

Please consider this programming problem:

Given a positive integer N. Calculate the Fibonacci series till the number N. If N is a part of the series, include N as well.

Provide an example solution for the problem in the R language.

Vorschläge anzeigen ▾



#### Code-Snippet

```
fibonacci_series <- function(N) {  
  # Initialize the first two Fibonacci numbers  
  fib <- c(0, 1)  
  
  # Generate the series until the next number exceeds N  
  while (fib[length(fib)] < N) {  
    fib <- c(fib, fib[length(fib) - 1] + fib[length(fib)])  
  }  
  
  # Include N if it's part of the series  
  if (N %in% fib) {  
    fib <- c(fib, N)  
  }  
  
  return(fib)  
}  
  
# Example usage  
N <- 20  
result <- fibonacci_series(N)  
print(result)
```

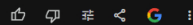
Verwende den Code [mit Vorsicht](#).



This R code effectively calculates the Fibonacci series up to the given positive integer N, including N if it is part of the series. Here's a breakdown of how it works:

- 1. Initialization:** The function `fibonacci_series` takes the input N as a parameter. It initializes the first two Fibonacci numbers, 0 and 1, and stores them in the `fib` vector.
- 2. Series Generation:** The `while` loop iteratively calculates the next Fibonacci number by adding the previous two numbers. It continues until the calculated number exceeds N.
- 3. N Inclusion:** After the loop, it checks if N is part of the series using the `%in%` operator. If it is, N is appended to the `fib` vector.
- 4. Return:** Finally, the function returns the `fib` vector containing the Fibonacci series up to N.

In the example usage, we set N to 20 and call the `fibonacci_series` function. The result is printed, which will be the Fibonacci series up to and including 20.



Prompt hier eingeben



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