

AI ASSISTANT CODING

Lab Assignment 1.5

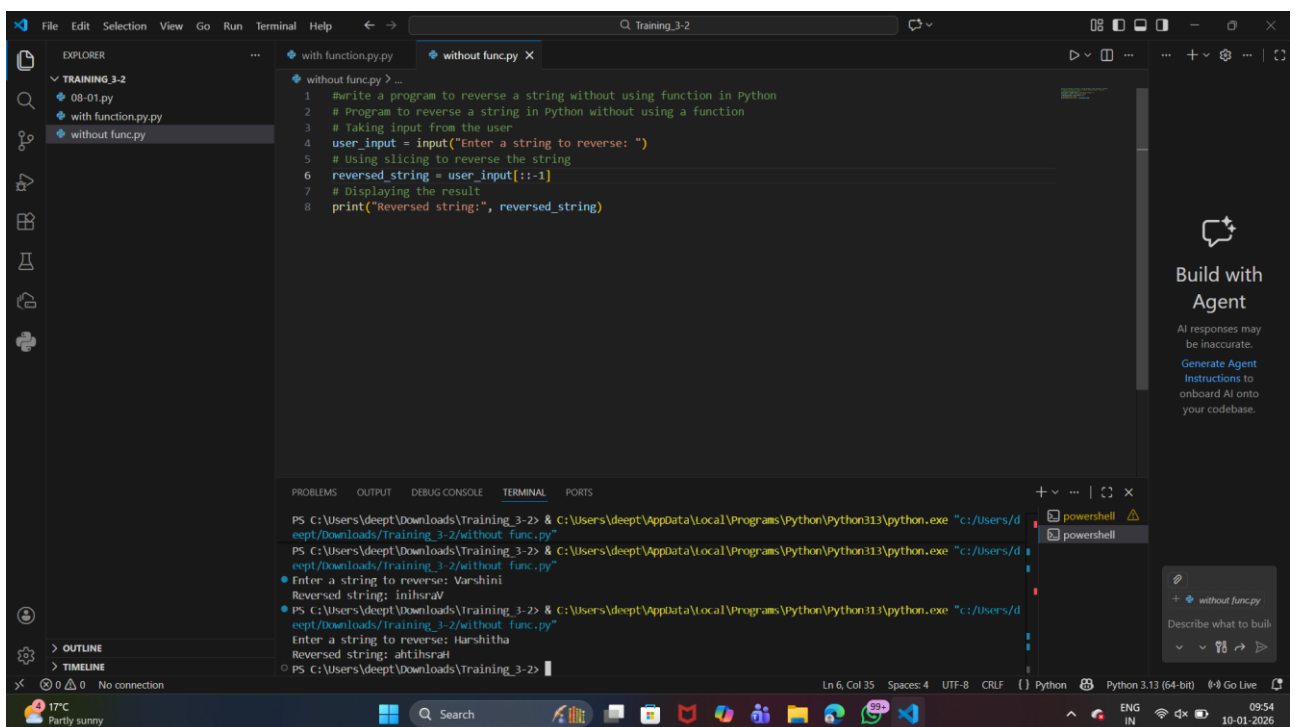
Name: AMRUTH SAGAR VEMUGANTI

Ht.No: 2403A51L44

Batch : 52

Task 1: AI-Generated Logic Without Modularization (Reverse a String)

