Assignment -7.5

Name: Saisharan

Ht.no:2303A51434 **Bt.no:21**

Task 1 (Mutable Default Argument – Function Bug)

Task: Analyze given code where a mutable default argument cause

unexpected behavior. Use AI to fix it.

# Bug: Mutable default argument

def add_item(item, items=[]):

items.append(item)

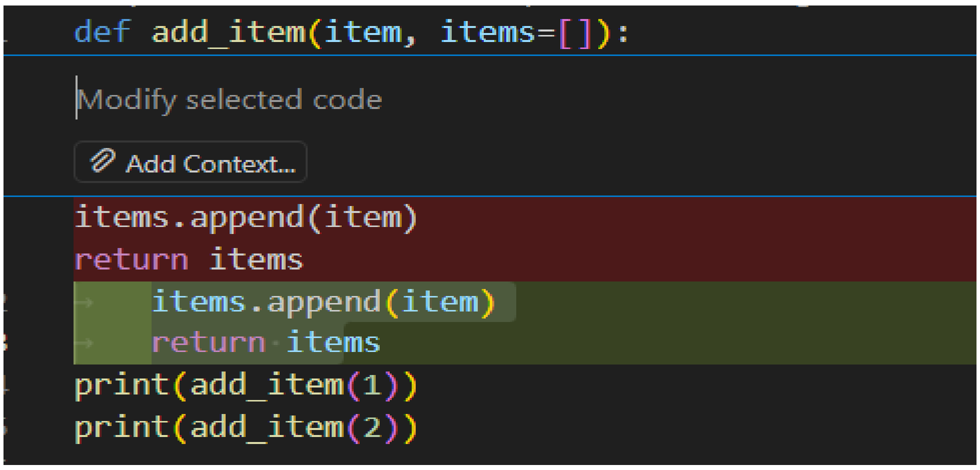
return items

print(add_item(1))

print(add_item(2))

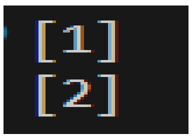
Expected Output: Corrected function avoids shared list bug.

Code:



```
def add_item(item, items=[]):
    Modify selected code
    Add Context...
items.append(item)
return items
    items.append(item)
    return items
print(add_item(1))
print(add_item(2))
```

Output:



```
[1]
[2]
```

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

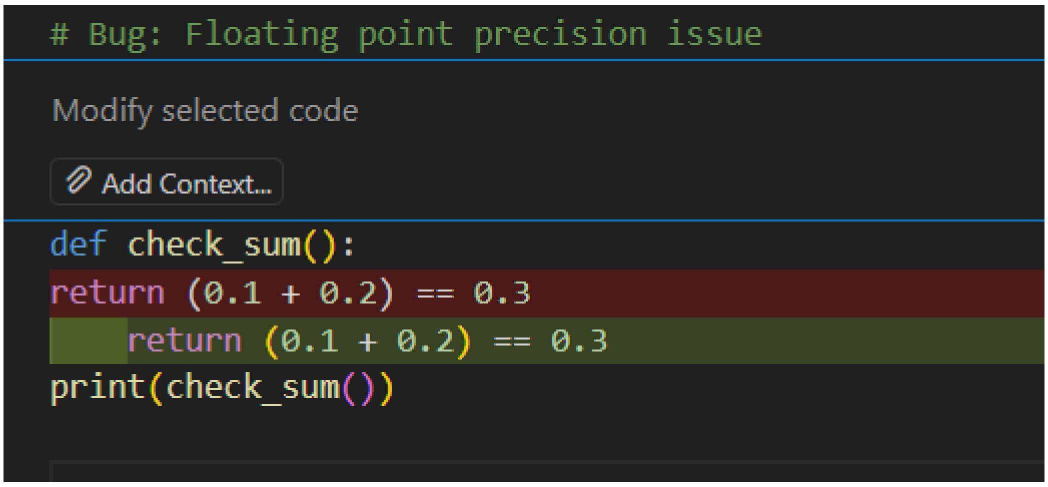
def check_sum():

return (0.1 + 0.2) == 0.3

print(check_sum())

Expected Output: Corrected function

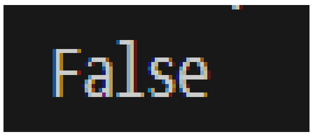
Code:



```
# Bug: Floating point precision issue
```

```
def check_sum():
return (0.1 + 0.2) == 0.3
    return (0.1 + 0.2) == 0.3
print(check_sum())
```

Output:



```
False
```

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):

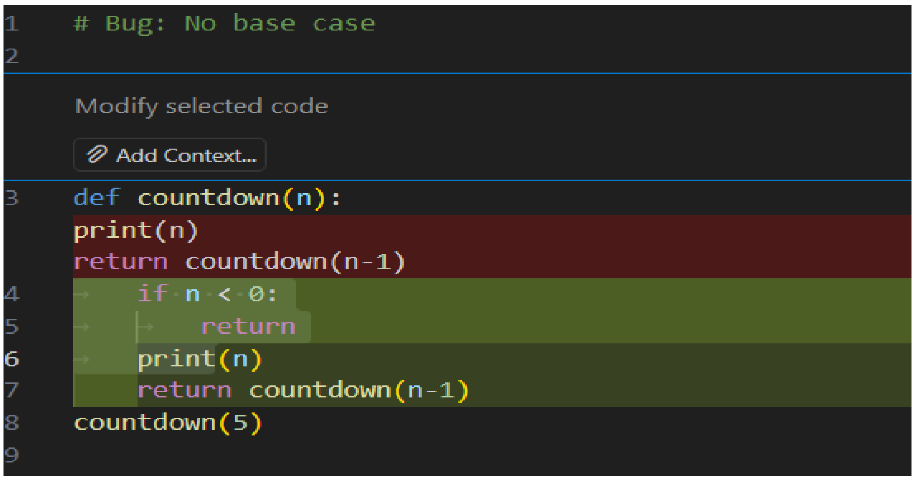
print(n)

return countdown(n-1)

countdown(5)

Expected Output : Correct recursion with stopping condition.

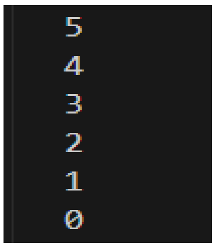
Code:



```
# Bug: No base case

def countdown(n):
print(n)
return countdown(n-1)
    if n < 0:
        return
    print(n)
    return countdown(n-1)
countdown(5)
```

Output:



```
5
4
3
2
1
0
```

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():

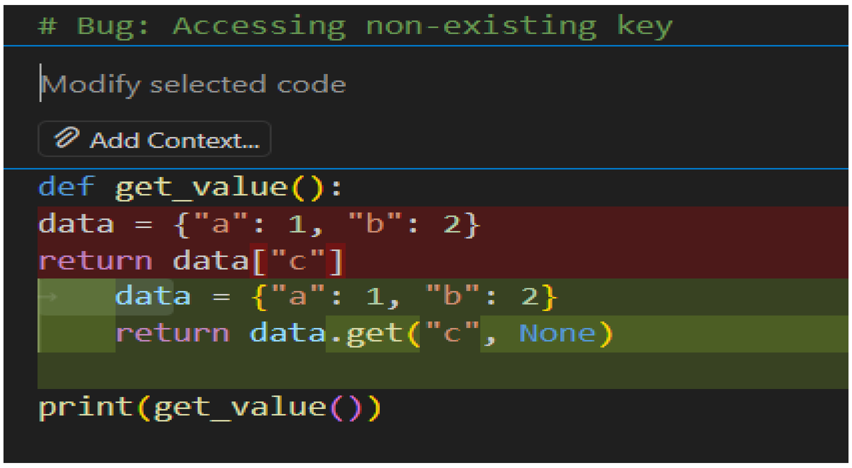
data = {"a": 1, "b": 2}

return data["c"]

print(get_value())

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

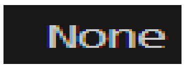
Code:



```
# Bug: Accessing non-existing key
Modify selected code
Add Context...
def get_value():
data = {"a": 1, "b": 2}
return data["c"]
    data = {"a": 1, "b": 2}
    return data.get("c", None)

print(get_value())
```

Output:



```
None
```

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():

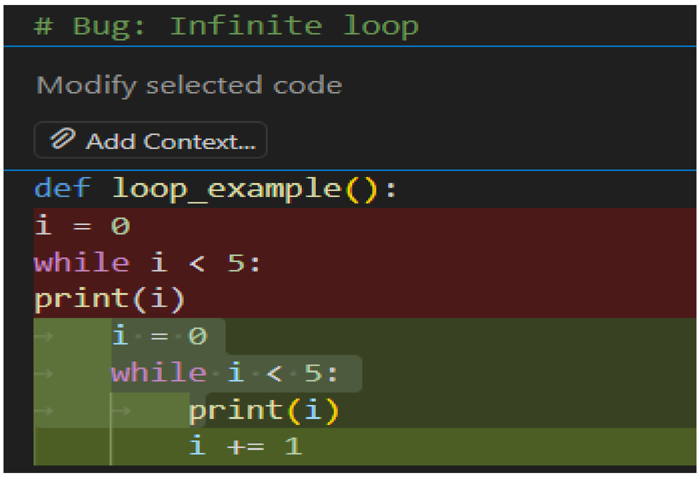
i = 0

while i < 5:

print(i)

Expected Output: Corrected loop increments i.

Code:



```
# Bug: Infinite loop
Modify selected code
Add Context...
def loop_example():
i = 0
while i < 5:
print(i)
    i = 0
    while i < 5:
        print(i)
        i += 1
```

Task 6 (Unpacking Error – Wrong Variables)

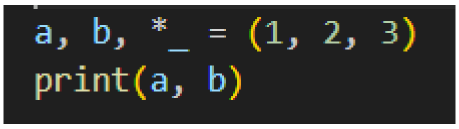
Task: Analyze given code where tuple unpacking fails. Use AI to fix it.

# Bug: Wrong unpacking

a, b = (1, 2, 3)

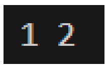
Expected Output: Correct unpacking or using _ for extra values.

Code:



```
a, b, *_ = (1, 2, 3)
print(a, b)
```

Output:



```
1 2
```

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():

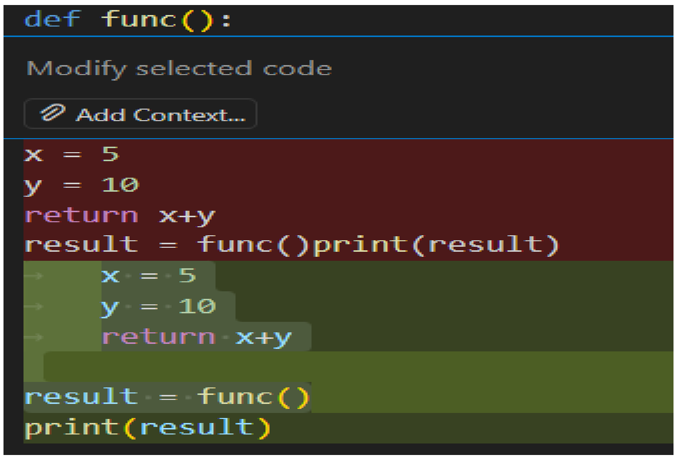
x = 5

y = 10

return x+y

Expected Output : Consistent indentation applied.

Code:

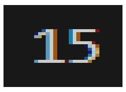


```
def func():
```

```
x = 5
y = 10
return x+y
result = func()print(result)
    x = 5
    y = 10
    return x+y

result = func()
print(result)
```

Output:



```
15
```

Task 8 (Import Error – Wrong Module Usage)

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

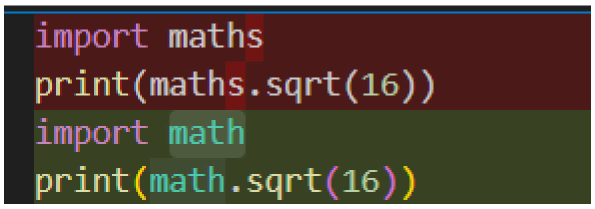
# Bug: Wrong import

import maths

print(maths.sqrt(16))

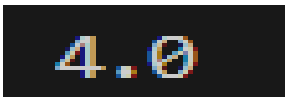
Expected Output: Corrected to import math

Code:



```
import maths
print(maths.sqrt(16))
import math
print(math.sqrt(16))
```

Output:



```
4.0
```