Problem 3: Finding Complexity using Counter Method

Question:

Convert the following algorithm into a program and find its time complexity using counter method.

```
 Factor(num) {
 {
    for (i = 1; i <= num;++i)
    {
     if (num % i== 0)
        {
          printf("%d ", i);
        }
     }
  }
```

Note: No need of counter increment for declarations and scanf() and counter variable printf() statement.

Input:
A positive Integer n
Output:
Print the value of the counter variable

Answer:

```c
#include <stdio.h>

int main() {
    int num;
    scanf("%d", &num);
    int count = 0;

    for (int i = 1; ; i++) {
        count++; // loop condition
        if (i > num) break;

        count++; // if condition check
        if (num % i == 0) {
            count++; // extra for successful condition
            // printf("%d ", i); // not counted
        }
        // i++ not counted
    }

    printf("%d\n", count);
    return 0;
}

```

	Input	Expected	Got	
✔	12	31	31	✔
✔	25	54	54	✔
✔	4	12	12	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.