Prompt Used: “write a simple python program Reverse a string without using functions”



```
File Edit Selection View Go Run Terminal Help Training_3-2
EXPLORER
  TRAINING_3-2
    08-01.py
    with function.py.py
    without func.py
  without func.py
  without func.py X
  without func.py
1 #write a program to reverse a string without using function in Python
2 # Program to reverse a string in Python without using a function
3 # Taking input from the user
4 user_input = input("Enter a string to reverse: ")
5 # Using slicing to reverse the string
6 reversed_string = user_input[::-1]
7 # Displaying the result
8 print("Reversed string:", reversed_string)

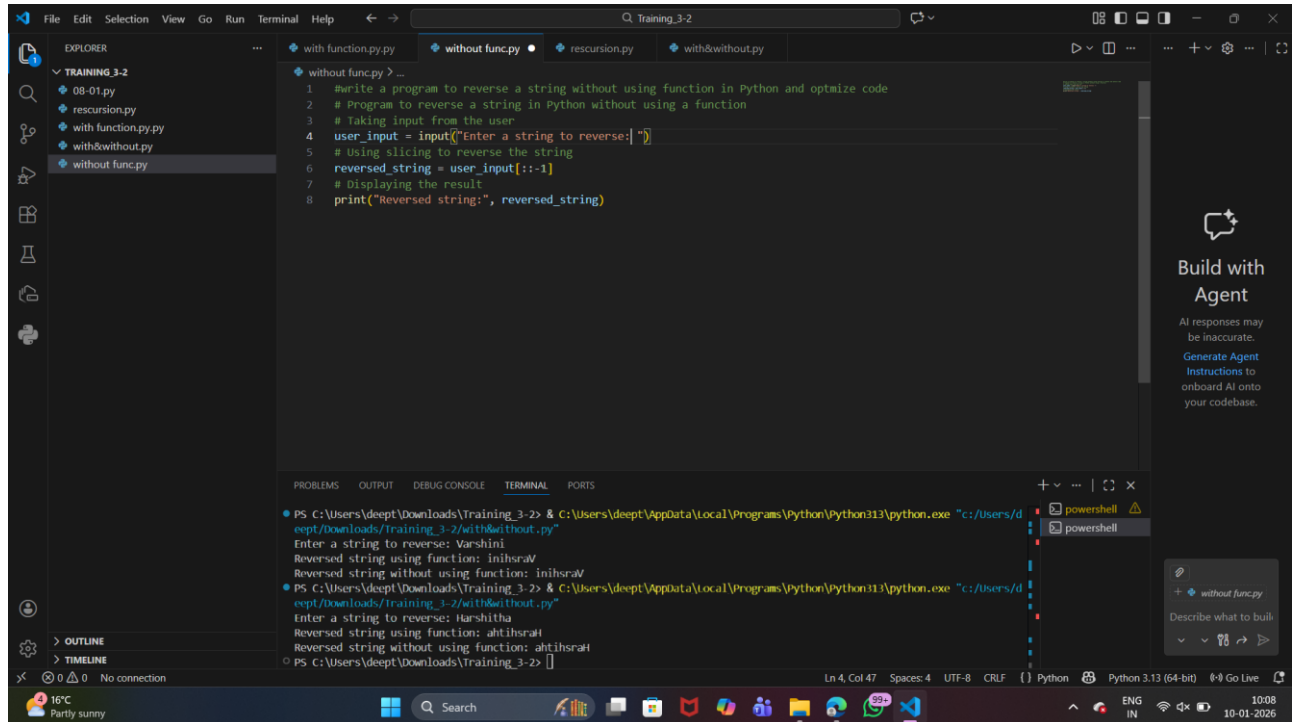
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python313\python.exe "c:/Users/d
eep/Downloads/Training_3-2/without func.py"
PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python313\python.exe "c:/Users/d
eep/Downloads/Training_3-2/without func.py"
• Enter a string to reverse: Varshini
  Reversed string: inilrəV
• PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python313\python.exe "c:/Users/d
eep/Downloads/Training_3-2/without func.py"
  Enter a string to reverse: Harshitha
  Reversed string: ahtsihsrəH
• PS C:\Users\deep\Downloads\Training_3-2>

Ln 6, Col 35 Spaces: 4 UTF-8 CRLF Python Python 3.13 (64-bit) Go Live
17°C Partly sunny 09:54 10-01-2026
```

- Keeps the program simple
- Suitable for small scripts
- Easy for basic understanding
- No function call overhead

Task 2: AI Code Optimization & Cleanup Original Code:

Prompt Used: “optimize this code & simplify logic and improve readability”



```
1 #write a program to reverse a string without using function in Python and optaize code
2 # Program to reverse a string in Python without using a function
3 # Taking input from the user
4 user_input = input("Enter a string to reverse:")
5 # Using slicing to reverse the string
6 reversed_string = user_input[::-1]
7 # Displaying the result
8 print("Reversed string:", reversed_string)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

