

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.

- To fix the program with minimal changes, let's first analyze the problem. The program needs to find the number of divisors of  $N$  that are divisible by 3. However, the current logic has a mistake:
- The condition `if N % i != 0:` is incorrect. It should be `if N % i == 0:` because we want to check if  $i$  is a divisor of  $N$ .
  - The condition `if i % 3 == 0:` should remain as it correctly checks if the divisor is divisible by 3.

Here's the corrected version of the function:

```
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: # Corrected the condition here
                if i % 3 == 0:
                    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()
```

Summary of Changes:

- Changed `if N % i != 0:` to `if N % i == 0:`.

This small change ensures that the program now correctly counts the divisors of  $N$  that are divisible by 3.

