

Currently I'm working on a Python programming problem. The current program below contains some bugs. Can you help in fixing these bugs with as few changes as possible? Below I first provide the problem description and then the buggy program.

Given an integer N, find the number of divisors of N that are divisible by 3.

Buggy Program:

```
class P3_Python_buggy:

    def find_divisors_divisible_by_3(N):
        count = 0

        for i in range(1, N + 1):
            if N % i != 0:
                if i % 3 == 0:
                    count += 1

        return count

    def main():
        n = 36 # Beispielwert
        count = P3_Python_buggy.find_divisors_divisible_by_3(n)
        print(f"Number of divisors of {n} that are divisible by 3: {count}")

if __name__ == "__main__":
    P3_Python_buggy.main()
```

Can you fix the above buggy program? Modify only the code within the function; make sure that you make minimal possible changes needed to fix the program.

Certainly! The issue in the provided code is with the logic inside the loop. The code currently checks for `N % i != 0` before checking if `i % 3 == 0`. This means it is incrementing the count when `i` is not a divisor of `N` and is divisible by 3, which is the opposite of what is intended.

To fix the program with minimal changes, you should modify the condition to first check if `i` is a divisor of `N`, and then check if `i` is divisible by 3. Here's the corrected code:

```
python Code kopieren

class P3_Python_buggy:

    def find_divisors_divisible_by_3(N):
        count = 0

        for i in range(1, N + 1):
            if N % i == 0: # Check if i is a divisor of N
                if i % 3 == 0: # Check if that divisor is divisible by 3
                    count += 1

        return count

    def main():
        n = 36 # Beispielwert
        count = P3_Python_buggy.find_divisors_divisible_by_3(n)
        print(f"Number of divisors of {n} that are divisible by 3: {count}")

if __name__ == "__main__":
    P3_Python_buggy.main()
```

Explanation of the changes:

- 1. Changed `if N % i != 0` to `if N % i == 0` to ensure that `i` is a divisor of `N`.
- 2. The second condition `if i % 3 == 0` remains the same, as it correctly checks if the divisor `i` is divisible by 3.

With these minimal changes, the program should now correctly count the number of divisors of `N` that are divisible by 3.