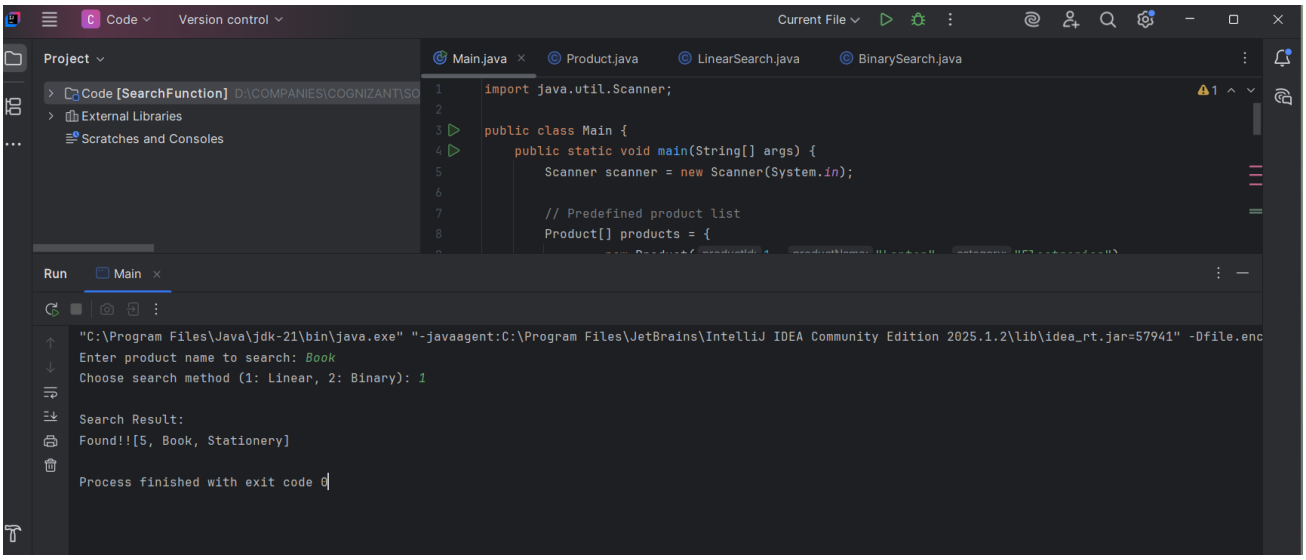
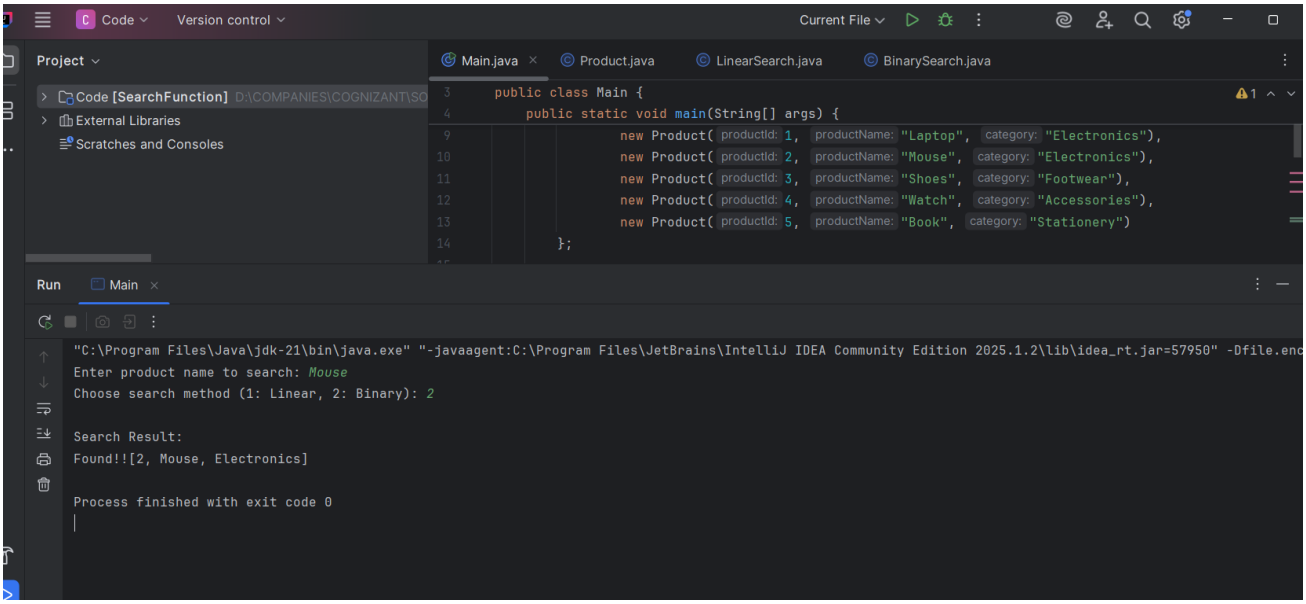
❖ Exercise 2: E-commerce Platform Search Function

