

AI ASSISTANT CODING

ASSIGNMENT-7.5

NAME:S SRINIDHI

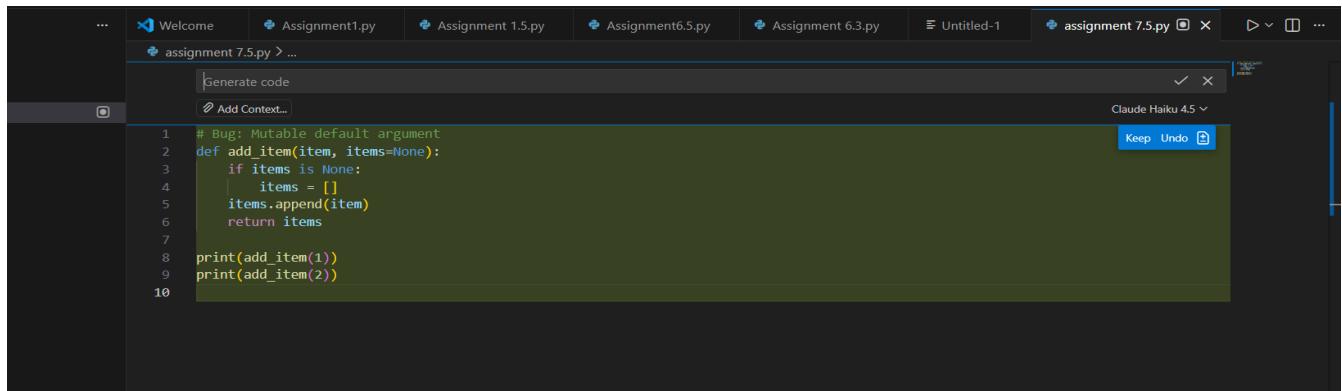
BATCH:20

HT NO:2303A51342

Lab 7: Error Debugging with AI: Systematic approaches to finding and fixing bugs

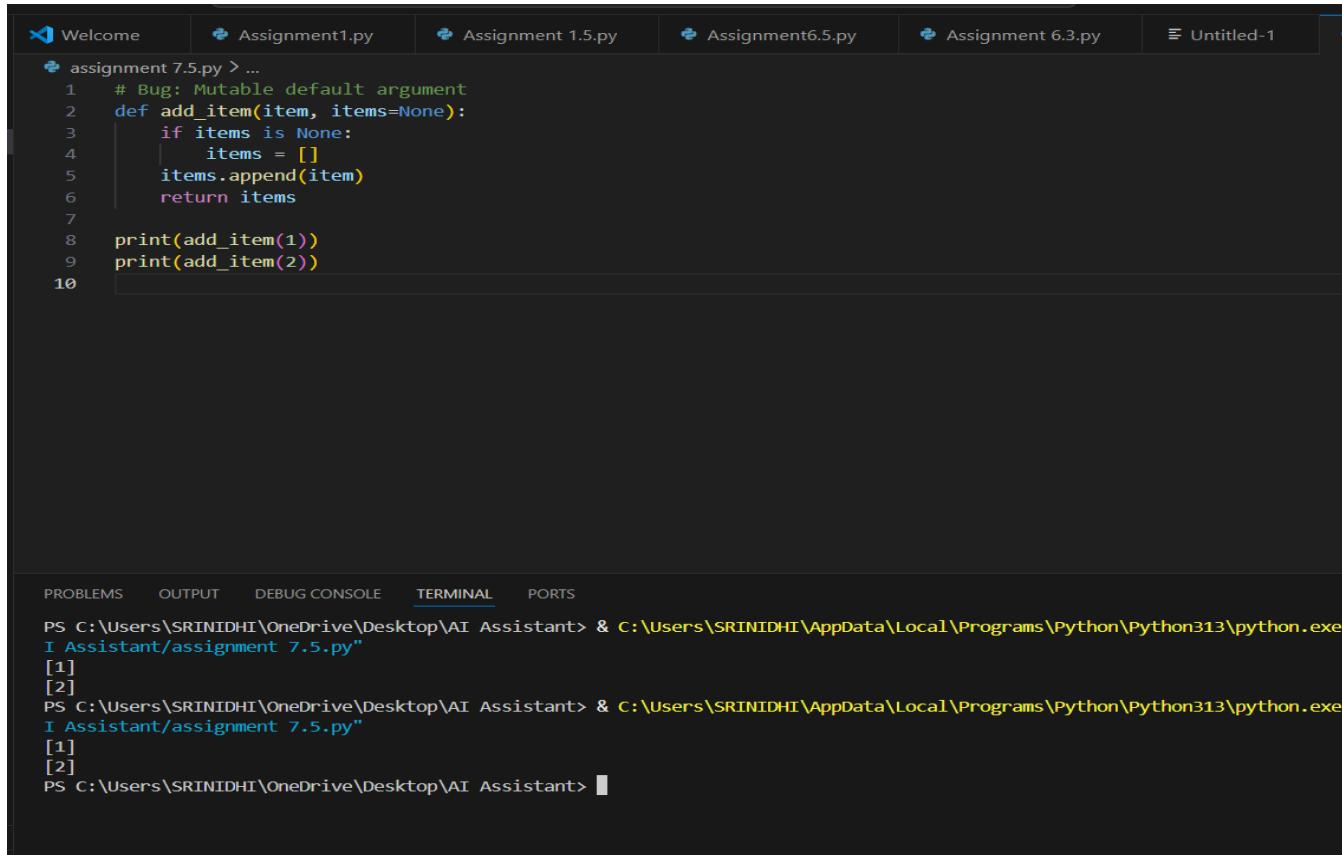
Task 1 (Mutable Default Argument – Function Bug)

