Lab Assignment-7.5

Name: N.Paul Benjamin

Hallticket:2303A51116

Batch:03

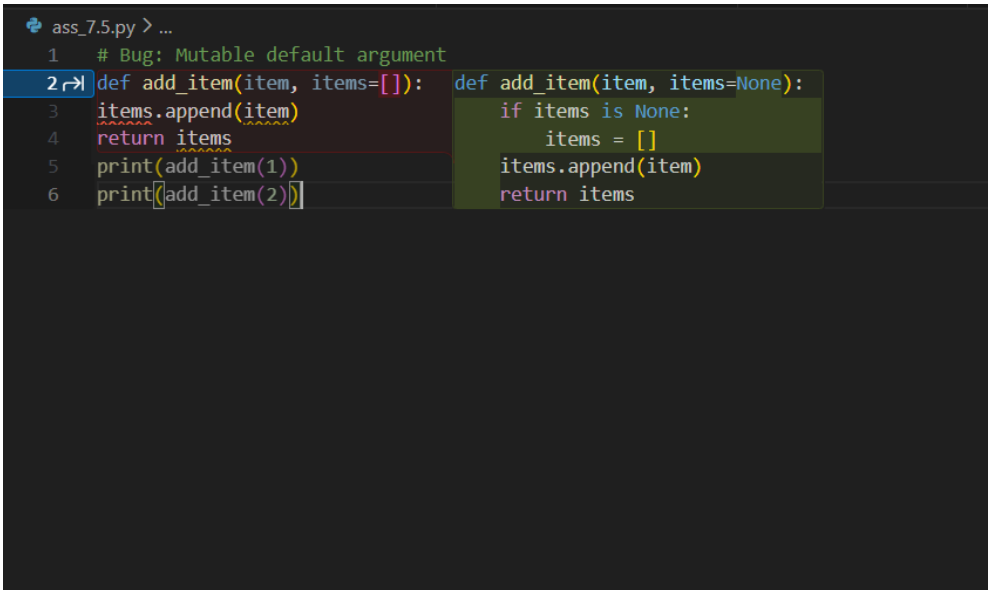
Task 1 (Mutable Default Argument – Function Bug)

Task: Analyze given code where a mutable default argument causes unexpected behavior. Use AI to fix it.

```
# Bug: Mutable default argument
def add_item(item, items=[]):
items.append(item)
return items
print(add_item(1))
print(add_item(2))
```

Expected Output: Corrected function avoids shared list bug.

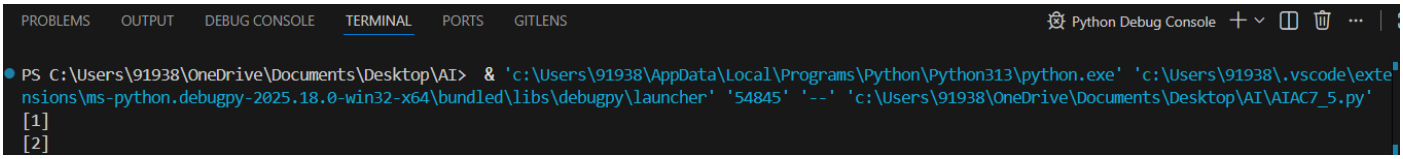
Screenshots:



assg_07.py > ...

```python
def add_item(item, items=None):
    if items is None:
        items = []
    items.append(item)
    return items
print(add_item(1))
print(add_item(2))
```

output:



Task 2 (Floating-Point Precision Error)

Task: Analyze given code where floating-point comparison fails.

Use AI to correct with tolerance.

Bug: Floating point precision issue

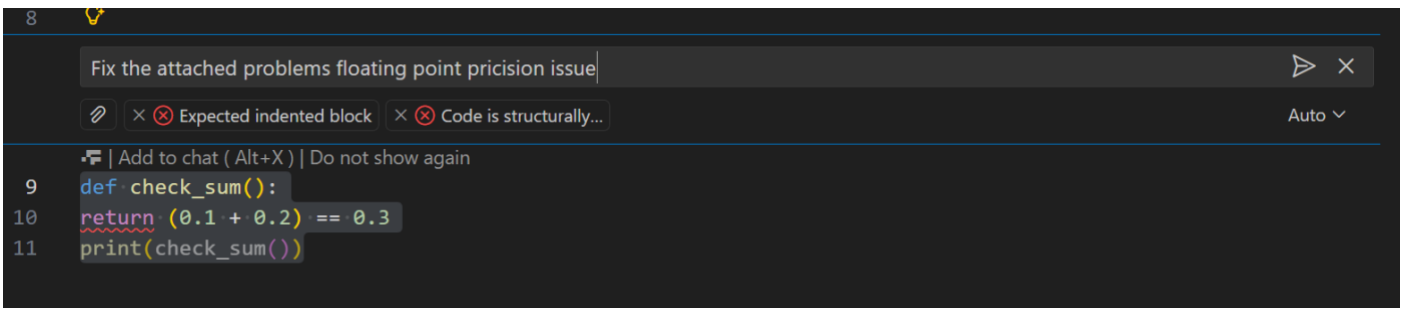
def check_sum():

