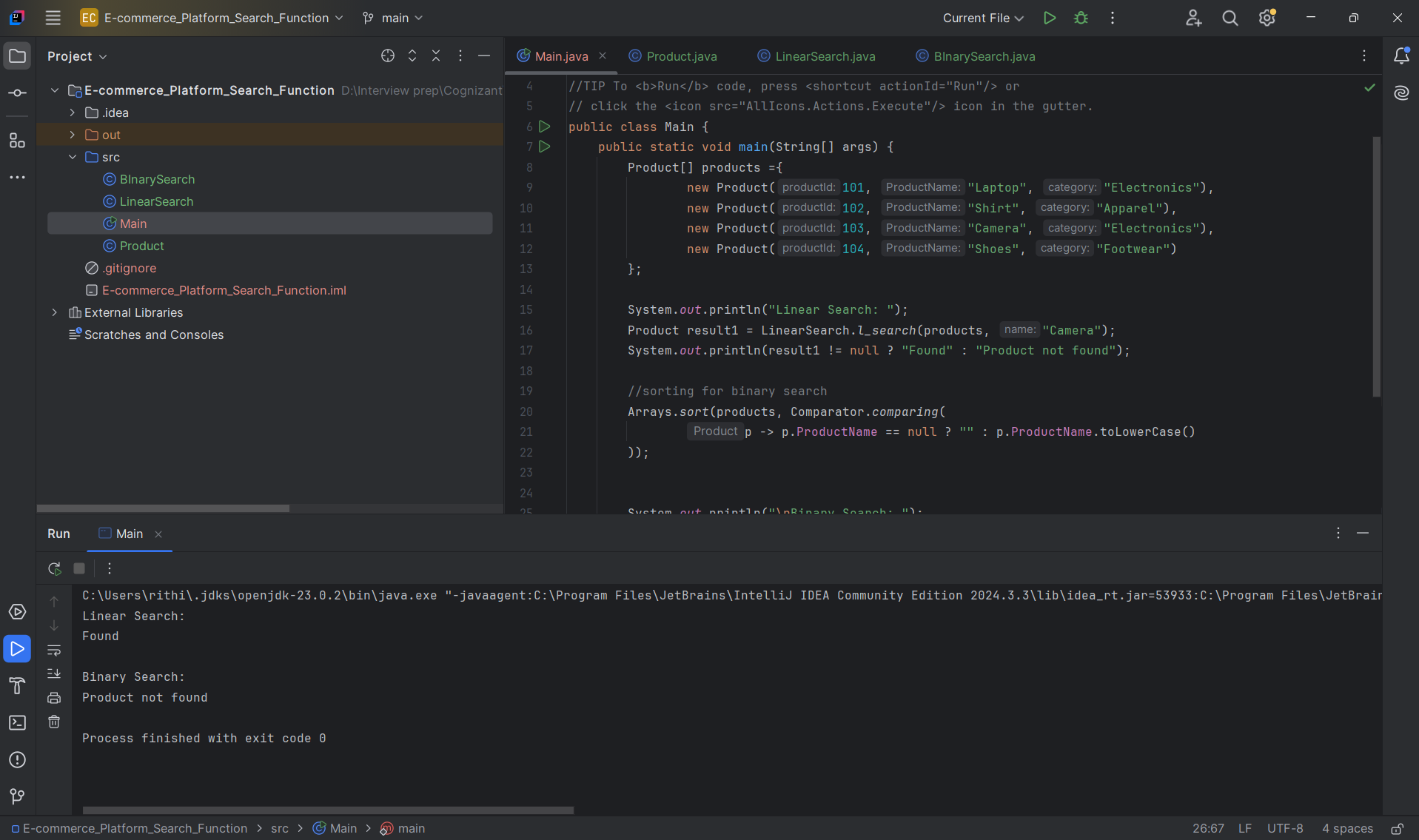
| **Algorithm** | **Best Case** | **Average Case** | **Worst Case** |
| --- | --- | --- | --- |
| **Linear Search** | O(1) – first item | O(n/2) → O(n) | O(n) – last item |
| **Binary Search** | O(1) – middle | O(log n) | O(log n) |

**Step -2 & 3 :**

Refer the coding file in github.

**Step -4:**

| **Feature** | **Linear Search** | **Binary Search** |
| --- | --- | --- |
| **Time Complexity** | **O(n)** | **O(log n)** |
| **Sorted Array Required** | **No** | **Yes** |
| **Ease of Use** | **Simple** | **Needs sorting** |

**Screenshots:  
  
  
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