CODE & OUTPUT



```
# Bug: Mutable default argument
def add_item(item, items=None):
    if items is None:
        items = []
    items.append(item)
    return items

print(add_item(1))
print(add_item(2))
```



```
# Bug: Mutable default argument
def add_item(item, items=None):
    if items is None:
        items = []
    items.append(item)
    return items

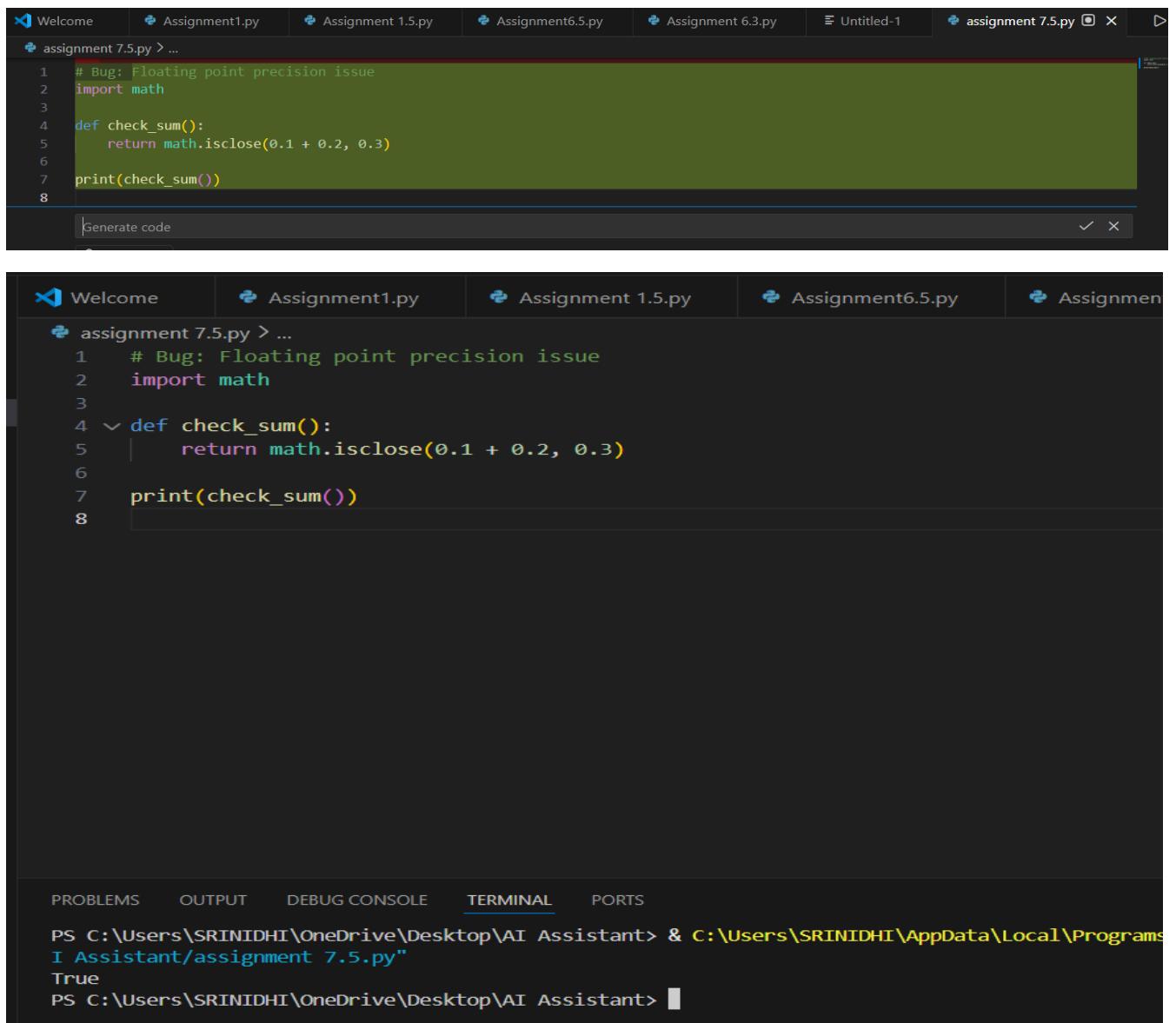
print(add_item(1))
print(add_item(2))
```

