



Consider the following programming problem:

Given an integer  $N$ , find the number of divisors of  $N$  that are divisible by 3.

Please provide a solution for this problem in the R language.

Vorschläge anzeigen ▾



#### R Solution to Count Divisors Divisible by 3

##### Understanding the problem:

- We need to find divisors of a given integer  $N$ .
- From these divisors, we need to count only those that are also divisible by 3.

##### R code:

###### Code-Snippet

```
count_divisible_by_3 <- function(N) {  
  # Find all divisors of N  
  divisors <- c(1:N)[N %% c(1:N) == 0]  
  
  # Count divisors that are divisible by 3  
  count <- sum(divisors %% 3 == 0)  
  
  return(count)  
}
```

Verwende den Code [mit Vorsicht](#).



##### Explanation:

1. `count_divisible_by_3 function`: Defines a function that takes an integer  $N$  as input.
2. `divisors <- c(1:N)[N %% c(1:N) == 0]`:
  - Creates a vector of numbers from 1 to  $N$ .
  - Checks if each number is a divisor of  $N$  using the modulo operator (`%%`).
  - Extracts only those numbers that are divisors.
3. `count <- sum(divisors %% 3 == 0)`:
  - Checks if each divisor is divisible by 3 using the modulo operator again.
  - Sums the number of divisors that satisfy this condition.
4. `return(count)`: Returns the final count of divisors divisible by 3.

##### Example usage:

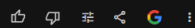
###### Code-Snippet

```
N <- 24  
result <- count_divisible_by_3(N)  
print(result)
```

Verwende den Code [mit Vorsicht](#).



This code will output `3` as there are 3 divisors of 24 that are divisible by 3: 3, 6, and 12.



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