```
package com.simply;
import java.util.Arrays;
import java.util.Scanner;
public class Exponentical {
  public static int exponentialSearch(int[] arr, int target) {
    if (arr[0] == target) {
       return 0;
    }
    int n = arr.length;
    int bound = 1;
    while (bound < n && arr[bound] <= target) {
       bound *= 2;
    }
    int left = bound / 2;
    int right = Math.min(bound, n - 1);
    return binarySearch(arr, target, left, right);
  }
  public static int binarySearch(int[] arr, int target, int left, int right) {
    while (left <= right) {
       int mid = left + (right - left) / 2;
       if (arr[mid] == target) {
         return mid;
       } else if (arr[mid] < target) {
         left = mid + 1;
```

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} else {
      right = mid - 1;
    }
  }
  return -1;
}
public static void main(String[] args) {
  int[] array = {5, 65, 89, 1, 3, 10, 22, 34, 43 };
  System.out.println("Enter the number to search:");
  Scanner scanner = new Scanner(System.in);
  int target = scanner.nextInt();
  scanner.close();
  int index = exponentialSearch(array, target);
  if (index != -1) {
    System.out.println("Element found at index " + index);
  } else {
    System.out.println("Element not found");
  }
}
```

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