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CS23331-DAA-2024-CSE / Problem 1: Finding Complexity using Counter Method

Problem 1: Finding Complexity using Counter Method

Started on	Sunday, 17 August 2025, 9:13 PM
State	Finished
Completed on	Sunday, 17 August 2025, 9:16 PM
Time taken	3 mins 9 secs
Marks	1.00/1.00
Grade	10.00 out of 10.00 (100%)

Question 1 | Correct Mark 1.00 out of 1.00 

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

```
void function (int n)
{
    int i= 1;

    int s =1;

    while(s <= n)
    {
        i++;
        s += i;
    }
}
```

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

For example:

Input	Result
9	12

Answer: (penalty regime: 0 %)

```
1 #include <stdio.h>
2
3 int main() {
4     int n;
5     scanf("%d", &n);
6
7     int i = 1, s = 1;
8     int counter = 0; // to count operations
9
10 while (s <= n) {
11     counter++; // counting while loop condition check + body
12     i++; // operation
13     counter++; // count for increment
14     s += i; // operation
15     counter++; // count for addition + assignment
16 }
17
18 printf("%d\n", counter+3);
19 return 0;
20 }
```

	Input	Expected	Got	
✓	9	12	12	✓
✓	4	9	9	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

[Finish review](#)

[Back to Course](#)

Data retention summary



Dashboard My courses



CS23331-DAA-2024-CSE / Problem 2: Finding Complexity using Counter method

Problem 2: Finding Complexity using Counter method

Started on	Sunday, 17 August 2025, 9:16 PM
State	Finished
Completed on	Sunday, 17 August 2025, 9:18 PM
Time taken	1 min 38 secs
Marks	1.00/1.00
Grade	10.00 out of 10.00 (100%)

Question 1 | Correct Mark 1.00 out of 1.00 Flag question

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

```
void func(int n)
{
    if(n==1)
    {
        printf("**");
    }
    else
    {
        for(int i=1; i<=n; i++)
        {
            for(int j=1; j<=n; j++)
            {
                printf("*");
            }
        }
    }
}
```

```

        printf("*");
        break;
    }
}
}
}


```

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

Answer: (penalty regime: 0 %)

```

1 #include <stdio.h>
2 int main() {
3     int n;
4     scanf("%d", &n);
5
6     int counter = 0;
7
8     counter++;
9
10    if (n == 1) {
11        counter++;
12    } else {
13        for (int i = 1; i <= n; i++) {
14            counter++;
15            for (int j = 1; j <= n; j++) {
16                counter++;
17                counter++;
18                counter++;
19                counter++;
20                break;
21            }
22        }
23        counter++; // final outer loop failed check
24    }
25
26    printf("%d\n", counter);
27    return 0;
28 }


```

	Input	Expected	Got	
✓	2	12	12	✓

✓	1000	5002	5002	✓
✓	143	717	717	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

[Finish review](#)

[Back to Course](#)

Data retention summary



Dashboard My courses



CS23331-DAA-2024-CSE / Problem 3: Finding Complexity using Counter Method

Problem 3: Finding Complexity using Counter Method

Started on	Sunday, 17 August 2025, 9:18 PM
State	Finished
Completed on	Sunday, 17 August 2025, 9:19 PM
Time taken	39 secs
Marks	1.00/1.00
Grade	10.00 out of 10.00 (100%)

Question 1 | Correct Mark 1.00 out of 1.00 

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:

```
1 #include <stdio.h>
2
3 int main() {
4     int num;
5     scanf("%d", &num);
6
7     int counter = 0;
8
9     for (int i = 1; i <= num; i++) {
10         counter++;
11         counter++;
12         if (num % i == 0) {
13             counter++;
14         }
15     }
16     counter++;
17
18     printf("%d\n", counter);
19     return 0;
20 }
21
```

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

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

[Finish review](#)

[Back to Course](#)

Data retention summary



Dashboard My courses



CS23331-DAA-2024-CSE / Problem 4: Finding Complexity using Counter Method

Problem 4: Finding Complexity using Counter Method

Started on	Sunday, 17 August 2025, 9:19 PM
State	Finished
Completed on	Sunday, 17 August 2025, 9:20 PM
Time taken	55 secs
Marks	1.00/1.00
Grade	10.00 out of 10.00 (100%)

Question 1 | Correct Mark 1.00 out of 1.00 

Convert the following algorithm into a program and find its time

complexity using counter method.

```
void function(int n)
{
    int c = 0;
    for(int i=n/2; i<n; i++)
        for(int j=1; j<n; j = 2 * j)
            for(int k=1; k<n; k = k * 2)
                c++;
}
```

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

Answer:

```
1 #include <stdio.h>
2 int main() {
3     int n;
4     scanf("%d", &n);
5     int counter = 0;
6     for (int i = n/2; i < n; i++) {
7         counter++;
8         for (int j = 1; j < n; j = 2 * j) {
9             counter++;
10            for (int k = 1; k < n; k = k * 2) {
11                counter++; // inner condition
12                counter++; // c++
13            }
14            counter++; // final inner loop failed check
15        }
16        counter++; // final middle loop failed check
17    }
18    counter++; // final outer loop failed check
19    printf("%d\n", counter+1);
20    return 0;
21 }
22 }
```

	Input	Expected	Got	
✓	4	30	30	✓
✓	10	212	212	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

[Finish review](#)

[Back to Course](#)

Data retention summary



Dashboard My courses



CS23331-DAA-2024-CSE / Problem 5: Finding Complexity using counter method

Problem 5: Finding Complexity using counter method

Started on	Sunday, 17 August 2025, 9:20 PM
State	Finished
Completed on	Sunday, 17 August 2025, 9:21 PM
Time taken	30 secs
Marks	1.00/1.00
Grade	10.00 out of 10.00 (100%)

Question 1 | Correct Mark 1.00 out of 1.00 

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

```
void reverse(int n)
{
    int rev = 0, remainder;
    while (n != 0)
    {
        remainder = n % 10;
        rev = rev * 10 + remainder;
        n /= 10;

    }
    print(rev);
}
```

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

Input:

A positive Integer n

Output:

Print the value of the counter variable

Answer:

```
1 #include <stdio.h>
2 int main() {
3     int n;
4     scanf("%d", &n);
5     int rev = 0, remainder, counter = 0;
6     while (n != 0) {
7         counter++;
8         remainder = n % 10;
9         counter++;
10        rev = rev * 10 + remainder;
11        counter++;
12        n /= 10;
13        counter++;
14    }
15    counter++;
16    printf("%d\n", counter+2);
17    return 0;
18 }
```

	Input	Expected	Got	
✓	12	11	11	✓
✓	1234	19	19	✓

Passed all tests! ✓

Correct

Marks for this submission: 1.00/1.00.

[Finish review](#)

[Back to Course](#)

Data retention summary