TERMINAL

```
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant> & C:\Users\SRINIDHI\AppData\Local\Programs\Python\Python313\python.exe I Assistant/assignment 7.5.py
[1]
[2]
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant> & C:\Users\SRINIDHI\AppData\Local\Programs\Python\Python313\python.exe I Assistant/assignment 7.5.py
[1]
[2]
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant>
```

Task 2 (Floating-Point Precision Error)

CODE & OUTPUT



The screenshot shows the Visual Studio Code interface with the following details:

- Code Editor:** The main window displays the following Python code:

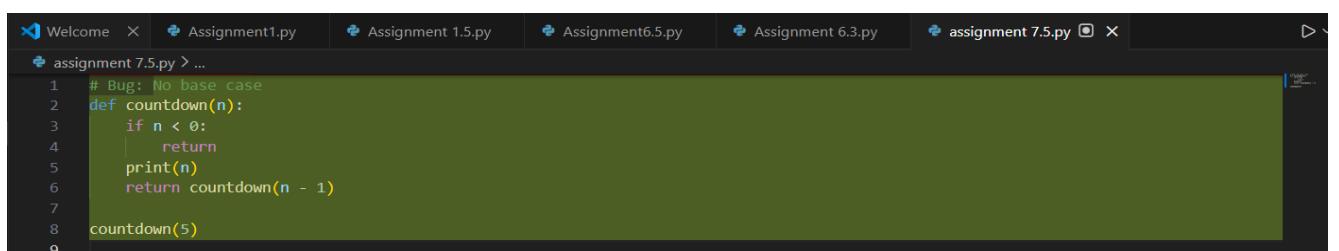
```
1 # Bug: Floating point precision issue
2 import math
3
4 def check_sum():
5     return math.isclose(0.1 + 0.2, 0.3)
6
7 print(check_sum())
8
```

- Bottom Bar:** A "Generate code" button is visible.
- Terminal:** The terminal window shows the command being run and its output:

```
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant> & C:\Users\SRINIDHI\AppData\Local\Programs\AI Assistant\assignment 7.5.py"
True
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant>
```

Task 3 (Recursion Error – Missing Base Case)

CODE & OUTPUT



The screenshot shows the Visual Studio Code interface with the following details:

- Code Editor:** The main window displays the following Python code:

```
1 # Bug: No base case
2 def countdown(n):
3     if n < 0:
4         return
5     print(n)
6     return countdown(n - 1)
7
8 countdown(5)
9
```

The screenshot shows a code editor interface with multiple tabs at the top: Welcome, Assignment1.py, Assignment 1.5.py, Assignment6.5.py, and Assignment 7.5.py. The Assignment 7.5.py tab is active, displaying the following Python code:

```
# Bug: No base case
def countdown(n):
    if n < 0:
        return
    print(n)
    return countdown(n - 1)
countdown(5)
```

Below the code editor is a terminal window showing the output of running the script:

```
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant> & C:\Users\SRINIDHI\AppData\Local\Programs\Python\AI Assistant\assignment 7.5.py
5
4
3
2
1
0
```

Task 4 (Dictionary Key Error)

CODE & OUTPUT

The screenshot shows a code editor interface with multiple tabs at the top: Welcome, Assignment1.py, Assignment 1.5.py, Assignment6.5.py, and Assignment 6.3.py. The Assignment 6.3.py tab is active, displaying the following Python code:

