

ASSIGNMENT-3.4

2303A51343
BATCH-10

TASK-1:

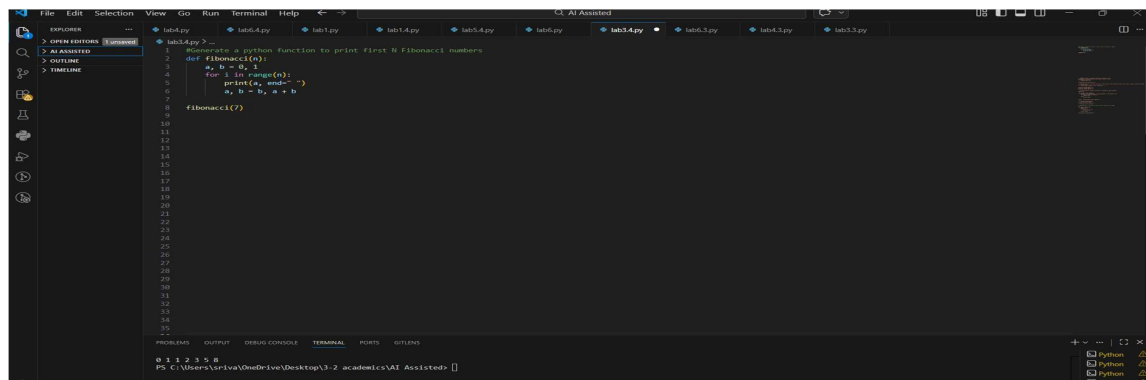
Prompt:

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:



Analysis:

The function generates Fibonacci numbers using two variables.

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

TASK-2:

Prompt:

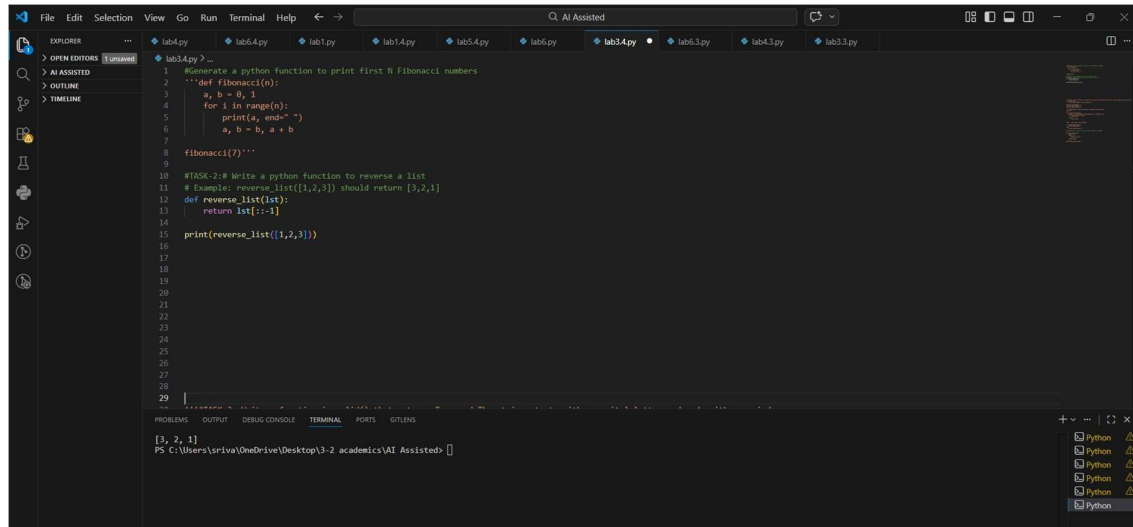
Write a python function to reverse a list.

Code:

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

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

Output:



