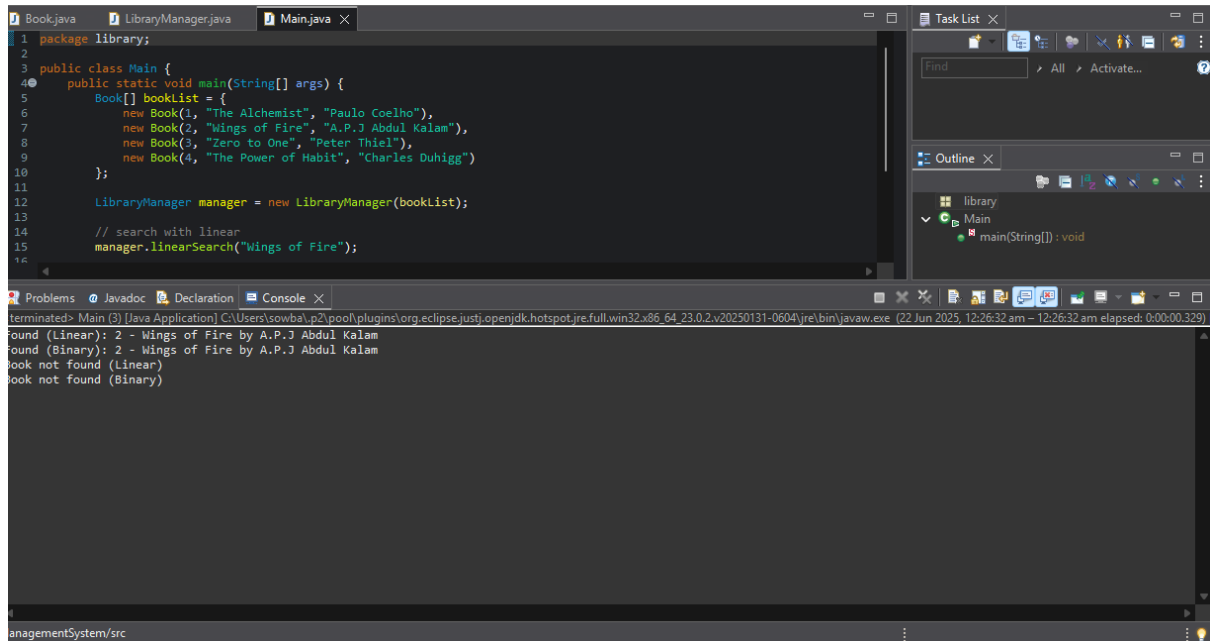


Exercise 6: Library Management System

OUTPUT:



```
1 package library;
2
3 public class Main {
4     public static void main(String[] args) {
5         Book[] bookList = {
6             new Book(1, "The Alchemist", "Paulo Coelho"),
7             new Book(2, "Wings of Fire", "A.P.J Abdul Kalam"),
8             new Book(3, "Zero to One", "Peter Thiel"),
9             new Book(4, "The Power of Habit", "Charles Duhigg")
10        };
11
12        LibraryManager manager = new LibraryManager(bookList);
13
14        // search with linear
15        manager.linearSearch("Wings of Fire");
16    }
17 }
```

terminated> Main (3) [Java Application] C:\Users\sowbal.p2\poo\plugins\org.eclipse.justi.openjdk.hotspot.jre.full.win32.x86_64_23.0.2.v20250131-0604\jre\bin\javaw.exe (22 Jun 2025, 12:26:32 am – 12:26:32 am elapsed: 0:00:00.329)

found (Linear): 2 - Wings of Fire by A.P.J Abdul Kalam
found (Binary): 2 - Wings of Fire by A.P.J Abdul Kalam
book not found (Linear)
book not found (Binary)

In the Library Management System, linear search works for unsorted data, but binary search is faster ($O(\log n)$) and ideal for sorted book lists. Choosing the right search algorithm based on data size and order improves search efficiency and user experience.