

ASSIGNMENT-3.4

2303A51343
BATCH-10

TASK-1:

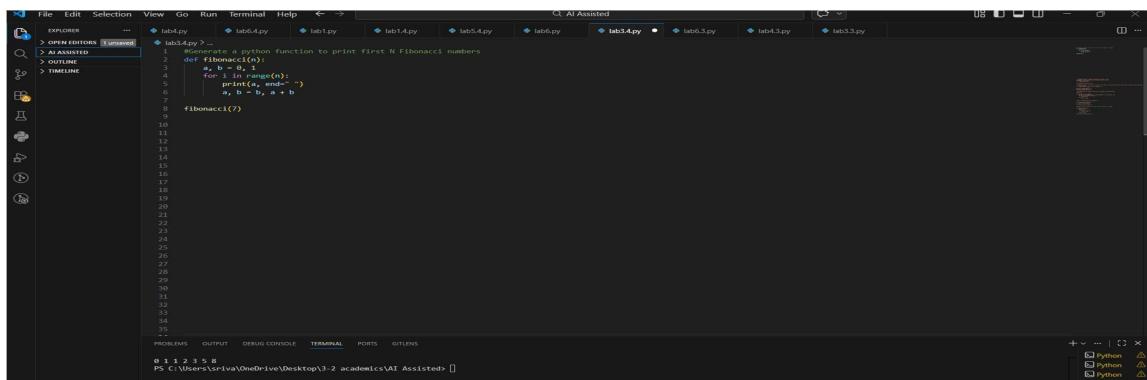
Prompt:

Generate a python function to print first N Fibonacci numbers.

Code:

```
def fibonacci(n):
    a, b = 0, 1    for i
    in range(n):
        print(a, end=" ")
        a, b = b, a + b
fibonacci(7)
```

Output:



```
File Edit Selection View Go Run Terminal Help < - > CL All Assisted
EXPLORER 2023-03-22 10:45:00
> lab3.4.py
> generate a python function to print First N Fibonacci numbers
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fibonacci(7)
0 1 1 2 3 5 8
PS C:\Users\srivaa\OneDrive\Desktop\3-2 academics\AI Assisted> []
```

Analysis:

The function generates Fibonacci numbers using two variables.

A loop runs N times and prints numbers one by one.

TASK-2:

Prompt:

Write a python function to reverse a list.

Code:

```
def reverse_list(lst):
```

```
return lst[::-1] print(reverse_list([1,2,3]))
```

Output:

The screenshot shows a code editor interface with multiple tabs open. The active tab, 'lab3.4.py', contains the following Python code:

```
#Generate a python function to print first N Fibonacci numbers
def fibonacci(n):
    a, b = 0, 1
    for i in range(n):
        print(a, end=" ")
        a, b = b, a + b
fibonacci(7)

#TASK-2: Write a python function to reverse a list
# Example: reverse_list([1,2,3]) should return [3,2,1]
def reverse_list(lst):
    return lst[::-1]

print(reverse_list([1,2,3]))
```

The output window below the code editor shows the results of the execution:

```
[3, 2, 1]
```

Analysis:

The function reverses the given list.

It uses slicing method to change order of elements.

The output list is returned in reverse format.

TASK-3:

Prompt::

Write a function `is_valid()` that returns True and The string starts with a capital letter and ends with a period.

CODE:

```
def
is_valid(s):
    return s[0].isupper() and s.endswith('.')
print(is_valid("Hello.))
```

```

print(is_valid("hello."))
print(is_valid("Hello"))