The screenshot shows a VS Code editor with a Python file named 'lab3.4py'. The code defines a function 'reverse_list' that takes a list and returns its reverse. The function uses slicing: 'return lst[::-1]'. Below the function definition, there is a call to 'print(reverse_list([1,2,3]))'. The terminal at the bottom shows the output: '[3, 2, 1]'. The terminal prompt is 'PS C:\Users\oriva\OneDrive\Desktop\3-2 academics\AI Assisted>'.

```
1 #Generate a python function to print first N Fibonacci numbers
2 def fibonacci(n):
3     a, b = 0, 1
4     for i in range(n):
5         print(a, end=" ")
6         a, b = b, a + b
7
8 fibonacci(7)'''
9
10 #TASK-2: Write a python function to reverse a list
11 # Example: reverse_list([1,2,3]) should return [3,2,1]
12 def reverse_list(list):
13     return list[::-1]
14
15 print(reverse_list([1,2,3]))
16
17
18
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26
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28
29
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS GIT LENS

[3, 2, 1]
PS C:\Users\oriva\OneDrive\Desktop\3-2 academics\AI Assisted>

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.

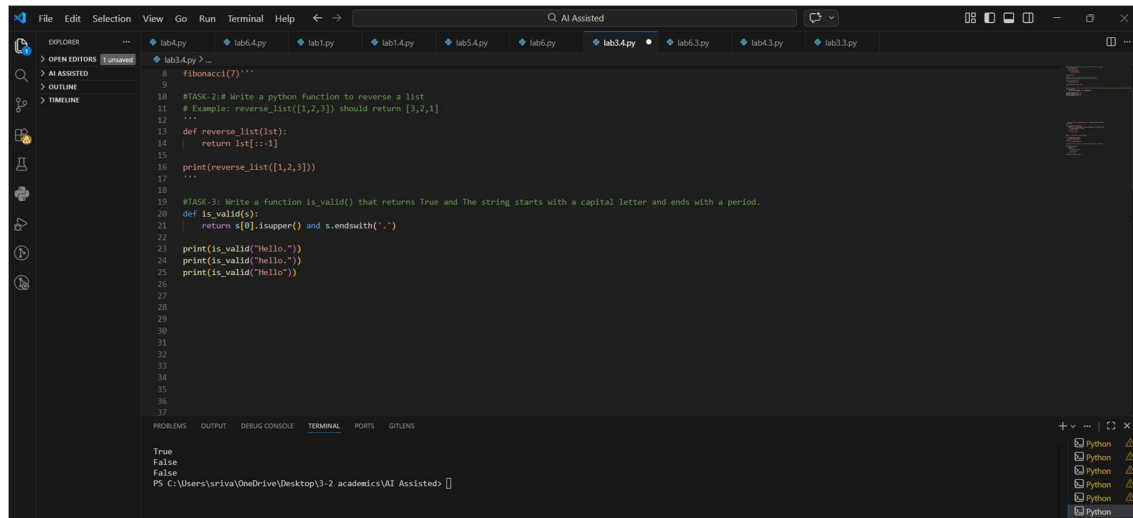
CODE:

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

```
print(is_valid("hello."))
```

```
print(is_valid("Hello"))
```

Output:



The screenshot shows a VS Code editor with a Python file open. The code defines a function `reverse_list` and a function `is_valid`. The `is_valid` function checks if a string starts with a capital letter and ends with a period. The terminal output shows the results of calling `is_valid` with "hello." and "Hello".

```
8  fibonacci(7)'''
9
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(list):
14     return list[::-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"))
26
27
28
29
30
31
32
33
34
35
36
37
```

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

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:
```

```

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

```

Output:

```

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"))
26
27 # TASK-4: Write a python function to validate an email address
28 import re
29
30 def validate_email(email):
31     pattern = r"^[a-zA-Z0-9._+]+@[a-zA-Z0-9.-]+\.[a-zA-Z0-9.-]+$"
32     if re.match(pattern, email):
33         return True
34     else:
35         return False
36
37 email = input("Enter email address: ")
38
39 if validate_email(email):
40     print("Valid Email")
41 else:
42     print("Invalid Email")
43
44 # TASK-5: Write a function to return sum of digits of a number
45

```

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:

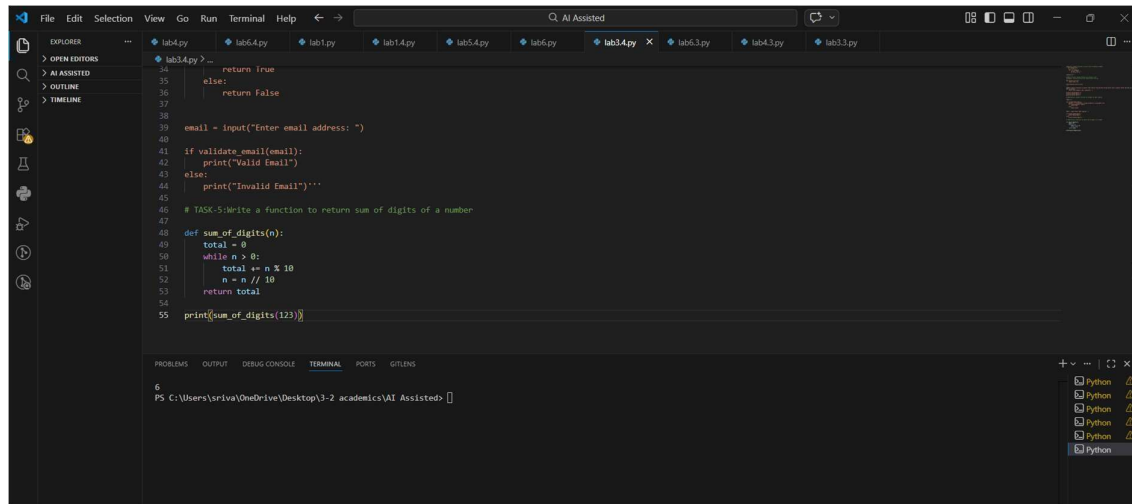
```

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 Visual Studio Code editor with a Python file named 'lab3_4.py'. The code defines a function 'sum_of_digits(n)' that calculates the sum of digits of a number using a while loop. The terminal output shows the command 'PS C:\Users\sriya\OneDrive\Desktop\3-2 academics\AI Assisted>' followed by the command '6' and the output '6'.

```
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))
```

6

PS C:\Users\sriya\OneDrive\Desktop\3-2 academics\AI Assisted>

Analysis:

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