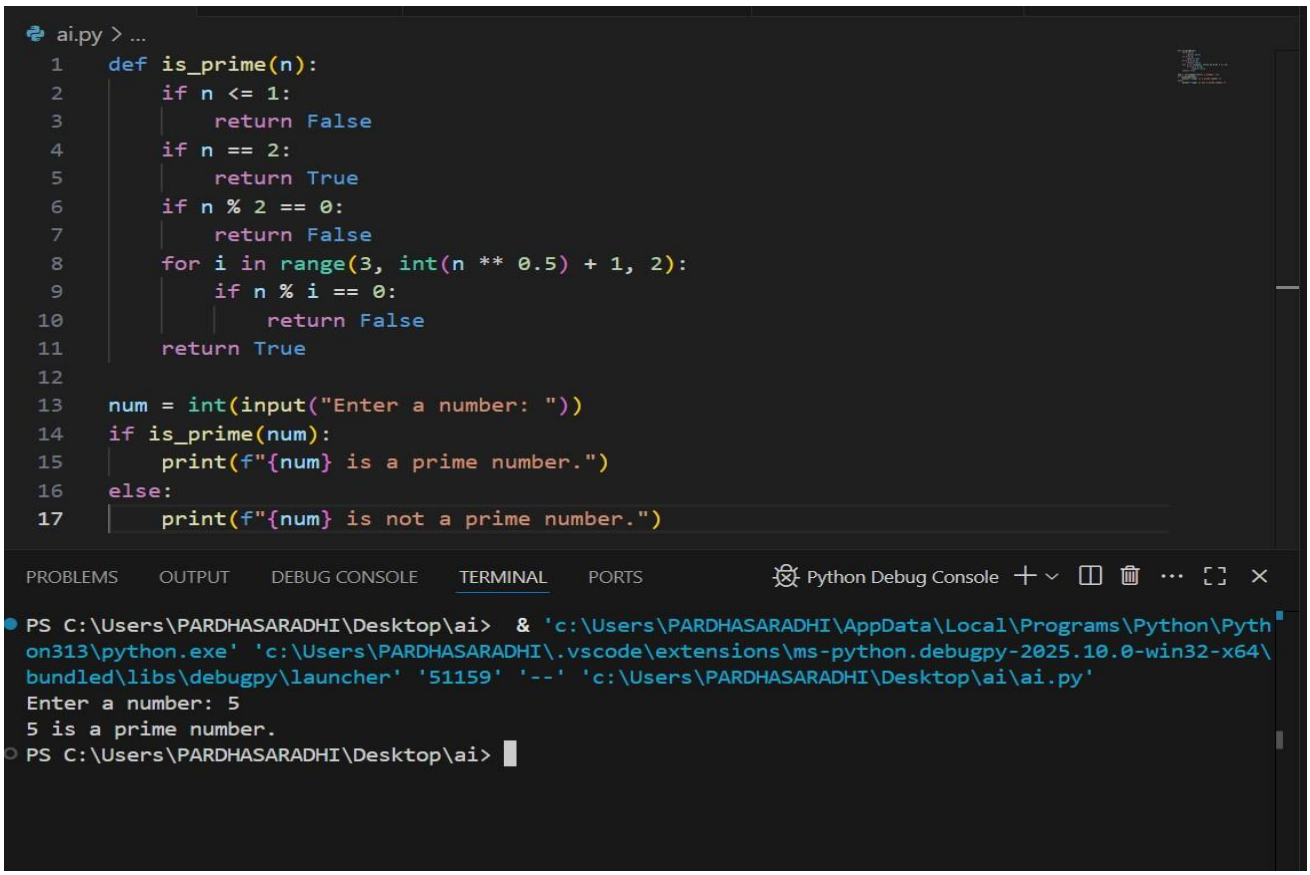
LAB ASSIGNMENT-1

Name : V.Koushik

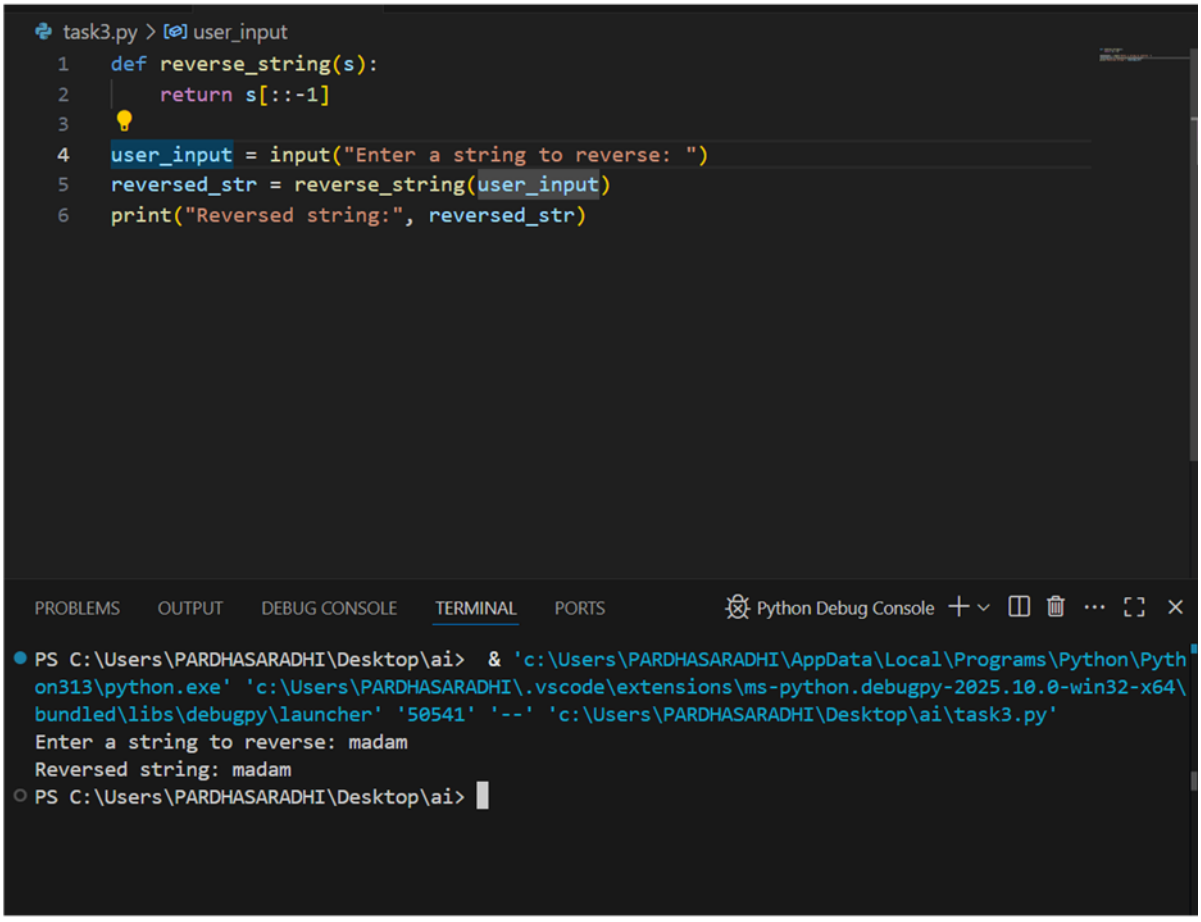
Enrollment_number : 2403A52004

Batch_no : 01

1.Generate a python code to check whether a number is prime or not and take input in dynamic way



2.Generate a python code to reverse a string using function and take input in dynamic way



3.Generate both recursive and iterative version of a factorial using comments by python program

recursive and iteartive.py > ...

```python
# Recursive version of factorial with dynamic input
def factorial_recursive(n):
    if n == 0 or n == 1:
        return 1
    else:
        return n * factorial_recursive(n - 1)

# Iterative version of factorial with dynamic input
def factorial_iterative(n):
    result = 1
    for i in range(2, n + 1):
        result *= i
    return result

# Get dynamic input from user
num = int(input("Enter a number to calculate its factorial: "))

print(f"Recursive: Factorial of {num} is {factorial_recursive(num)}")
print(f"Iterative: Factorial of {num} is {factorial_iterative(num)}")
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug Console

```
PS C:\Users\PARDHASARADHI\Desktop\ai> & 'c:\Users\PARDHASARADHI\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\PARDHASARADHI\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher' '51467' '--' 'c:\Users\PARDHASARADHI\Desktop\ai\recursive and iteartive.py'
Enter a number to calculate its factorial: 5
Recursive: Factorial of 5 is 120
Iterative: Factorial of 5 is 120
PS C:\Users\PARDHASARADHI\Desktop\ai>
```

4.Generate a python code to find the largest number in a list and assess code *quality* and efficiency

larget number.py > ...

```python
# Python program to find the largest number in a list with dynamic input
# Take input from user
numbers = input("Enter numbers separated by spaces: ").split()
# Convert input strings to integers
numbers = [int(num) for num in numbers]
# Find and print the largest number
if numbers:
    print("The largest number is:", max(numbers))
else:
    print("No numbers were entered.")
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug Console

```
PS C:\Users\PARDHASARADHI\Desktop\ai> & 'c:\Users\PARDHASARADHI\AppData\Local\Programs\Python\Python313\python.exe' 'c:\Users\PARDHASARADHI\.vscode\extensions\ms-python.debugpy-2025.10.0-win32-x64\bundled\libs\debugpy\launcher' '51521' '--' 'c:\Users\PARDHASARADHI\Desktop\ai\larget number.py'
Enter numbers separated by spaces: 5 7 25 78 55
The largest number is: 78
PS C:\Users\PARDHASARADHI\Desktop\ai>
```