```
PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python313\python.exe "c:/Users/deep/Downloads/Training_3-2/withoutfunc.py"
Enter a string to reverse: Varshini
Reversed string using function: inihsrav
Reversed string without using function: inihsrav
PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python313\python.exe "c:/Users/deep/Downloads/Training_3-2/withwithout.py"
Enter a string to reverse: Harshitha
Reversed string using function: ahtihsrat
Reversed string without using function: ahtihsrat
PS C:\Users\deep\Downloads\Training_3-2> |
```

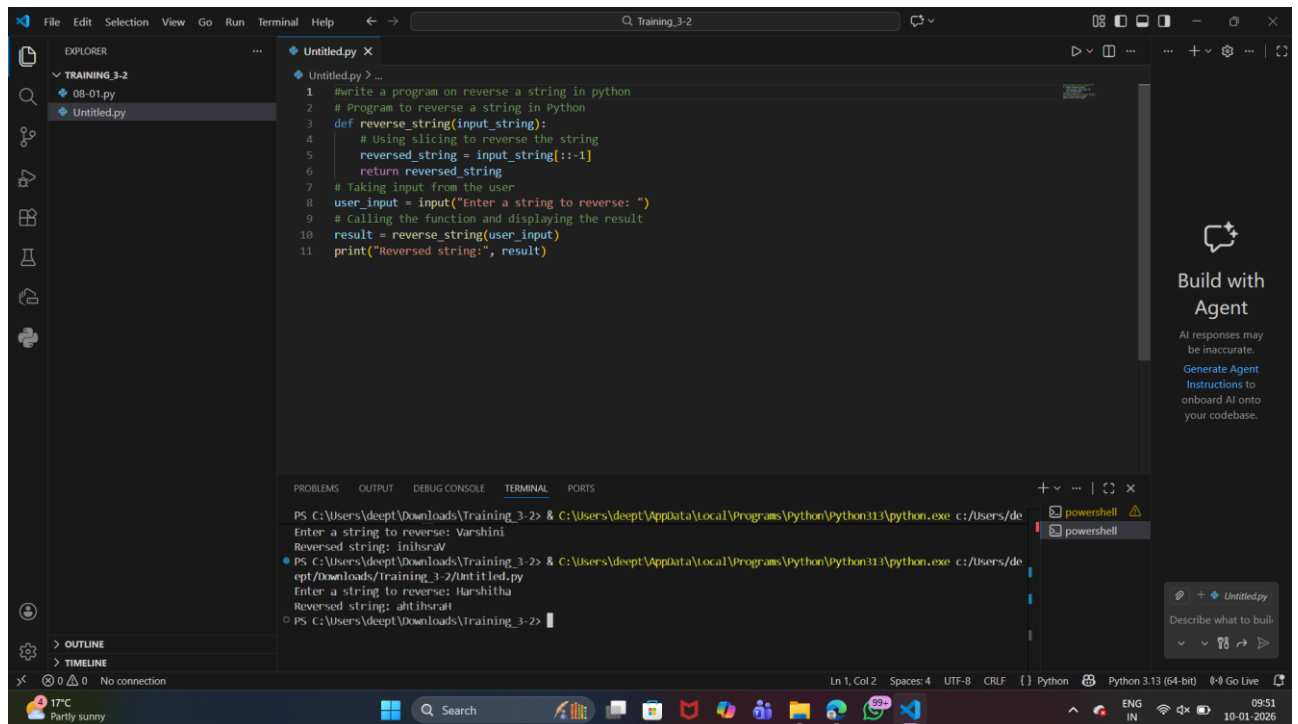
Build with Agent
AI responses may be inaccurate.
[Generate Agent Instructions](#) to onboard AI onto your codebase.

Code is cleaner and easier to maintain

The optimized version improves clarity, maintainability, and readability without affecting performance.

Task 3: Modular Design Using AI Assistance (Reverse a string with Functions)

Prompt Used: “ Write a simple python program of Reverse a string using with function”



