

LAB ASSIGNMENT – 1.5

Hall Ticket No.: 2303A510E6

Batch-29

Task 1: AI-Generated Logic Without Modularization (String Reversal Without Functions)

Prompt:

AI-Generated Logic Without Modularization (String Reversal Without Functions)

Code:

```
1 # String Reversal Without Functions
2 input_string = "Hello, World!"
3 reversed_string = ""
4 for char in input_string:
5     reversed_string = char + reversed_string
6 print(reversed_string)
7
8 """# Readability Improvement"""
9 def reverse_string(s):
10     reversed_s = ""
11     for char in s:
12         reversed_s = char + reversed_s
13     return reversed_s
14 input_string = "Hello, World!"
15 print(reverse_string(input_string))"""
16
```

The terminal output shows the command being run and the resulting reversed string: 'olleH'.
Windows Terminal Output:
ms-python.debugpy>2025.18.0-win32-x64/bundled/libs/debugpy\launcher` 53815` --> 'C:\Users\boora\Downloads\aac1.py'
PS C:\Users\boora\Downloads> & 'c:\users\boora\appdata\local\programs\python\python311\python.exe' 'c:\users\boora\vscode\extensions\ms-python\ms-python\2025.18.0-win32-x64\bundled\libs\debugpy\launcher` 53815` --> 'C:\Users\boora\Downloads\aac1.py'
PS C:\Users\boora\Downloads> PS C:\Users\boora\Downloads> & 'c:\users\boora\appdata\local\programs\python\python311\python.exe' 'c:\users\boora\vscode\extensions\ms-python\ms-python\2025.18.0-win32-x64\bundled\libs\debugpy\launcher` 53815` --> 'C:\Users\boora\Downloads\aac1.py'
!dlrow ,olleH
PS C:\Users\boora\Downloads> ^C
PS C:\Users\boora\Downloads>

Task 2: Efficiency & Logic Optimization (Readability Improvement)

Prompt:

Efficiency & Logic Optimization (Readability Improvement)

Code:

```
5     reversed_string = char + reversed_string
6     print(reversed_string)"""
7
8 """# Readability Improvement"""
9 def reverse_string(s):
10     reversed_s = ""
11     for char in s:
12         reversed_s = char + reversed_s
13     return reversed_s
14 input_string = "Hello, World!"
15 print(reverse_string(input_string))
16
17 """#String Reversal Using Functions
18 def reverse_string(s):
19     reversed_s = ""
20     for char in s:
21         reversed_s = char + reversed_s
22     return reversed_s
23
24 input_string = "Hello, World!"
25 print(reverse_string(input_string))"""
26
```

