

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

# Example usage:
N = 18
result = count_divisors_divisible_by_3(N)
print("Number of divisors 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.
- Initialization:** A variable `count` is initialized to 0 to store the count of divisors divisible by 3.
- Iteration:** A `for` loop iterates through all possible divisors of N from 1 to N .
- Divisibility Check:** Inside the loop, the `if` condition checks if the current divisor is a factor of N (using `N % divisor == 0`) and if the divisor is divisible by 3 (using `divisor % 3 == 0`).
- Incrementing Count:** If both conditions are true, it means the current divisor is divisible by 3, so the `count` is incremented by 1.
- Return Value:** 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 will be printed to the console, indicating the number of divisors of 18 that are divisible by 3.

Prompt hier eingeben



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