```
1 #write a program on reverse a string in python
2 # Program to reverse a string in Python
3 def reverse_string(input_string):
4     # using slicing to reverse the string
5     reversed_string = input_string[::-1]
6     return reversed_string
7 # Taking input from the user
8 user_input = input("Enter a string to reverse: ")
9 # Calling the function and displaying the result
10 result = reverse_string(user_input)
11 print("Reversed string:", result)
```

PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python311\python.exe c:/Users/deep/Downloads/training_3-2/Untitled.py
Enter a string to reverse: Varshini
Reversed string: inihsrav
PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python311\python.exe c:/Users/deep/Downloads/training_3-2/Untitled.py
Enter a string to reverse: Harshitha
Reversed string: ahtsihsraH
PS C:\Users\deep\Downloads\Training_3-2>

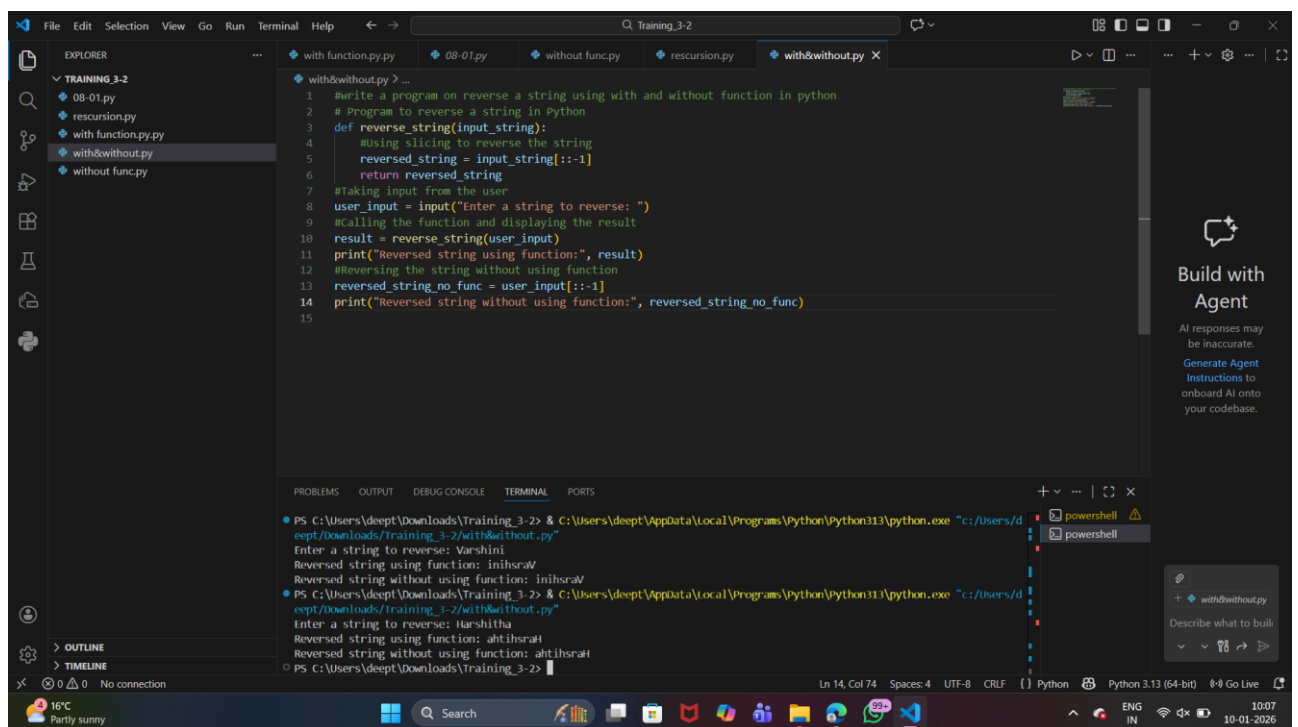
Using functions improves reusability because the same logic can be called multiple times.

It also improves readability and debugging.

Modular code is easier to maintain in large projects.

Task 4: With and Without Using Functions(Reverse a string)

Prompt Used: “ Write a simple python program of Reverse a string using with function and without using function”



The screenshot shows a Visual Studio Code editor window with a file explorer on the left and a terminal at the bottom. The file explorer shows a project named 'TRAINING 3-2' with files '08-01.py', 'recursion.py', 'with function.py', 'with&without.py', and 'without func.py'. The 'with&without.py' file is open in the editor, showing a Python program that reverses a string using a function and without using a function. The terminal shows the execution of the program, with input and output for both methods.

```
1 #write a program on reverse a string using with and without function in python
2 # Program to reverse a string in Python
3 def reverse_string(input_string):
4     #Using slicing to reverse the string
5     reversed_string = input_string[::-1]
6     return reversed_string
7
8 #Taking input from the user
9 user_input = input("Enter a string to reverse: ")
10 #Calling the function and displaying the result
11 result = reverse_string(user_input)
12 print("Reversed string using function:", result)
13 #Reversing the string without using function
14 reversed_string_no_func = user_input[::-1]
15 print("Reversed string without using function:", reversed_string_no_func)
```

Terminal Output:

