

Users > yvonneline > Downloads > CMSC21 > Lecture5 > C anagram3.c > ...

```
1  #include <stdio.h>
2  #include <ctype.h>
3  #include <stdbool.h>
4
5  void scan_word(int *occurrences);
6  bool is_anagram(int *occurrences1, int *occurrences2);
7
8  int main(void) {
9      int occurrences1[26] = {0}; // empty array for first word
10     int occurrences2[26] = {0}; // empty array for second word
11
12     printf("Enter first word: "); // prompts user to enter first word
13     scan_word(occurrences1); // calls function and scans the array of first word
14
15     printf("Enter second word: "); // prompts user to enter the second word
16     scan_word(occurrences2); // calls function and scans array of second word
17
18     if (is_anagram(occurrences1, occurrences2)) { // accepts the 2 arrays of first and second word
19         printf("The words are anagrams.\n"); // if true, it is an anagram
20     } else {
21         printf("The words are not anagrams.\n"); // if false, not an anagram
22     }
23
24     return 0;
25 }
26
27 void scan_word(int *occurrences) { // accepts array as the parameter
28     char c;
29     while ((c = getchar()) != '\n') { // checks each character until a newline character is encountered
30         if (isalpha(c)) { // checks if character is alphabetic character
31             *(occurrences + (toupper(c) - 'A')) += 1; // takes the index of the char in the array; increments the count for c
32         }
33     }
34 }
35
36 bool is_anagram(int *occurrences1, int *occurrences2) { // accepts 2 arrays as parameter
37     for (int i = 0; i < 26; i++) { // loop for each element of the arrays
38         if (*(occurrences1 + i) != *(occurrences2 + i)) { // if the count for each index are NOT the same for both arrays, then
39             return false;
40         }
41     }
42     return true;
43 }
44
```

- yvonneline@Yvannes-Air output % cd "/Users/yvonneline/Downloads/CMSC21/Lecture5/output" &&  
./"anagram3"
- yvonneline@Yvannes-Air output % ./"anagram3"  
Enter first word: smartest  
Enter second word: mattress  
The words are anagrams.
- yvonneline@Yvannes-Air output % cd "/Users/yvonneline/Downloads/CMSC21/Lecture5/output" &&  
./"anagram3"
- yvonneline@Yvannes-Air output % ./"anagram3"  
Enter first word: dumbest  
Enter second word: stumble  
The words are not anagrams.
- yvonneline@Yvannes-Air output %