Assigmnet-7

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Batch-38

Task 1: Fixing Syntax Errors

Scenario

You are reviewing a Python program where a basic function definition contains a syntax error.

Python:

```
Def add(a,b)
    return a+b
```

Requirements

- **Provide a Python function add(a, b) with a missing colon**
- **Use an AI tool to detect the syntax error**
- **Allow AI to correct the function definition**
- **Observe how AI explains the syntax issue**

Expected Output

- **Corrected function with proper syntax**
- **Syntax error resolved successfully**
- **AI-generated explanation of the fix**

Corrected code:

```
def add(a,b):
    return a+b
```

Task 2: Debugging Logic Errors in Loops

Scenario

You are debugging a loop that runs infinitely due to a logical mistake.

```
def count_down(n):
    while n>=0:
    print(n)
    n+=1
```

Requirements

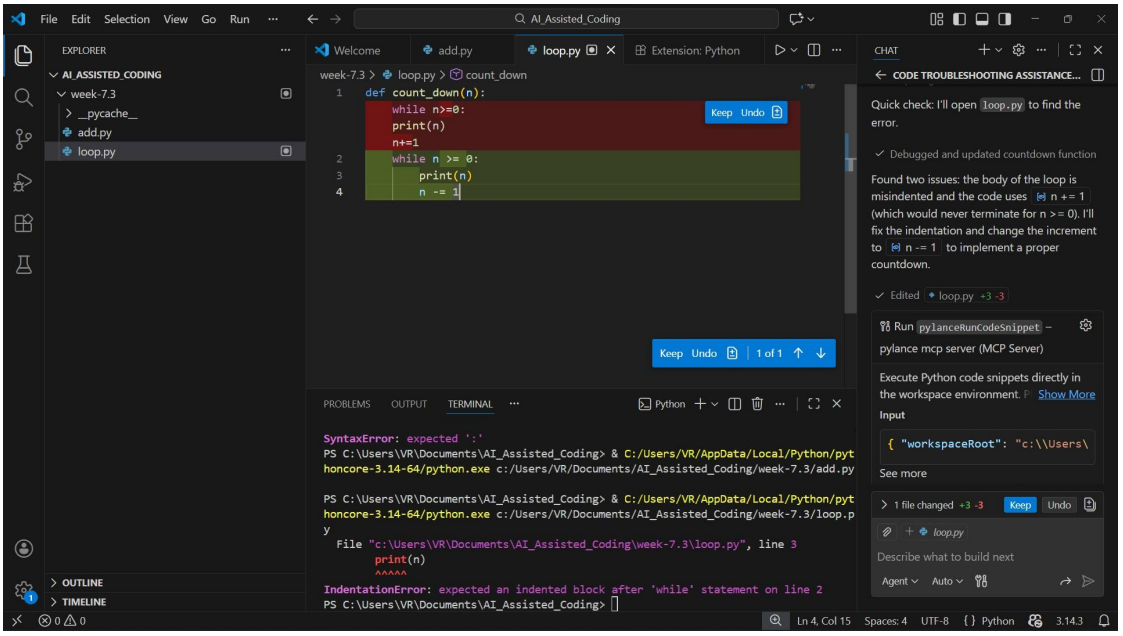
- **Provide a loop with an increment or decrement error**
- **Use AI to identify the cause of infinite iteration**
- **Let AI fix the loop logic**
- **Analyze the corrected loop behavior**

Expected Output

- **Infinite loop issue resolved**
- **Correct increment/decrement logic applied**
- **AI explanation of the logic error**

Corrected code:

```
def count_down(n):
    while n >= 0:
        print(n)
        n -= 1
```



Task 3: Handling Runtime Errors (Division by Zero)

Scenario

A Python function crashes during execution due to a division by zero error.

```
def divide(a,b):
        return a/b
print(divide(10/0))
```

Requirements

- **Provide a function that performs division without validation**
- **Use AI to identify the runtime error**
- **Let AI add try-except blocks for safe execution**
- **Review AI's error-handling approach**

Expected Output

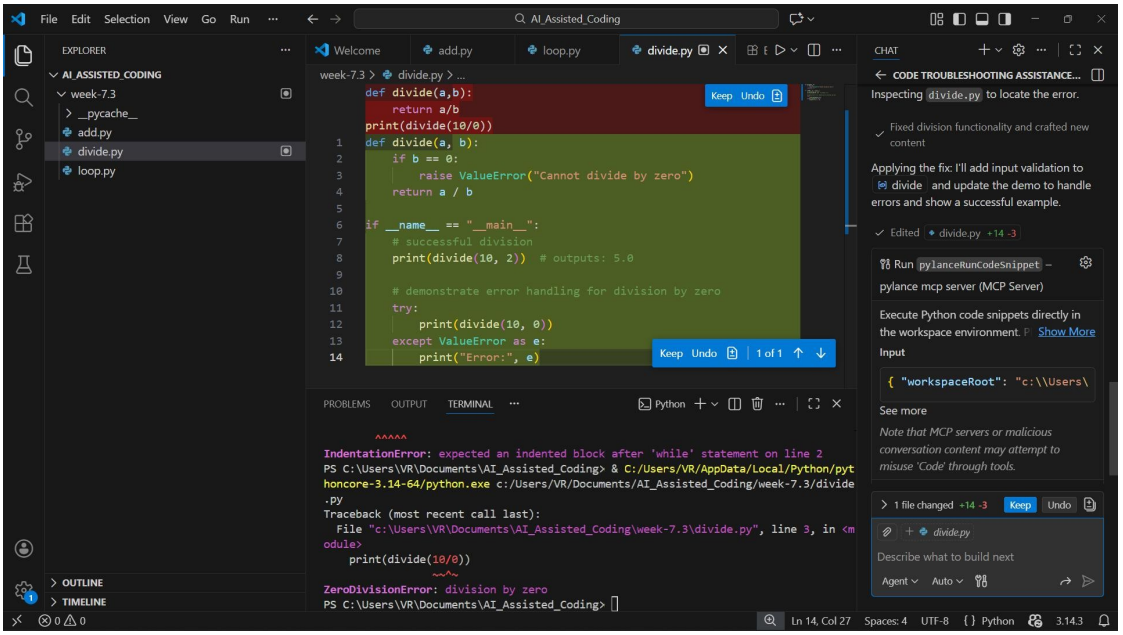
- **Function executes safely without crashing**
- **Division by zero handled using try-except**
- **Clear AI-generated explanation of runtime error handling**