return (0.1 + 0.2) == 0.3

print(check_sum())

Expected Output: Corrected function

Screenshots:



```python
import math

def check_sum():
    return math.isclose(0.1 + 0.2, 0.3)
print(check_sum())
```

output:

```
PS C:\Users\91938\OneDrive\Documents\Desktop\AI>  c:; cd 'c:\Users\91938\OneDrive\Documents\Desktop\AI'; & 'c:\Users\91938\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\91938\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '60525' '--' 'C:\Users\91938\OneDrive\Documents\Desktop\AI\AIAC7_5.py'
True
PS C:\Users\91938\OneDrive\Documents\Desktop\AI>
```

Task 3 (Recursion Error – Missing Base Case)

Task: Analyze given code where recursion runs infinitely due to

missing base case. Use AI to fix.

Bug: No base case

def countdown(n):

print(n)

return countdown(n-1)

countdown(5)

Expected Output : Correct recursion with stopping condition.

Screenshots:

```
14
15    def countdown(n):
16        if n <= 0:
17            return
18        print(n)
19        return countdown(n-1)
20    countdown(5)
```

output:

```
PS C:\Users\91938\OneDrive\Documents\Desktop\AI>  & 'c:\Users\91938\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\91938\.vscode\exte
nsions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '57677' '--' 'c:\Users\91938\OneDrive\Documents\Desktop\AI\AIAC7_5.py'
5
4
3
2
1
PS C:\Users\91938\OneDrive\Documents\Desktop\AI>
```

Task 4 (Dictionary Key Error)

Task: Analyze given code where a missing dictionary key causes

error. Use AI to fix it.

Bug: Accessing non-existing key

def get_value():

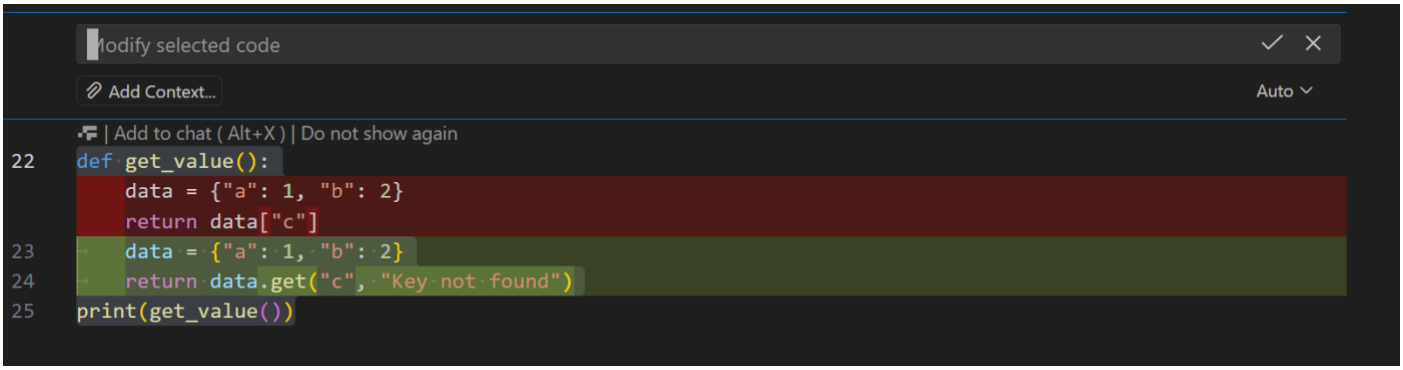
data = {"a": 1, "b": 2}

return data["c"]

print(get_value())

Expected Output: Corrected with .get() or error handling.