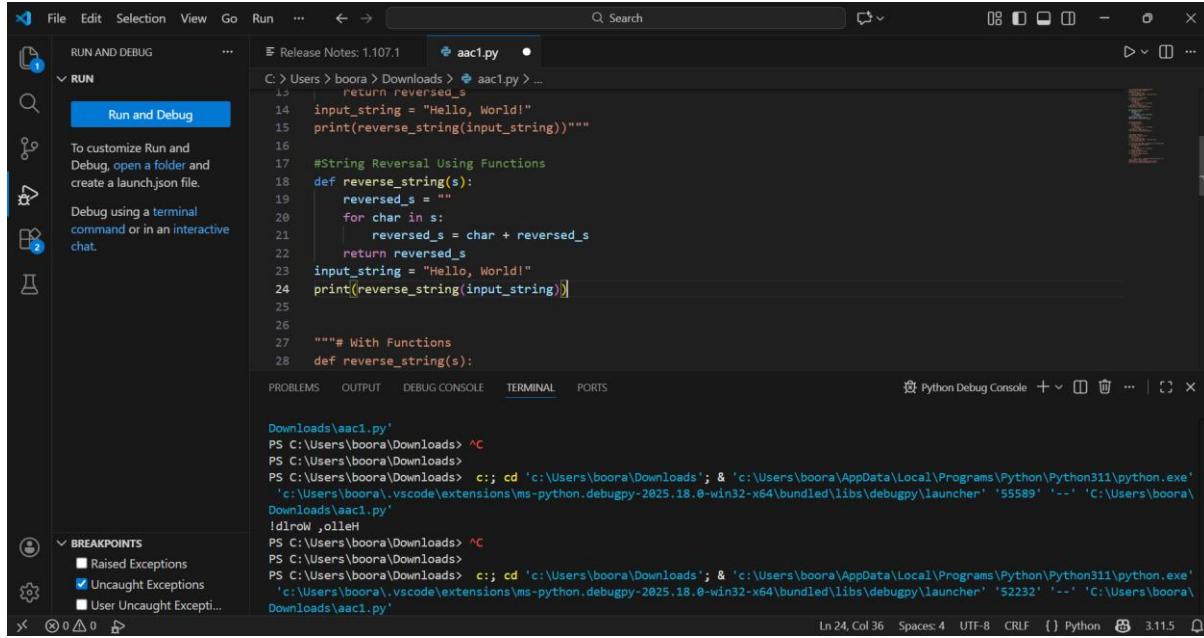
The terminal output shows the command being run and the resulting reversed string: 'olleH'.
Windows Terminal Output:
ms-python.debugpy>2025.18.0-win32-x64/bundled/libs/debugpy\launcher` 49679` --> 'C:\Users\boora\Downloads\aac1.py'
PS C:\Users\boora\Downloads> & 'c:\users\boora\appdata\local\programs\python\python311\python.exe' 'c:\users\boora\vscode\extensions\ms-python\ms-python\2025.18.0-win32-x64\bundled\libs\debugpy\launcher` 49679` --> 'C:\Users\boora\Downloads\aac1.py'
!dlrow ,olleH
PS C:\Users\boora\Downloads> ^C
PS C:\Users\boora\Downloads> PS C:\Users\boora\Downloads> & 'c:\users\boora\appdata\local\programs\python\python311\python.exe' 'c:\users\boora\vscode\extensions\ms-python\ms-python\2025.18.0-win32-x64\bundled\libs\debugpy\launcher` 49679` --> 'C:\Users\boora\Downloads\aac1.py'
!dlrow ,olleH
PS C:\Users\boora\Downloads> PS C:\Users\boora\Downloads> PS C:\Users\boora\Downloads> & 'c:\users\boora\appdata\local\programs\python\python311\python.exe' 'c:\users\boora\vscode\extensions\ms-python\ms-python\2025.18.0-win32-x64\bundled\libs\debugpy\launcher` 49679` --> 'C:\Users\boora\Downloads\aac1.py'
!dlrow ,olleH
PS C:\Users\boora\Downloads> ^C
PS C:\Users\boora\Downloads>

Task 3: Modular Design Using AI Assistance (String Reversal Using Functions)

Prompt:

Modular Design Using AI Assistance (String Reversal Using Functions)

Code:



The screenshot shows the VS Code interface with the following details:

- File Bar:** RUN AND DEBUG, File, Edit, Selection, View, Go, Run, ...
- Title Bar:** Release Notes: 1.107.1, aac1.py
- Code Editor:** C:\Users\boora\Downloads\aac1.py (content below)
- Terminal:** Python Debug Console (content below)
- Sidebar:** RUN, PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, PORTS, BREAKPOINTS (with checkboxes for Raised Exceptions, Uncaught Exceptions, User Caught Exceptions).

```
C: > Users > boora > Downloads > aac1.py ...
13 |     return reversed_s
14 | input_string = "Hello, World!"
15 | print(reverse_string(input_string))"""
16 |
17 | #String Reversal Using Functions
18 | def reverse_string(s):
19 |     reversed_s = ""
20 |     for char in s:
21 |         reversed_s = char + reversed_s
22 |     return reversed_s
23 |
24 | input_string = "Hello, World!"
25 | print(reverse_string(input_string))
26 |
27 | """# With Functions
28 | def reverse_string(s):
```

