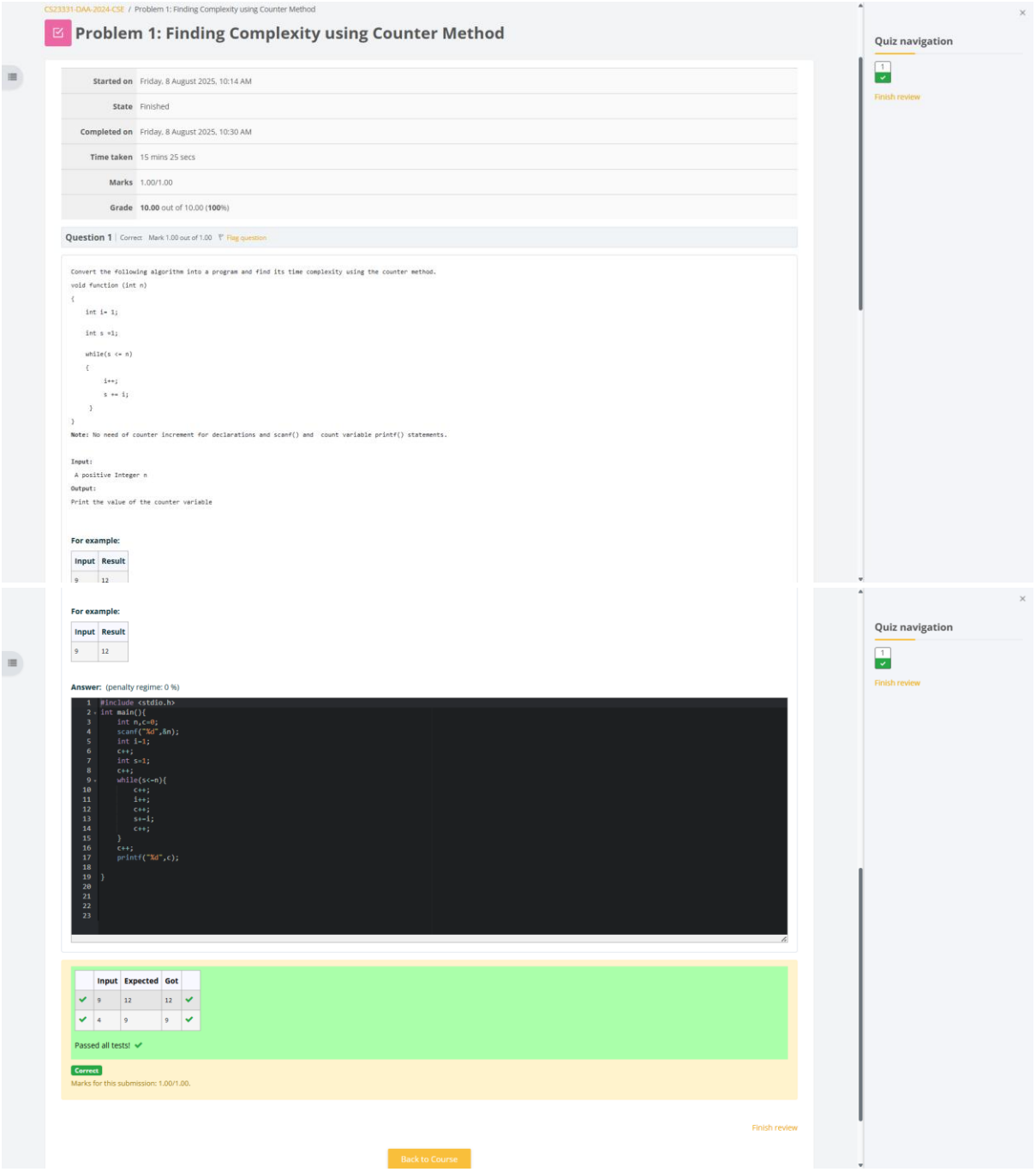
FINDING TIME COMPLEXITY OF ALGORITHM



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

Problem 1: Finding Complexity using Counter Method

Started on	Friday, 8 August 2025, 10:14 AM
State	Finished
Completed on	Friday, 8 August 2025, 10:30 AM
Time taken	15 mins 25 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 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

