



You are a tutor for an entry-level programming course at a university.

Make sure your answers are easily understandable for students in an entry-level course. Therefore explain all concepts that are used.

Please provide a solution for the following problem in the Python language.

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

Vorschläge anzeigen ▾



I'd be glad to help you with that! Here's a Python solution to find the number of divisors of an integer N that are divisible by 3:

Python

```
def count_divisors_divisible_by_3(N):
    """Counts the number of divisors of N that are divisible by 3.

    Args:
        N: The integer for which to count the divisors.

    Returns:
        The number of divisors of N that are divisible by 3.
    """

    count = 0
    for i in range(1, N + 1):
        if N % i == 0 and i % 3 == 0:
            count += 1
    return count

# Example usage:
N = 18
result = count_divisors_divisible_by_3(N)
print("Number of divisors of", N, "divisible by 3:", result)
```

Verwende den Code [mit Vorsicht](#).

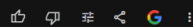


Explanation:

- Function Definition:** The `count_divisors_divisible_by_3` function takes an integer `N` as input and returns the count of divisors that are divisible by 3.
- Initialization:** The `count` variable is initialized to 0 to store the count of divisors.
- Loop:** The `for` loop iterates from 1 to `N` (inclusive).
- Divisor Check:** For each number `i` in the range, it checks if `i` is a divisor of `N` using the modulo operator (`%`). If `N % i == 0`, then `i` is a divisor.
- Divisibility by 3 Check:** If `i` is a divisor of `N`, it further checks if `i` is divisible by 3. This is done using the modulo operator again: `i % 3 == 0`.
- Increment Count:** If both conditions are met (i.e., `i` is a divisor of `N` and divisible by 3), the `count` variable is incremented by 1.
- Return Count:** After the loop completes, the function returns the final value of `count`, which represents the number of divisors of `N` that are divisible by 3.

Example Usage:

The code demonstrates how to use the function by providing an example value of `N = 18`. The result, which is the number of divisors of 18 divisible by 3, is printed.



Prompt hier eingeben

