```
File - D:\cpl\2023-cpl-coding-0\3-for-a-while\binary-search.c
 1 //
 2 // Created by hfwei on 2023/10/11.
 3 //
 5 #include <stdio.h>
 7 #define LEN 10
 8 int dict[LEN] = { 1, 1, 2, 3, 5, 8, 13, 21, 35, 56 };
10 int main(void) {
     int key = 0;
11
12
     scanf("%d", &key);
13
14
     // TODO: binary search: search for key in dict[]
15
     int low = 0;
16
     int high = LEN - 1;
17
18
     int index = -1;
19
20
     while (low <= high) {</pre>
21
        int mid = (low + high) / 2;
22
23
       if (key > dict[mid]) {
24
         low = mid + 1;
25
        } else if (key < dict[mid]) {</pre>
26
          high = mid - 1;
27
        } else { // key == dict[mid]
28
          index = mid;
29
          // break; // what if `break` is removed
30
          high = mid - 1; // find the leftmost index of the key
       }
31
     }
32
33
     if (index == -1) {
34
       printf("Not found!\n");
35
36
     } else {
37
        printf("The index of %d is %d.\n", key, index);
38
39
40
     return 0;
41 }
```