



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 two positive integers A and B,
find GCD of A and B.

Vorschläge anzeigen ▾



I'd be glad to help you with that! Here's a Python solution to find the GCD (Greatest Common Divisor) of two positive integers A and B:

Python

```
def gcd(a, b):  
    """Finds the greatest common divisor (GCD) of two positive integers.  
  
    Args:  
        a: The first positive integer.  
        b: The second positive integer.  
  
    Returns:  
        The  
        greatest common divisor of a and b.  
    """  
  
    while b != 0:  
        a, b = b, a % b  
    return a  
  
# Example usage:  
a = 12  
b = 24  
result = gcd(a, b)  
print("GCD of", a, "and", b, "is:", result)
```

Verwende den Code [mit Vorsicht](#).



Explanation:

- gcd(a, b) function:** This function takes two positive integers `a` and `b` as input and returns their GCD.
- while b != 0: loop:** This loop continues as long as `b` is not zero.
- a, b = b, a % b:** This line swaps the values of `a` and `b` and calculates the remainder of `a` divided by `b`. The new value of `a` becomes the old value of `b`, and the new value of `b` becomes the remainder.
- return a:** Once the loop terminates, the value of `a` will be the GCD of the original `a` and `b`. The function returns this value.

Example usage:

The code demonstrates how to use the `gcd` function. In this example, `a` is set to 12 and `b` is set to 24. The `gcd` function is called with these values, and the result is printed.

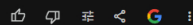
This solution effectively calculates the GCD of two positive integers using the Euclidean algorithm, which is a well-known and efficient method for finding GCDs.

Quellen und ähnliche Inhalte ^ ⓘ

github.com



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