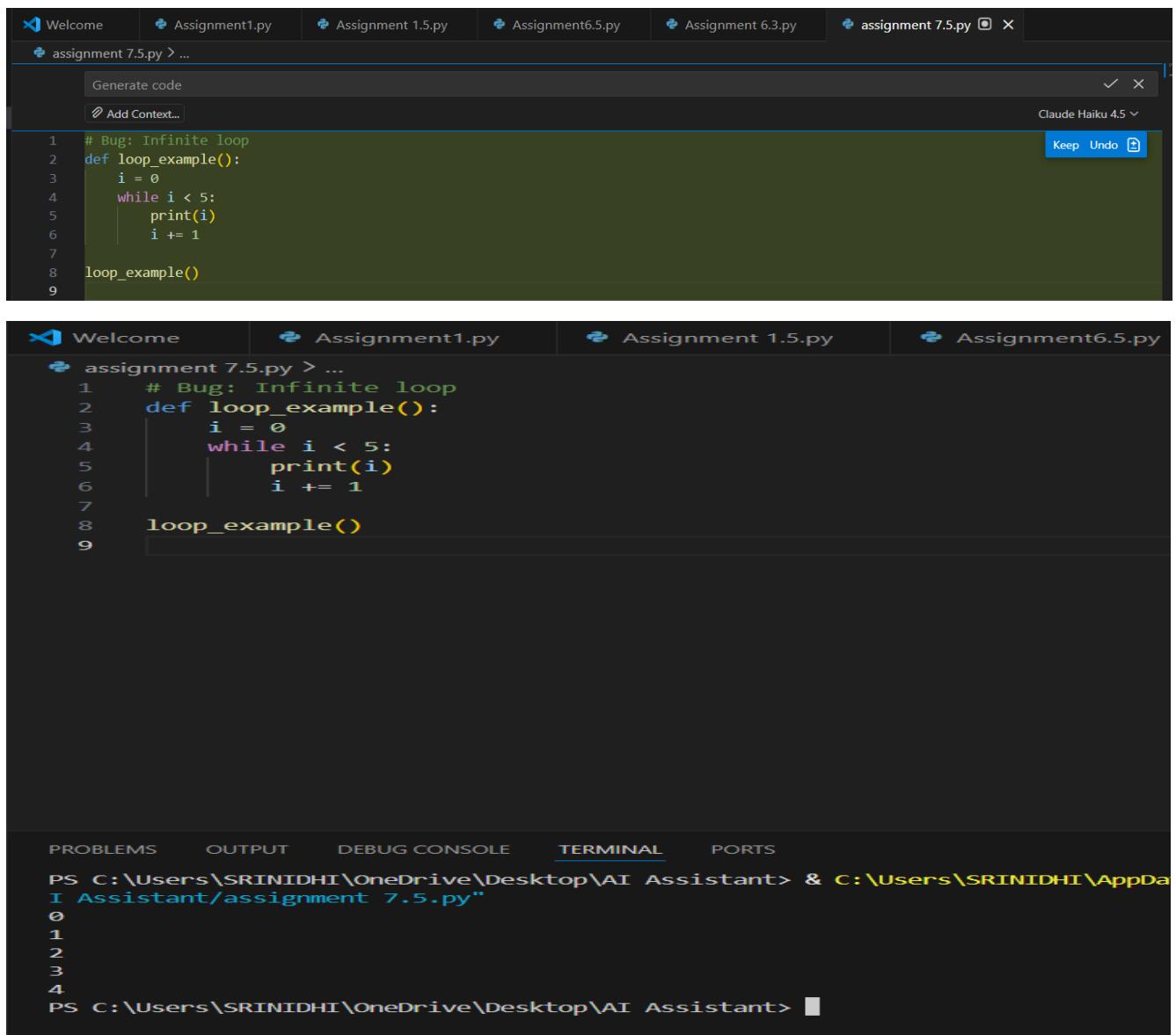
```
# Bug: Accessing non-existing key
def get_value():
    data = {"a": 1, "b": 2}
    return data.get("c", "Key not found")
print(get_value())
```

Below the code editor is a terminal window showing the output of running the script:

```
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant> & C:\Users\SRINIDHI\AppData\Local\Programs\Python\AI Assistant\assignment 7.5.py
Key not found
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant>
```

Task 5 (Infinite Loop – Wrong Condition)