```

Output:

```

File Edit Selection View Go Run Terminal Help ← → Q AI Assisted
OPEN EDITORS 1 unsaved
EXPLORER ... lab4.py lab6.4.py lab1.py lab1.4.py lab5.4.py lab6.py lab3.4.py lab3.3.py lab4.3.py lab3.3.py
AI ASSISTED
OUTLINE
TIMELINE
8 fibonacii(7)...
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10 #TASK-2:# Write a python function to reverse a list
11 # Example: reverse_list([1,2,3]) should return [3,2,1]
12 ...
13 def reverse_list(lst):
14     return lst[::-1]
15
16 print(reverse_list([1,2,3]))
17 ...
18
19 #TASK-3: Write a function is_valid() that returns True and the string starts with a capital letter and ends with a period.
20 def is_valid(s):
21     return [s[0].isupper() and s.endswith('.')]
22
23 print(is_valid("Hello."))
24 print(is_valid("Hello."))
25 print(is_valid("Hello"))
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```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLENS

True
False
PS C:\Users\sriva\OneDrive\Desktop\3-2 academics\AI Assisted> []

+ - | x

Python Python Python Python Python Python Python

Analysis:

- The function checks whether the first letter is capital.
- It also checks whether the string ends with a period.
- Both conditions must be true to return True.

TASK-4:

Prompt::

Write a python function to validate an email address. CODE:

```

import re def
validate_email(email):
    pattern = r"^[a-zA-Z0-9_.+-]+@[a-zA-Z0-9-]+\.[a-zA-Z0-9-.]+$"
    if re.match(pattern, email):
        return True
    else:

```

else:

```

return False email = input("Enter
email address: ") if
validate_email(email):    print("Valid
Email") else:
    print("Invalid Email")

```

Output:

The screenshot shows a code editor interface with several tabs open. The active tab contains Python code for validating emails and calculating the sum of digits of a number. The code includes imports, function definitions, regular expression patterns, and user input handling. Below the code editor, a terminal window shows the execution of the script and its output.

```

File Edit Selection View Go Run Terminal Help <- > Q, AI Assisted
OPEN EDITORS lab4.py lab6.4.py lab1.py lab1.4.py lab5.4.py lab6.py lab3.4.py x lab6.3.py lab4.3.py lab3.3.py
AI ASSISTED
OUTLINE
TIMELINE
File Explorer
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS GITLens
PS C:\Users\sriva\OneDrive\Desktop\3-2_academics\AI Assisted & C:/Users/sriva/AppData/Local/Programs/Python/Python313/python.exe "c:/Users/sriva/OneDrive/Desktop/3-2_academics/AI Assisted/b3.4.py"
Enter email address: srivarshapabbu@gmail.com
Valid Email
# TASK-5:Write a function to return sum of digits of a number
def sum_of_digits(n):
    total = 0
    while n > 0:
        total += n % 10
        n = n // 10
    return total
print(sum_of_digits(123))

```

Analysis:

- The function checks whether the first letter is capital.
- It also checks whether the string ends with a period.
- Both conditions must be true to return True.

Task-5

Prompt:

Write a function to return sum of digits of a number

Code:

```

def sum_of_digits(n):
    total = 0
    while n > 0:
        total += n % 10
        n = n // 10
    return total
print(sum_of_digits(123))

```

Output:

The screenshot shows a dark-themed instance of Visual Studio Code. The top menu bar includes File, Edit, Selection, View, Go, Run, Terminal, Help, and a language-specific dropdown. The title bar says "AI Assisted". The left sidebar has sections for Explorer, AI ASSISTED, Outline, and Timeline. The main editor area contains the following Python code:

```
34     return True
35 else:
36     return False
37
38
39 email = input("Enter email address: ")
40
41 if validate_email(email):
42     print("Valid Email")
43 else:
44     print("Invalid Email")
45
46 # TASK-5:Write a function to return sum of digits of a number
47
48 def sum_of_digits(n):
49     total = 0
50     while n > 0:
51         total += n % 10
52         n = n // 10
53     return total
54
55 print(sum_of_digits(123))
```

The terminal at the bottom shows the command PS C:\Users\sriava\Desktop\3-2_academics\AI Assisted> followed by a blank line.

Analysis:

- The function extracts digits using loop.
- Each digit is added to total sum.
- Finally the sum of digits is returned.