

 ChatGPT 88 GPTs erkunden Python GCD Calculation GCD Calculation in Python ---Finding GCD in Python

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Neuer Chat

Committees Relevant in Ambition. Update Dictionary and Vectors SQL CRUD with Dictionary-Encodir Please consider this programming problem: Given two positive integers A and B, find GCD of A and B. Provide an example solution for the problem in the Python language.

 $\$ Certainly! The task is to find the Greatest Common Divisor (GCD) of two positive integers A and B. The GCD of two numbers is the largest positive integer that divides both A and B without leaving a remainder.

One common algorithm to find the GCD is the Euclidean algorithm. The idea behind this algorithm is that the GCD of two numbers also divides their difference. This leads to the following steps:

- 1. If B=0, then the GCD is A.
- 2. Otherwise, set A to B and B to A%B (the remainder of A divided by B) and repeat the

Here is a Python function implementing this algorithm:

```
def gcd(a, b):
   while b != 0:
      a, b = b, a % b
   return a
# Example usage:
result = gcd(A, B)
```

Explanation of the Code:

- The 'gcd' function takes two arguments 'a' and 'b'.
- It enters a loop that continues until `b` becomes 0.
- Inside the loop, the values of `a` and `b` are updated: `a` is set to `b`, and `b` is set to `a % b`.
- When `b` becomes 0, `a` contains the GCD, and the function returns `a`.

Example:

For A=48 and B=18:

- 48%18 = 12
- 18%12 = 6
- 12%6 = 0

So, the GCD is 6, which is returned and printed as the result.

Output:



This method is efficient and works well even for large integers.

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Team-Arbeitsbereich hinzufügen

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