Output :

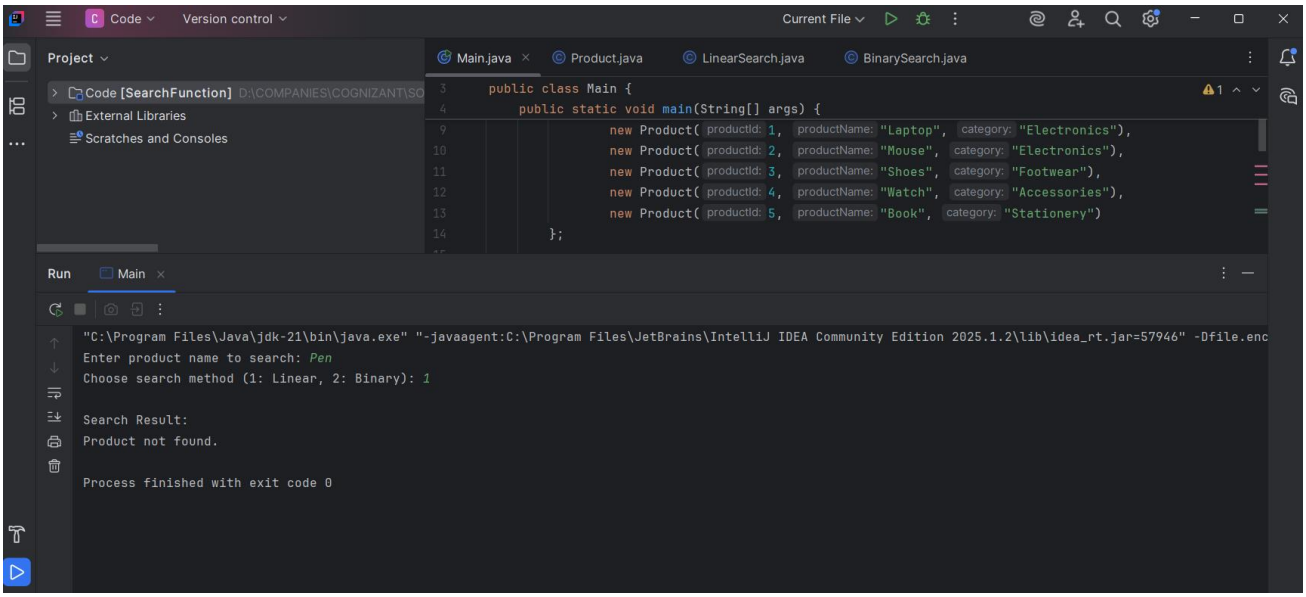
➔ Using Linear Search :



➔ Using Binary Search :



➔ If Product is not Available:



➔ Comparing Linear Search and Binary Search :

Feature	Linear Search	Binary Search
Data Requirement	Works on unsorted or sorted data	Requires sorted data
Time Complexity (Best)	O(1)	O(1)
Time Complexity (Average)	O(n)	O(log n)
Time Complexity (Worst)	O(n)	O(log n)
Space Complexity	O(1)	O(1) (iterative), O(log n) (recursive)
Method Type	Sequential	Divide and conquer
Suitable For	Small or unsorted datasets	Large and sorted datasets
Implementation Ease	Very simple	Moderate complexity