NumPy GCD Greatest Common Denominator

‹ Previous Next ›

Finding GCD (Greatest Common Denominator)

The GCD (Greatest Common Denominator), also known as HCF (Highest Common Factor) is the biggest number that is a common factor of both of the numbers.

Example

Find the HCF of the following two numbers:

```
import numpy as np

num1 = 6
num2 = 9

x = np.gcd(num1, num2)

print(x)
```

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Returns: `3` because that is the highest number both numbers can be divided by (6/3=2 and 9*3=3).

Finding GCD in Arrays

To find the Highest Common Factor of all values in an array, you can use the `reduce()` method.

The `reduce()` method will use the ufunc, in this case the `gcd()` function, on each element, and reduce the array by one dimension.

Example

Find the GCD for all of the numbers in following array:

```
import numpy as np

arr = np.array([20, 8, 32, 36, 16])

x = np.gcd.reduce(arr)

print(x)
```

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Returns: `4` because that is the highest number all values can be divided by.

‹ Previous Next ›

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