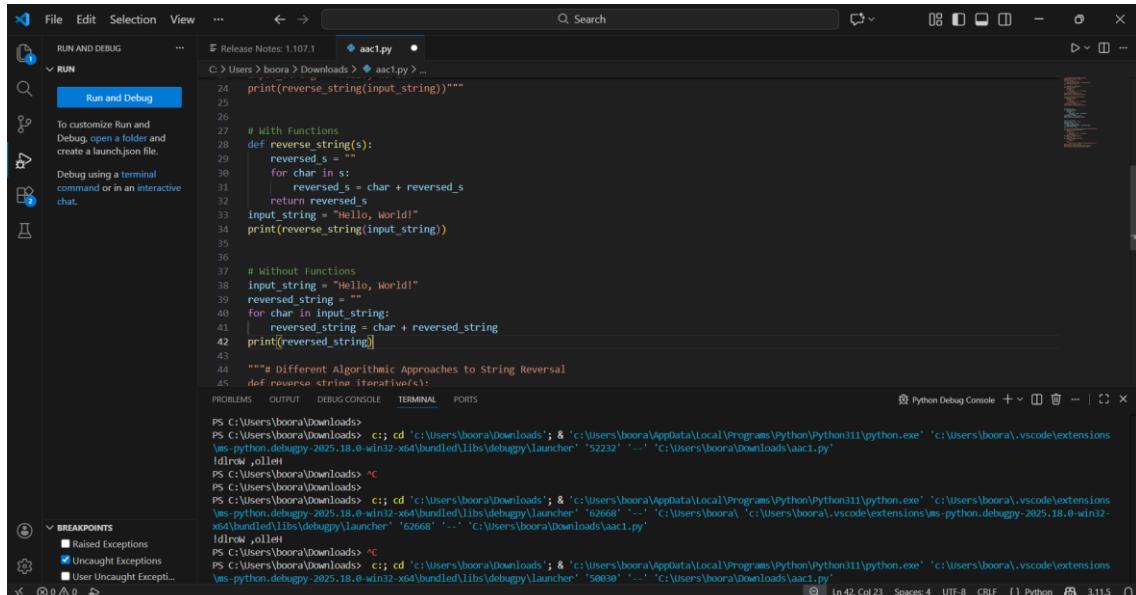
```
Downloads\aac1.py'
PS C:\Users\boora\Downloads> ^C
PS C:\Users\boora\Downloads>
PS C:\Users\boora\Downloads> c:; cd 'c:\Users\boora\Downloads'; & 'c:\Users\boora\AppData\Local\Programs\Python\Python311\python.exe' 'c:\Users\boora\vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '55589' --- 'C:\Users\boora\Downloads\aac1.py'
!dir\w ,olleH
PS C:\Users\boora\Downloads> ^C
PS C:\Users\boora\Downloads>
PS C:\Users\boora\Downloads> c:; cd 'c:\Users\boora\Downloads'; & 'c:\Users\boora\AppData\Local\Programs\Python\Python311\python.exe' 'c:\Users\boora\vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '52232' --- 'C:\Users\boora\Downloads\aac1.py'
```

Task 4: Comparative Analysis – Procedural vs Modular Approach (With vs Without Functions)

Prompt:

Comparative Analysis – Procedural vs Modular Approach (With vs Without Functions)

Code:



The screenshot shows the VS Code interface with the following details:

- File Bar:** RUN AND DEBUG, File, Edit, Selection, View, ...
- Title Bar:** Release Notes: 1.107.1, aac1.py
- Code Editor:** C:\Users\boora\Downloads\aac1.py (content below)
- Terminal:** Python Debug Console (content below)
- Sidebar:** RUN, PROBLEMS, OUTPUT, DEBUG CONSOLE, TERMINAL, PORTS, BREAKPOINTS (with checkboxes for Raised Exceptions, Uncaught Exceptions, User Caught Exceptions).

```
C: > Users > boora > Downloads > aac1.py ...
24 |     print(reverse_string(input_string))"""
25 |
26 |
27 | # With Functions
28 | def reverse_string(s):
29 |     reversed_s = ""
30 |     for char in s:
31 |         reversed_s = char + reversed_s
32 |     return reversed_s
33 |
34 | input_string = "Hello, World!"
35 | print(reverse_string(input_string))
36 |
37 |
38 | # without Functions
39 | input_string = "Hello, World!"
40 | reversed_string = ""
41 | for char in input_string:
42 |     reversed_string = char + reversed_string
43 | print(reversed_string)
44 |
45 | """# Different Algorithmic Approaches to String Reversal
46 | def reverse_string_iterative(s):
```

