Data Structure and Algorithm
Quiz-04 (Fall 2023)

Name: _____	**Roll No:** _____	**Date:** _____
Instructor: Dr. Tanweer Bukhari	**Section: D5**	**Marks:** 15 **Time:** 20 minutes

Task 1: Recursion

Write a recursive function that will complete a task in an **array A of size N** (where values are in non-decreasing order). The function must find whether the value is present or not. If **found** return that index, otherwise return -1. **Array index starts from 0.**

The time complexity must be less than **O(n)**.

Solution:

```
int RBinarySearch(int A[], int Key, int low, int high) {
    if (low > high) {
        return -1; // Key not found
    }

    int mid = (low + high) / 2;

    if (A[mid] == Key) {
        return mid; // Key found at index mid
    } else if (Key > A[mid]) {
        return RBinarySearch(A, Key, mid + 1, high);
    } else {
        return RBinarySearch(A, Key, low, mid - 1);
    }
}
```

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