```
PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python313\python.exe "c:/Users/deep/Downloads/Training_3-2/with&without.py"
Enter a string to reverse: Varshini
Reversed string using function: inihsrav
Reversed string without using function: inihsrav
PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python313\python.exe "c:/Users/deep/Downloads/Training_3-2/with&without.py"
Enter a string to reverse: Harshitha
Reversed string using function: ahtsihsrah
Reversed string without using function: ahtsihsrah
PS C:\Users\deep\Downloads\Training_3-2>
```

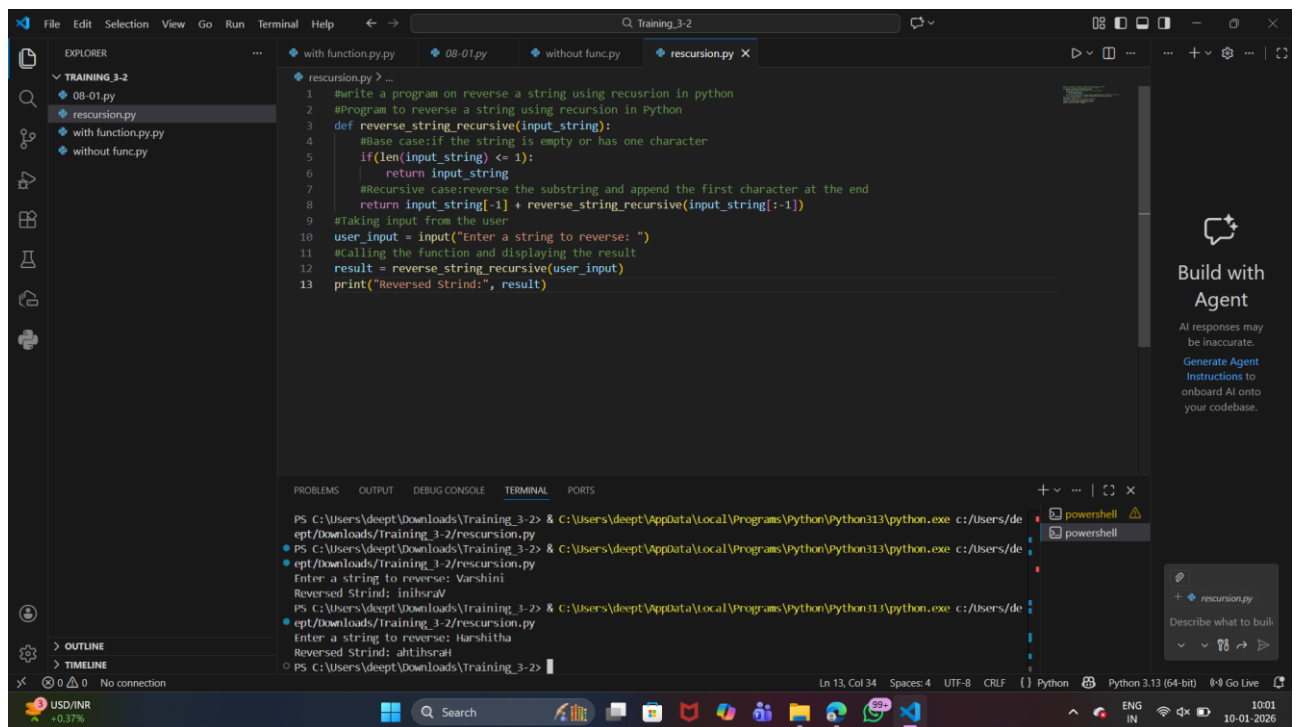
Without using functions: Helps beginners clearly understand the basic logic and step-by-step execution of an Reverse a string program.

Using functions: Makes the code modular, reusable, and easier to read and maintain.

Overall: Using functions follows good programming practices, especially for larger or real-world programs.

Task 5: Iterative vs Recursive AI Code

Prompt Used: “Generate iterative and recursive Reverse a string program in Python”



```
1 #write a program on reverse a string using recursion in python
2 #Program to reverse a string using recursion in Python
3 def reverse_string_recursive(input_string):
4     #Base case:if the string is empty or has one character
5     if(len(input_string) <= 1):
6         return input_string
7     #Recursive case:reverse the substring and append the first character at the end
8     return input_string[-1] + reverse_string_recursive(input_string[:-1])
9 #Taking input from the user
10 user_input = input("Enter a string to reverse: ")
11 #calling the function and displaying the result
12 result = reverse_string_recursive(user_input)
13 print("Reversed Strind:", result)
```

PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python313\python.exe c:/Users/de
ept/Downloads/Training_3-2/recursion.py
PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python313\python.exe c:/Users/de
ept/Downloads/Training_3-2/recursion.py
Enter a string to reverse: Varshini
Reversed Strind: inihsrav
PS C:\Users\deep\Downloads\Training_3-2> & C:\Users\deep\AppData\Local\Programs\Python\Python313\python.exe c:/Users/de
ept/Downloads/Training_3-2/recursion.py
Enter a string to reverse: Harshitha
Reversed Strind: ahtsihsraH
PS C:\Users\deep\Downloads\Training_3-2> |

Execution Flow Explanation

- Iterative version uses loops
- Recursive version uses function calls
- Recursive calls stack memory