

I'm working on a Python programming problem. The current program below is not working well. Can you help in fixing this program with as few changes as possible? Below I first provide the problem description and then the current 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 with the current program is in the logic of the `find_divisors_divisible_by_3` function. Specifically, the `if` condition is incorrect. The program checks `if N % i != 0`, which means it's only considering numbers that are not divisors of `N`. Instead, it should be checking for divisors of `N` (i.e., `N % i == 0`). Also, the condition for checking divisibility by 3 should be within the correct logic block.

Here's the corrected version of the function with minimal changes:

```
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 the divisor is divisible by 3
                    count += 1

        return count

    def main():
        n = 36 # Example value
        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 Changes:

- The condition `if N % i != 0:` was changed to `if N % i == 0:` to correctly identify divisors of `N`.
- The inner `if i % 3 == 0:` remains the same, as it correctly checks if the divisor is divisible by 3.

This minimal change fixes the logic while keeping the overall structure of the code intact.