

**6.00 Handout, Lecture 9**  
**(Not intended to make sense outside of lecture)**

```
def search(s, e):
    i = 0
    while i < len(s):
        if s[i] == e:
            return (True, i)
        if s[i] > e:
            return (False, i)
        i += 1
    return (False, i)

def bsearch(s, e, first, last):
    global numCalls
    #print first, last
    if (last - first) < 2:
        return s[first] == e or s[last] == e
    mid = first + int((last - first)/2)
    if s[mid] == e:
        return True
    numCalls += 1
    if s[mid] > e:
        return bsearch(s, e, first, mid - 1)
    else:
        return bsearch(s, e, mid + 1, last)

def testSearch():
    global numCalls
    s = range(5000)
    result, num = search(s, 1001)
    print result, num
    numCalls = 0
    print bsearch(s, 1001, 0, len(s) - 1), numCalls
    result, num = search(s, 5000)
    print result, num
    numCalls = 0
    print bsearch(s, 5000, 0, len(s) - 1), numCalls
    s = range(10000)
    result, num = search(s, 10000)
    print result, num
    numCalls = 0
    print bsearch(s, 10000, 0, len(s) - 1), numCalls
```