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Python GCD Calculation
GCD Calculation in Python
Python GCD Function

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Consider the following programming problem:
Given two positive integers A and B,
find GCD of A and B.
Please provide a solution for this problem in the Python language.

You can find the Greatest Common Divisor (GCD) of two positive integers using the Euclidean algorithm. Here's a Python function that implements this approach:

python — Code kopieren

```python
def gcd(a, b):
    while b:
        a, b = b, a % b
    return a

# Example usage:
A = 60
B = 48
print("GCD of", A, "and", B, "is", gcd(A, B))
```

Explanation:

- The function `gcd(a, b)` computes the GCD of `a` and `b` using the Euclidean algorithm.
- The Euclidean algorithm works on the principle that the GCD of two numbers `a` and `b` is the same as the GCD of `b` and `a % b` (where `%` is the modulus operator).
- The process is repeated until `b` becomes 0. At this point, `a` contains the GCD of the original pair of numbers.

Example:

For `A = 60` and `B = 48`:

- First iteration: `a = 60`, `b = 48`. `a % b = 60 % 48 = 12`
- Second iteration: `a = 48`, `b = 12`. `a % b = 48 % 12 = 0`
- Third iteration: `a = 12`, `b = 0`. The loop ends, and `a` (which is 12) is the GCD.

The output will be:

csharp — Code kopieren

```
GCD of 60 and 48 is 12
```

This function is efficient and works even for very large integers.