Screenshots:



```
21
22  def get_value():
23      data = {"a": 1, "b": 2}
24      return data.get("c", "Key not found")
25  print(get_value())
```

output:

```
1
PS C:\Users\91938\OneDrive\Documents\Desktop\AI>  c:; cd 'c:\Users\91938\OneDrive\Documents\Desktop\AI'; & 'c:\Users\91938\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\91938\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '52379' '--' 'c:\Users\91938\OneDrive\Documents\Desktop\AI\AIAC7_5.py'
Key not found
PS C:\Users\91938\OneDrive\Documents\Desktop\AI>
```

Task 5 (Infinite Loop – Wrong Condition)

Task: Analyze given code where loop never ends. Use AI to detect

and fix it.

Bug: Infinite loop

def loop_example():

i = 0

while i < 5:

print(i)

Expected Output: Corrected loop increments i.

Screenshots:

```
27
28  def loop_example():
29      i = 0
30      while i < 5:
31          print(i)
    →|      i += 1
```

```
29  def loop_example():
30      i = 0
31      while i < 5:
32          print(i)
33          i += 1
34  loop_example()
```

output:

```
PS C:\Users\91938\OneDrive\Documents\Desktop\AI>  c:; cd 'c:\Users\91938\OneDrive\Documents\Desktop\AI'; & 'c:\Users\91938\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\91938\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '58963' '--' 'c:\Users\91938\OneDrive\Documents\Desktop\AI\AIAC7_5.py'
0
1
2
3
4
```

Task 6 (Unpacking Error – Wrong Variables)

Task: Analyze given code where tuple unpacking fails. Use AI to

fix it.

Bug: Wrong unpacking

a, b = (1, 2, 3)

Expected Output: Correct unpacking or using _ for extra values.

Screenshots:

```
36
37  a, b, _ = (1, 2, 3)
38  print(a, b)
```

output:

```
PS C:\Users\91938\OneDrive\Documents\Desktop\AI>  c:; cd 'c:\Users\91938\OneDrive\Documents\Desktop\AI'; & 'c:\Users\91938\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\91938\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '55028' '--' 'c:\Users\91938\OneDrive\Documents\Desktop\AI\AIAC7_5.py'
1 2
PS C:\Users\91938\OneDrive\Documents\Desktop\AI>
```

Task 7 (Mixed Indentation – Tabs vs Spaces)

Task: Analyze given code where mixed indentation breaks

execution. Use AI to fix it.

Bug: Mixed indentation

def func():

