

J

I'm working on a Python programming problem. The current program below is not working well. Can you help by giving a hint? Below I first provide the problem description and then the current buggy program.

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.

Buggy Program:

```
class P2_Python_buggy:

    def fibonacci_index(number):
        if number < 0:
            raise ValueError("Keine gültige Fibonacci-Zahl")

        index = 1
        fib = 1
        f1 = 1
        f2 = 0

        while fib <= number:
            if fib == number:
                return index

            f1 = fib
            fib = f1 + f2
            f2 = f1

            index += 1

        raise ValueError("Keine gültige Fibonacci-Zahl")

    def main():
        number = int(input("Bitte geben Sie eine Zahl ein!"))

        try:
            print(f"Die Zahl ist Zahl {P2_Python_buggy.fibonacci_index(number)} der Fibonacci-Folge.")
        except ValueError as e:
            print(e)

if __name__ == "__main__":
    P2_Python_buggy.main()
```

(1) Can you describe the bug(s) in this program and the required fixes?
(2) Can you provide a concise single-sentence hint about one bug in this program?
The hint should not be too detailed as I want to think about the fixes by myself.
However, the hint should not be too abstract, as I need some help.

Vorschläge anzeigen ▾ 🔊

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I'd be glad to help you with the Python programming problem.

Bug Analysis and Fixes:

- Incorrect Comparison:** The line `if fib == number:` uses the assignment operator (`=`), which assigns the value of `number` to `fib`. This is not a comparison. You should use the equality operator (`==`) to compare the values.
- Missing Base Cases:** The function `fibonacci_index` doesn't handle the base cases of 0 and 1. The Fibonacci sequence starts with 0 and 1.

Concise Hint:

The hint is: "Check the comparison operator and base cases in the `fibonacci_index` function."

Corrected Code:

```
Python

class P2_Python_buggy:
    def fibonacci_index(number):
        if number < 0:
            raise ValueError("Keine gültige Fibonacci-Zahl")

        if number == 0 or number == 1:
            return number

        index = 2
        f1 = 1
        f2 = 0
        fib = 1

        while fib <= number:
            if fib == number:
                return index

            f1 = fib
            fib = f1 + f2
            f2 = f1

            index += 1

        raise ValueError("Keine gültige Fibonacci-Zahl")

    def main():
        number = int(input("Bitte geben Sie eine Zahl ein!"))
```

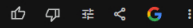
```
try:
    print(f"Die Zahl ist {Zahl} {P2_Python_buggy.fibonacci_index(Zahl)}")
except ValueError as e:
    print(e)

if __name__ == "__main__":
    P2_Python_buggy.main()
```

Verwende den Code [mit Vorsicht](#).



With these corrections, the program should now correctly calculate the Fibonacci index for a given positive integer.



Prompt hier eingeben



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