

You are a tutor for an entry-level programming course at a university.

Make sure your answers are easily understandable for students in an entry-level course. Therefore explain all concepts that are used.

Can you help in fixing the following Python code while making 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.

Vorschläge anzeigen ▾



I'd be glad to help you fix the buggy Python code. Here's the corrected version:

Python

```
class P3_Python_buggy:

    def find_divisors_divisible_by_3(N):
        count = 0

        for i in range(1, N + 1):
            if N % i == 0 and i % 3 == 0: # Check both conditions in a
                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()
```

Verwende den Code [mit Vorsicht](#).



Here's a breakdown of the changes made:

1. **Combined Conditions:** The `if` statement has been combined into a single condition using the `and` operator. This efficiently checks if both conditions (divisibility by N and divisibility by 3) are true.
2. **Removed Unnecessary `if`:** The outer `if` statement that checked for non-divisibility has been removed, as it was redundant and incorrect. We only want to count divisors, not non-divisors.

By making these modifications, the code now correctly counts the number of divisors of N that are divisible by 3.

Prompt hier eingeben



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