Quiz navigation

1

Finish review

For example:

Input	Result
9	12

Answer: (penalty regime: 0 %)

```
#include <stdio.h>
int main(){
    int n,c=0;
    scanf("%d",&n);
    int i=1;
    c++;
    int s=1;
    c++;
    while(s<=n){
        c++;
        i++;
        c++;
        s+=i;
        c++;
    }
    c++;
    printf("%d",c);
}
```

	Input	Expected	Got	
✔	9	12	12	✔
✔	4	9	9	✔

Passed all tests! ✔

Correct

Marks for this submission: 1.00/1.00.

Quiz navigation

1

Finish review

Finish review

Back to Course

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 %)

```
#include <stdio.h>

int main() {
    int n, c=0;
    scanf("%d",&n);
    if(n==1){
        c++;
        c++;

    }
    else{
        c++;
        for(int i=1;i<=n;i++){
            c++;
            for(int j=1;j<=n;j++){
```

Answer: (penalty regime: 0 %)

```
#include <stdio.h>

int main() {
    int n, c=0;
    scanf("%d",&n);
    if(n==1){
        c++;
        c++;

    }
    else{
        c++;
        for(int i=1;i<=n;i++){
            c++;
            for(int j=1;j<=n;j++){
                c++;
                c++;
                c++;
                break;
                c++;
            }
            c++;
        }
        c++;
    }
    printf("%d",c);
}
```

	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

Quiz navigation

1

Finish review

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 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,i,c=0;
    scanf("%d",&num);
    for(i=1;i<=num;++i){
        c++;
        if(num%i==0){

            //printf("%d",i);
            c++;
        }c++;
    }c++;
    printf("%d",c);
}
```

Print the value of the counter variable

Answer:

```c
#include<stdio.h>
int main(){
    int num,i,c=0;
    scanf("%d",&num);
    for(i=1;i<=num;++i){
        c++;
        if(num%i==0){

            //printf("%d",i);
            c++;
        }c++;
    }c++;
    printf("%d",c);
}
```

	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

Quiz navigation

1

Finish review

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 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:

```c
#include<stdio.h>
int main(){
    int n,c=0,ch=0;
    scanf("%d",&n);
    ch++;

    for(int i=n/2;i<n;i++){
        ch++;
        for(int j=1;j<n;j=2*j){
            ch++;
            for(int k=1;k<n;k=k*2){
                ch++;
                c++;
                ch++;
            }ch++;

        }ch++;
    }ch++;
    printf("%d",ch);
}
```

Quiz navigation

1

Finish review

Answer:

```c
#include<stdio.h>
int main(){
    int n,c=0,ch=0;
    scanf("%d",&n);
    ch++;

    for(int i=n/2;i<n;i++){
        ch++;
        for(int j=1;j<n;j=2*j){
            ch++;
            for(int k=1;k<n;k=k*2){
                ch++;
                c++;
                ch++;
            }ch++;

        }ch++;
    }ch++;
    printf("%d",ch);
}
```

	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

Quiz navigation

1

Finish review

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 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:

```c
#include<stdio.h>
int main(){
    int c=0,n,rev=0,remainder;
    scanf("%d",&n);
    c++;
    while(n!=0){
        c++;
        remainder=n%10;
        c++;
        rev=rev*10+remainder;
        c++;
        n/=10;
        c++;
    }c++;
    //print(rev);
    c++;
    printf("%d",c);
}
```

Print the value of the counter variable

Answer:

```c
#include<stdio.h>
int main(){
    int c=0,n,rev=0,remainder;
    scanf("%d",&n);
    c++;
    while(n!=0){
        c++;
        remainder=n%10;
        c++;
        rev=rev*10+remainder;
        c++;
        n/=10;
        c++;
    }c++;
    //print(rev);
    c++;
    printf("%d",c);
}
```

	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

Quiz navigation

1

Finish review

Quiz navigation

1

Finish review