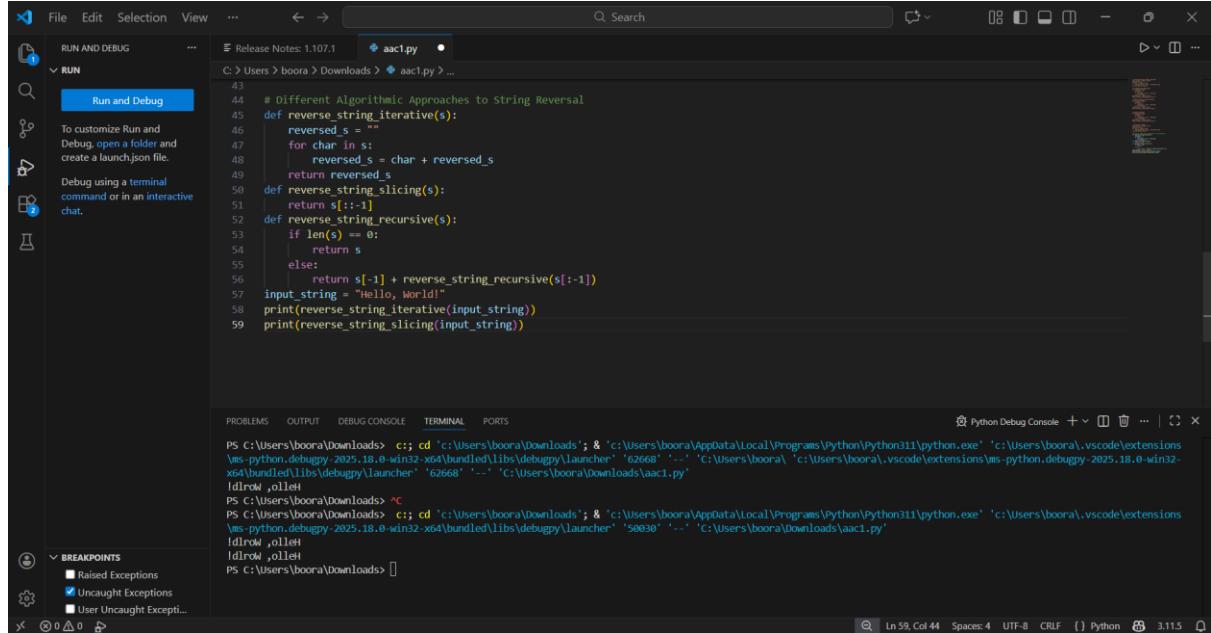
```
PS C:\Users\boora\Downloads>
PS C:\Users\boora\Downloads> c:; cd 'c:\Users\boora\Downloads'; & 'c:\Users\boora\AppData\Local\Programs\Python\Python311\python.exe' 'c:\Users\boora\vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '52232' --- 'C:\Users\boora\Downloads\aac1.py'
!dir\w ,olleH
PS C:\Users\boora\Downloads> ^C
PS C:\Users\boora\Downloads>
PS C:\Users\boora\Downloads> c:; cd 'c:\Users\boora\Downloads'; & 'c:\Users\boora\AppData\Local\Programs\Python\Python311\python.exe' 'c:\Users\boora\vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '62668' --- 'C:\Users\boora\vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '62668' --- 'C:\Users\boora\Downloads\aac1.py'
!dir\w ,olleH
PS C:\Users\boora\Downloads> ^C
PS C:\Users\boora\Downloads>
PS C:\Users\boora\Downloads> c:; cd 'c:\Users\boora\Downloads'; & 'c:\Users\boora\AppData\Local\Programs\Python\Python311\python.exe' 'c:\Users\boora\vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundled\libs\debugpy\launcher' '50030' --- 'C:\Users\boora\Downloads\aac1.py'
```

Task 5: AI-Generated Iterative vs Recursive Fibonacci Approaches (Different Algorithmic Approaches to String Reversal)

Prompt:

AI-Generated Iterative vs Recursive Fibonacci Approaches (Different Algorithmic Approaches to String Reversal)

Code:



```
File Edit Selection View ... ← → ⌂ Search RUN AND DEBUG ... Release Notes: 1.107.1 aact.py ● C:\Users\boora\Downloads> aact.py ... 43 # Different Algorithmic Approaches to String Reversal 44 def reverse_string_iterative(s): 45     reversed_s = "" 46     for char in s: 47         reversed_s = char + reversed_s 48     return reversed_s 49 def reverse_string_slicing(s): 50     return s[::-1] 51 def reverse_string_recursive(s): 52     if len(s) == 0: 53         return s 54     else: 55         return s[-1] + reverse_string_recursive(s[:-1]) 56 input_string = "Hello, World!" 57 print(reverse_string_iterative(input_string)) 58 print(reverse_string_slicing(input_string)) 59 print(reverse_string_recursive(input_string))
```

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

- File Explorer:** Shows a folder structure with a file named "aact.py".
- Run and Debug View:** Shows a "RUN" section with a "Run and Debug" button.
- Terminal:** Shows the command-line output of running the script "aact.py". The output includes the imports for "ms-python.debugger" and "ms-python.vscode-prompt", followed by the execution of the script which prints "Hello, World!" three times using different methods.
- Breakpoints View:** Shows a list of breakpoints with checkboxes for "Raised Exceptions", "Uncaught Exceptions", and "User Uncaught Exceptions".