Corrected Code:

```
def divide(a,
    b): if b ==
    0:
        raise ValueError("Cannot divide by zero")
    return a / b

if __name__ == "__
```

```
    # demonstrate error handling for division by
    zero try:
        print(divide(10, 0))
    except ValueError as e:
        print("Error:", e)
```



Task 4: Debugging Class Definition Errors

Scenario

You are given a faulty Python class where the constructor is incorrectly defined.

```
class Rectangle:
        def __init__(length,width):
                self.length=length
                self.width=width
```

Requirements

- **Provide a class definition with missing self-parameter**
- **Use AI to identify the issue in the __init__() method**

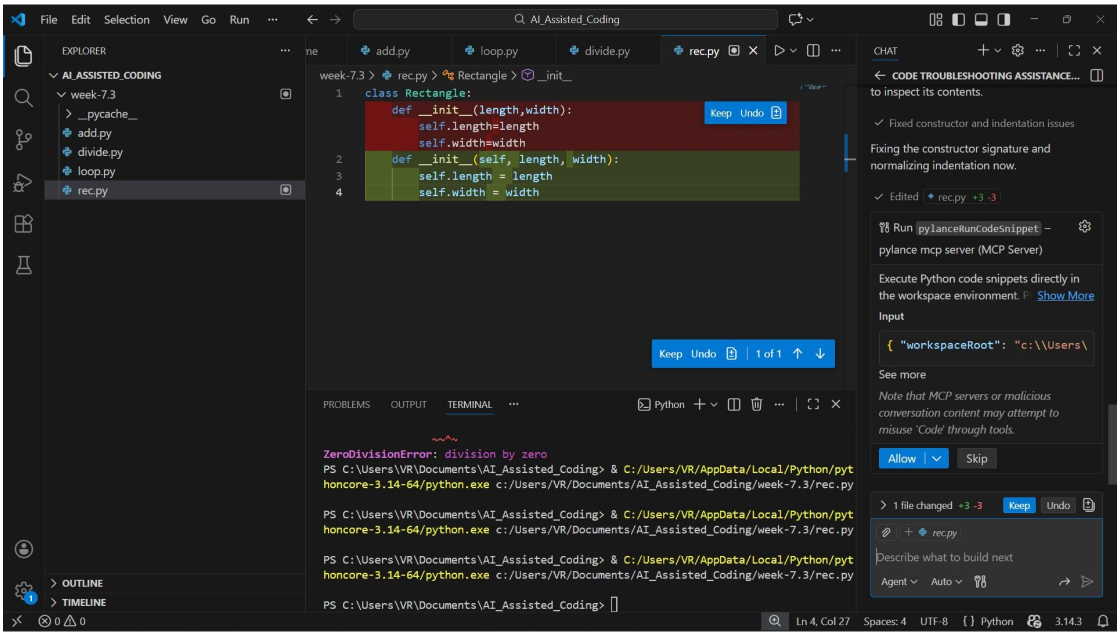
- Allow AI to correct the class definition
- Understand why self is required

Expected Output

- Corrected __init__() method
- Proper use of self in class definition
- AI explanation of object-oriented error

Corrected code:

```
class Rectangle:
    def ______init___(self,
        length, width): self.length
        = length self.width = width
```



Task 5: Resolving Index Errors in Lists

Scenario

A program crashes when accessing an invalid index in a list.

Requirements

numbers=[1,2,3]
print(numbers[5])

- Provide code that accesses an out-of-range list index
- Use AI to identify the Index Error
- Let AI suggest safe access methods
- Apply bounds checking or exception handling

Expected Output

- Index error resolved
- Safe list access logic implemented
- AI suggestion using length checks or exception handling

Corrected code:

```
numbers = [1, 2, 3]


def get_number(nums,
    idx): try:
        return nums[idx]
    except IndexError:
        raise IndexError(f"Index {idx} out of
```

```
if __name__ == "__main__":
    print(get_number(numbers, 2)) #
    outputs: 3 try:
        print(get_number(numbers,
    5)) except IndexError as e:
```