

## **LIBRARY MANAGEMENT SYSTEM**

### **Time complexity analysis:**

Linear Search :  $O(n)$

Binary search :  $O(\log n)$

where  $n$  = number of books

### **Discussion:**

1) Linear search is suitable for small data sets or unsorted lists.

2) Binary search is more efficient for large data sets and sorted lists.

If the list is not sorted, the cost of sorting the list before performing a binary search may outweigh the benefits of using binary search.