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EXP 1 TIME COMPLEXITY WITH COUNTER METHOD

1)

```
 #include <stdio.h>
void function(int n) {
    int i = 1;
    int s = 1;
    int counter = 0;  // To count the number of iterations
    counter++;
    counter++;
    while (s <= n) {
        counter++;
        i++;
        counter++;        // Increment i
        s += i;     // Update s by adding i
        counter++;  // Increment the counter for each iteration
    }
    counter++;
    printf("%d\n", counter);  // Output the counter value
}

int main() {
    int n;
    scanf("%d", &n);  // Input the value of n
    function(n);       // Call the function with input n
    return 0;
}
```

2)

```
#include <stdio.h>
void func(int n)
{
    int c=0;

    if(n==1)
    {
      c++;
```

```
   }

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

3)

```
#include <stdio.h>
void factor(int num) {
   int count;
   count=0;

   for (int i = 1; i <= num;++i)
   {
    count++;
    if (num % i== 0)
      {
        count++;

      }
     count++;
```

```
    }
    count++;
    printf("%d",count);
 }
int main(){
    int n;
    scanf("%d",&n);
    factor(n);
}
```

4)

```
#include<stdio.h>
void function(int n)
{
   int c= 0;
   c++;
   for(int i=n/2; i<n; i++){
      c++;
      for(int j=1; j<n; j = 2 * j){
         c++;
         for(int k=1; k<n; k = k * 2){
            c++;
            c++;
         }
         c++;
      }
      c++;
   }
   c++;
   printf("%d",c);
}
int main(){
   int n;
   scanf("%d",&n);
   function(n);
}
```

5)

```
#include<stdio.h>
void reverse(int n)
{
```

```
   int c=0;
   int rev = 0, remainder;
   c++;
   while (n != 0)
    {
        c++;
        remainder = n % 10;
        c++;
        rev = rev * 10 + remainder;
        c++;
        n/= 10;
        c++;
    }
    c++;
    c++;
    printf("%d",c);
}
int main(){
    int n;
    scanf("%d",&n);
    reverse(n);
}
```