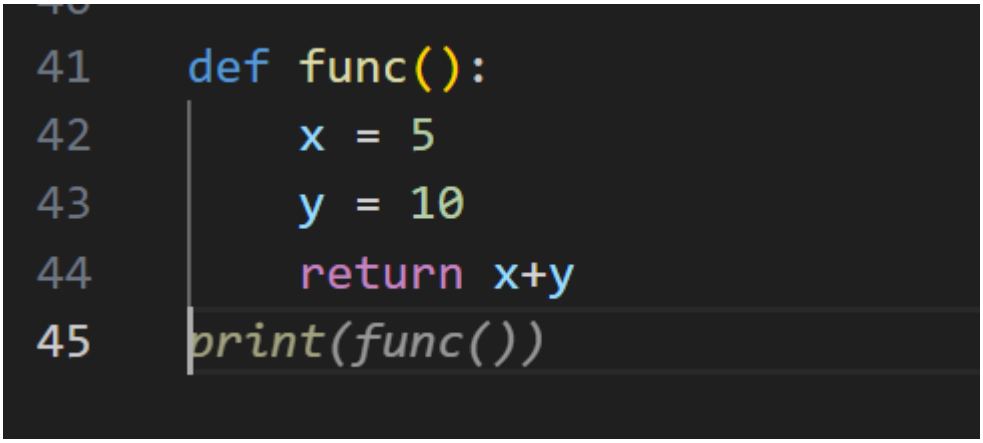
x = 5

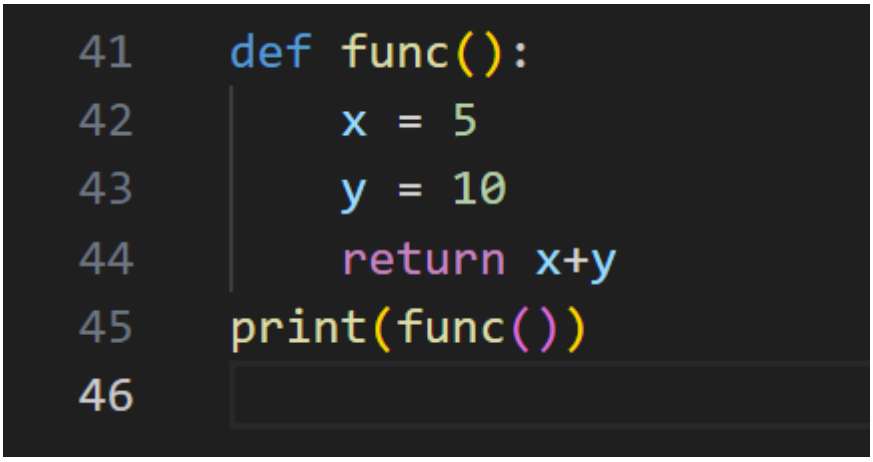
y = 10

return x+y

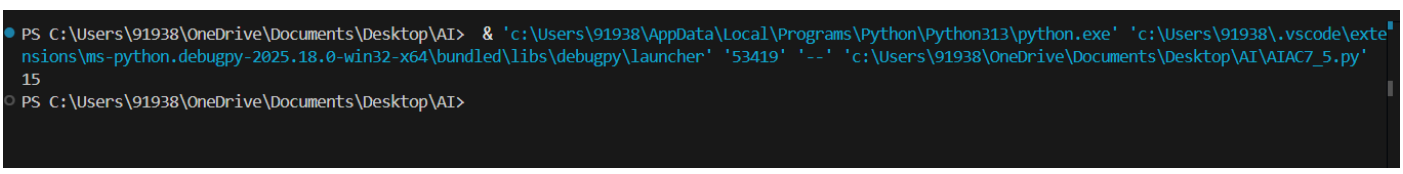
Expected Output : Consistent indentation applied.

Screenshots:





output:



Task 8 (Import Error – Wrong Module Usage)

Task: Analyze given code with incorrect import. Use AI to fix.

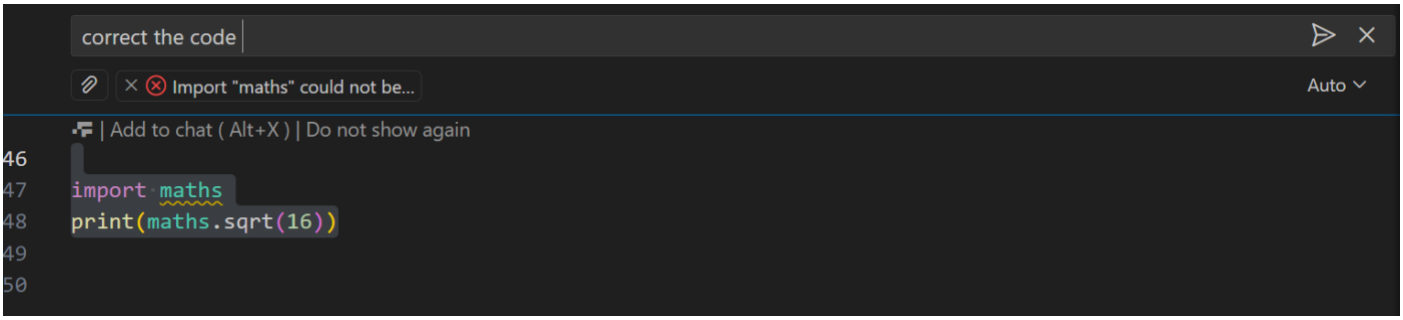
Bug: Wrong import

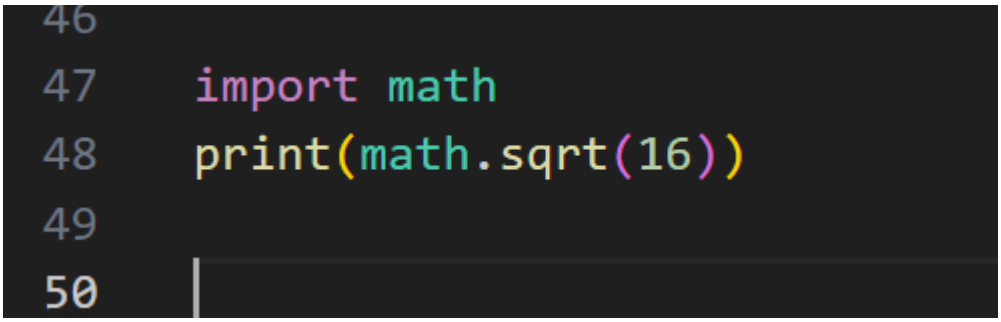
import maths

print(maths.sqrt(16))

Expected Output: Corrected to import math

Screenshots:





output: