COURSE: AI ASSISTED CODING

Lab 7: Error Debugging with AI: Systematic approaches to finding

NAME: PRAVALIKA MUTHOJU

BATCH : 34

BRANCH :CSE(AIML)

Task 1 – Runtime Error Due to Invalid Input Type

• A Python program accepts user input and performs arithmetic operations. However, the program throws a runtime error because the input is treated as a string instead of a numeric type.

Example (Buggy Code):

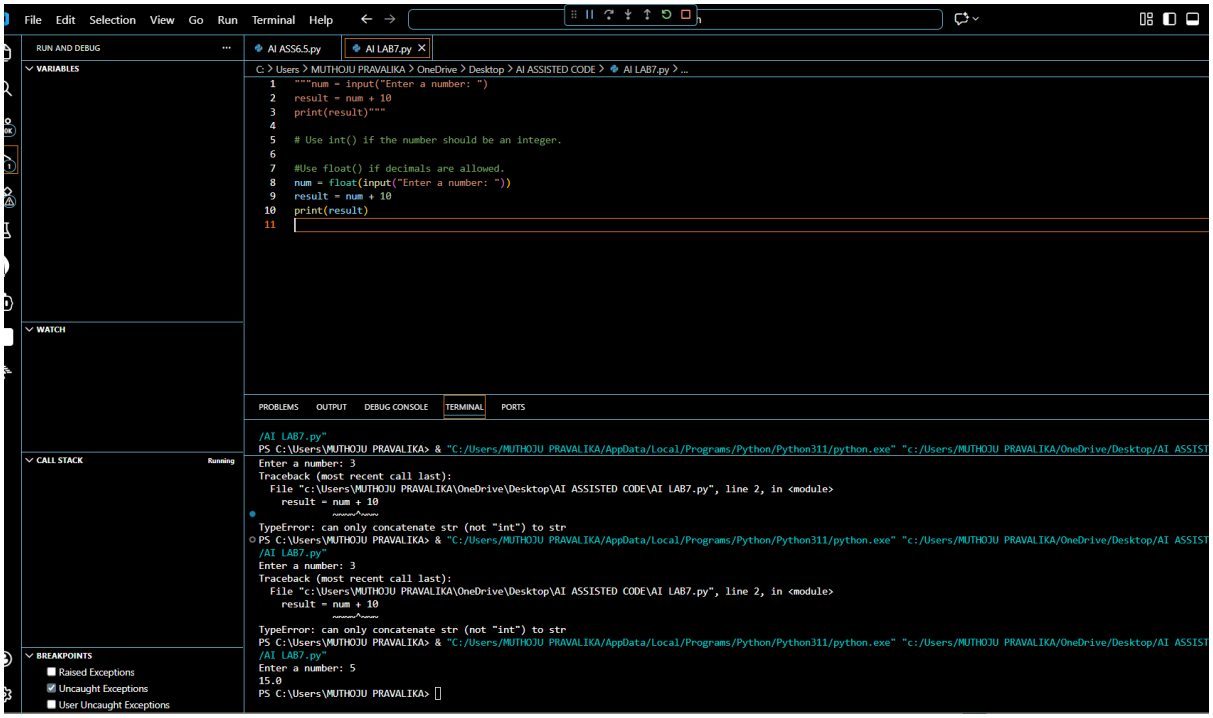
```
num = input("Enter a number: ")
result = num + 10
print(result)
```

• **Task:**

Use AI tools to identify the cause of the runtime error and modify the program so it executes correctly.

Expected Output -1:

• AI converts the input to the appropriate numeric type and eliminates the runtime error.



Task Description

Task 2 – Incorrect Function Return Value

A function is designed to calculate the square of a number, but it does not return the computed result properly.

Example (Buggy Code):

def square(n):

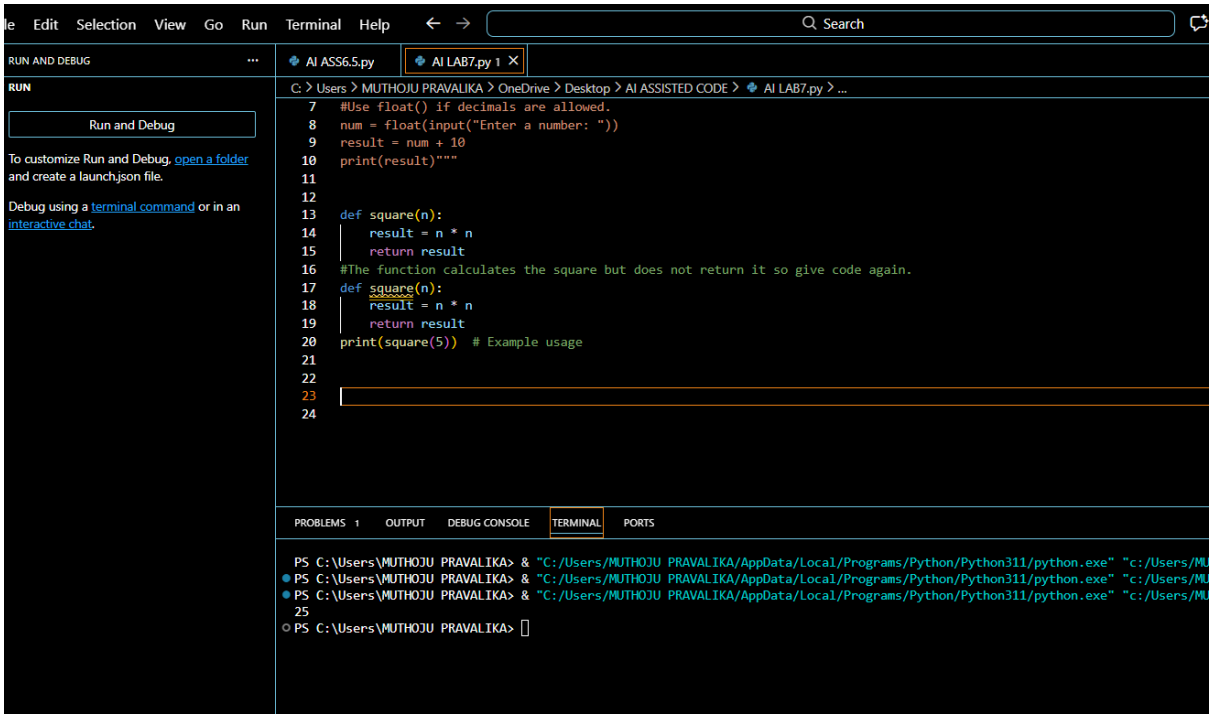
result = n * n

Task:

Use AI assistance to analyze the function and ensure the correct value is returned.

Expected Output -2:

AI fixes the missing return statement and the function returns the correct output.



Task Description

Task 3 – IndexError in List Traversal

A Python program iterates over a list using incorrect index limits,

causing an IndexError.

Example (Buggy Code):

numbers = [10, 20, 30]

for i in range(0, len(numbers)+1):

print(numbers[i])

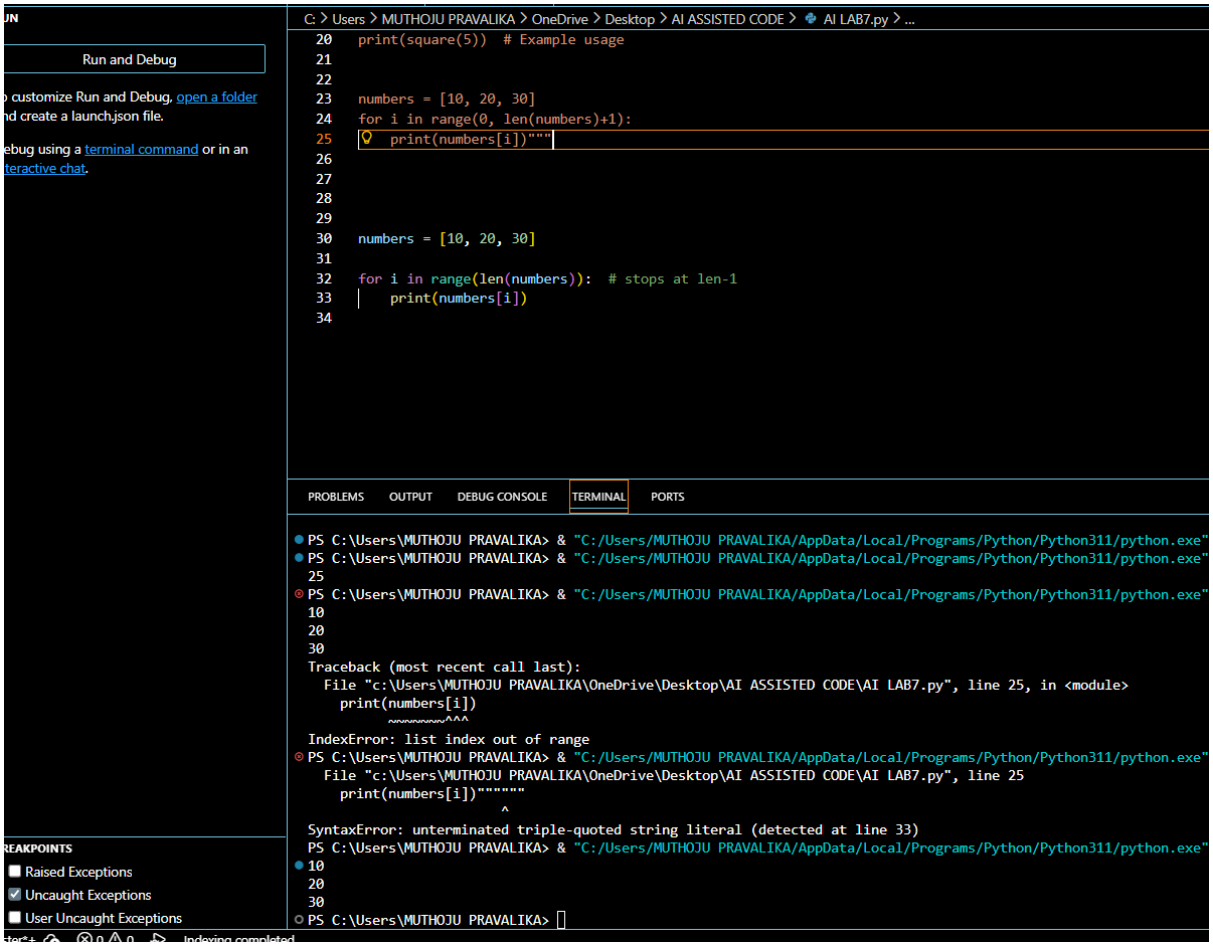
Task:

Use AI to identify the incorrect loop boundary and correct the iteration

logic.

