```
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public class Program {
  // O(log(n)) time | O(1) space
  public static int[] SearchForRange(int[] array, int target) {
    int[] finalRange = {-1, -1};
    alteredBinarySearch(array, target, 0, array.Length - 1, finalRange, true);
    alteredBinarySearch(array, target, 0, array.Length - 1, finalRange, false);
    return finalRange;
  }

  public static void alteredBinarySearch(int[] array, int target, int left, int right,
    int[] finalRange, bool goLeft) {
    while (left <= right) {
      int mid = (left + right) / 2;
      if (array[mid] < target) {
        left = mid + 1;
      } else if (array[mid] > target) {
        right = mid - 1;
      } else {
        if (goLeft) {
          if (mid == 0 || array[mid - 1] != target) {
            finalRange[0] = mid;
            return;
          } else {
            right = mid - 1;
          }
        } else {
          if (mid == array.Length - 1 || array[mid + 1] != target) {
            finalRange[1] = mid;
            return;
          } else {
            left = mid + 1;
          }
        }
      }
    }
  }
}

```