CODE & OUTPUT



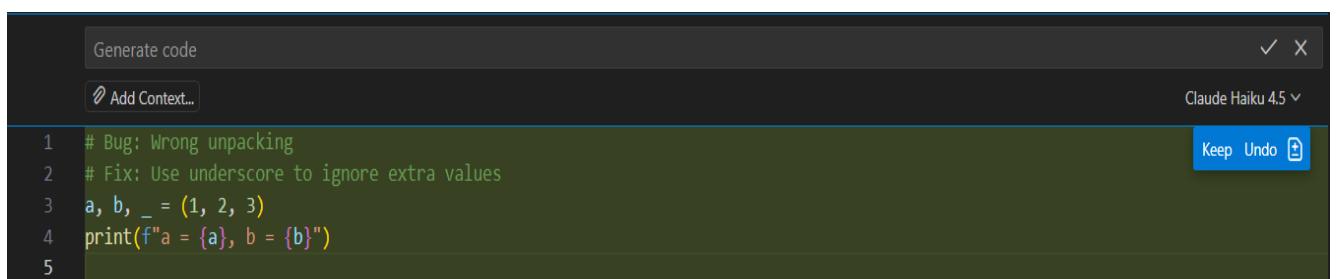
The screenshot shows a code editor window in VS Code. The active file is 'assignment 7.5.py'. The code contains an infinite loop:1 # Bug: Infinite loop
2 def loop_example():
3 i = 0
4 while i < 5:
5 print(i)
6 i += 1
7
8 loop_example()

```
At the bottom, the terminal window shows the output of running the script:
```

PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant> & C:\Users\SRINIDHI\AppData\Local\Temp\assignment 7.5.py"
0
1
2
3
4

Task 6 (Unpacking Error – Wrong Variables)

CODE & OUTPUT



The screenshot shows a code editor window in VS Code. The active file is 'assignment 7.5.py'. The code contains an unpacking error:1 # Bug: Wrong unpacking
2 # Fix: Use underscore to ignore extra values
3 a, b, _ = (1, 2, 3)
4 print(f'a = {a}, b = {b}')
5

The screenshot shows a code editor interface with four tabs at the top: Welcome, Assignment1.py, Assignment 1.5.py, and Assignment6.5.py. The Assignment 7.5.py tab is active, displaying the following Python code:

```
assignment 7.5.py > ...
1 # Bug: Wrong unpacking
2 # Fix: Use underscore to ignore extra values
3 a, b, _ = (1, 2, 3)
4 print(f"a = {a}, b = {b}")
5
```

Below the code editor is a terminal window showing the command PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant> & C:\Users\SRINIDHI\AppData\Local\Programs\Python\Python310\python.exe C:/Users/SRINIDHI/Desktop/AI Assistant/assignment 7.5.py". The terminal output is:

```
a = 1, b = 2
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant>
```

Task 7 (Mixed Indentation – Tabs vs Spaces)

CODE & OUTPUT

The screenshot shows a code editor interface with four tabs at the top: Welcome, Assignment1.py, Assignment 1.5.py, and Assignment6.5.py. The Assignment 7.5.py tab is active, displaying the following Python code:

```
assignment 7.5.py > ...
1 # Bug: Mixed indentation
2 def func():
3     x = 5
4     y = 10
5     return x+y
6
7 print(func())
8
```

Below the code editor is a terminal window showing the command PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant> & C:\Users\SRINIDHI\AppData\Local\Programs\Python\Python310\python.exe C:/Users/SRINIDHI/Desktop/AI Assistant/assignment 7.5.py". The terminal output is:

```
15
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant>
```

Task 8 (Import Error – Wrong Module Usage)

CODE & OUTPUT

The screenshot shows a code editor interface with a dark theme. At the top, there is a toolbar with a file icon, a dropdown menu, and a "Claude Haiku 4.5" button. Below the toolbar, a code editor window titled "assignment 7.5.py" displays the following Python code:

```
1 # Bug: Wrong import - Fixed
2 import math
3 print(math.sqrt(16))
4
```

Below the code editor, there is a tab bar with four tabs: "Welcome", "Assignment1.py", "Assignment 1.5.py", and "Assignment6.5.py". The "assignment 7.5.py" tab is currently active. At the bottom of the screen, there is a terminal window with the following text:

```
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant> & C:\Users\SRINIDHI\AppData\Local\Temp\AI Assistant\assignment 7.5.py"
4.0
PS C:\Users\SRINIDHI\OneDrive\Desktop\AI Assistant>
```