Expected Output -3:

AI fixes the loop condition and prevents out-of-range list access.



Task 4 – Uninitialized Variable Usage

A program uses a variable in a calculation before assigning it any value.

Example (Buggy Code):

if True:

pass

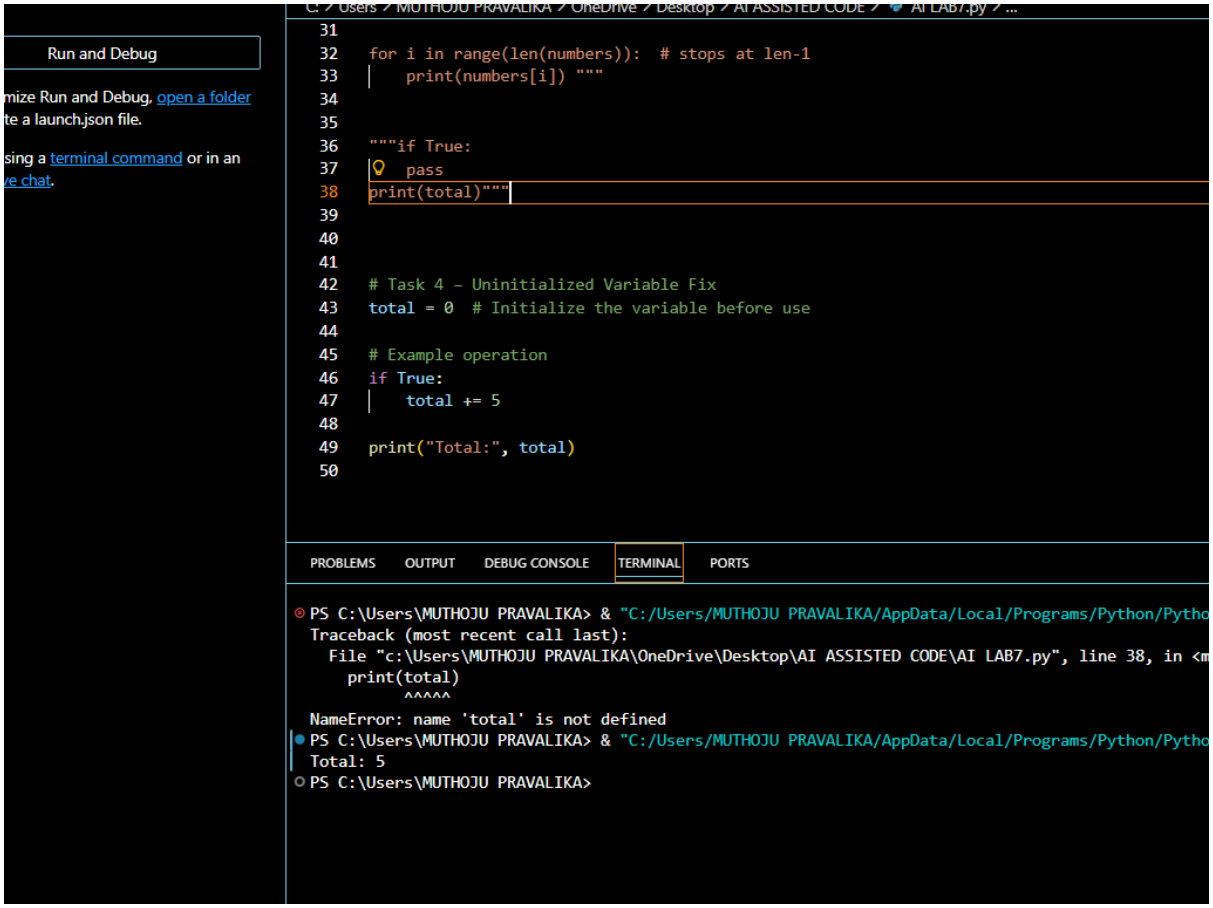
print(total)

Task:

Use AI tools to detect the uninitialized variable and correct the program.

Expected Output -4:

AI initializes the variable correctly before it is used



Task Description

Task 5 – Logical Error in Student Grading System

A grading program assigns incorrect grades due to improper conditional

logic.

Example (Buggy Code):

marks = 85

if marks >= 90:

grade = "A"

elif marks >= 80:

grade = "C"

else:

grade = "B"

print(grade)

Task:

Use AI to analyze the grading conditions and correct the logical flow.

Expected Output -5:

AI corrects the conditional logic so grades are assigned accurately.