

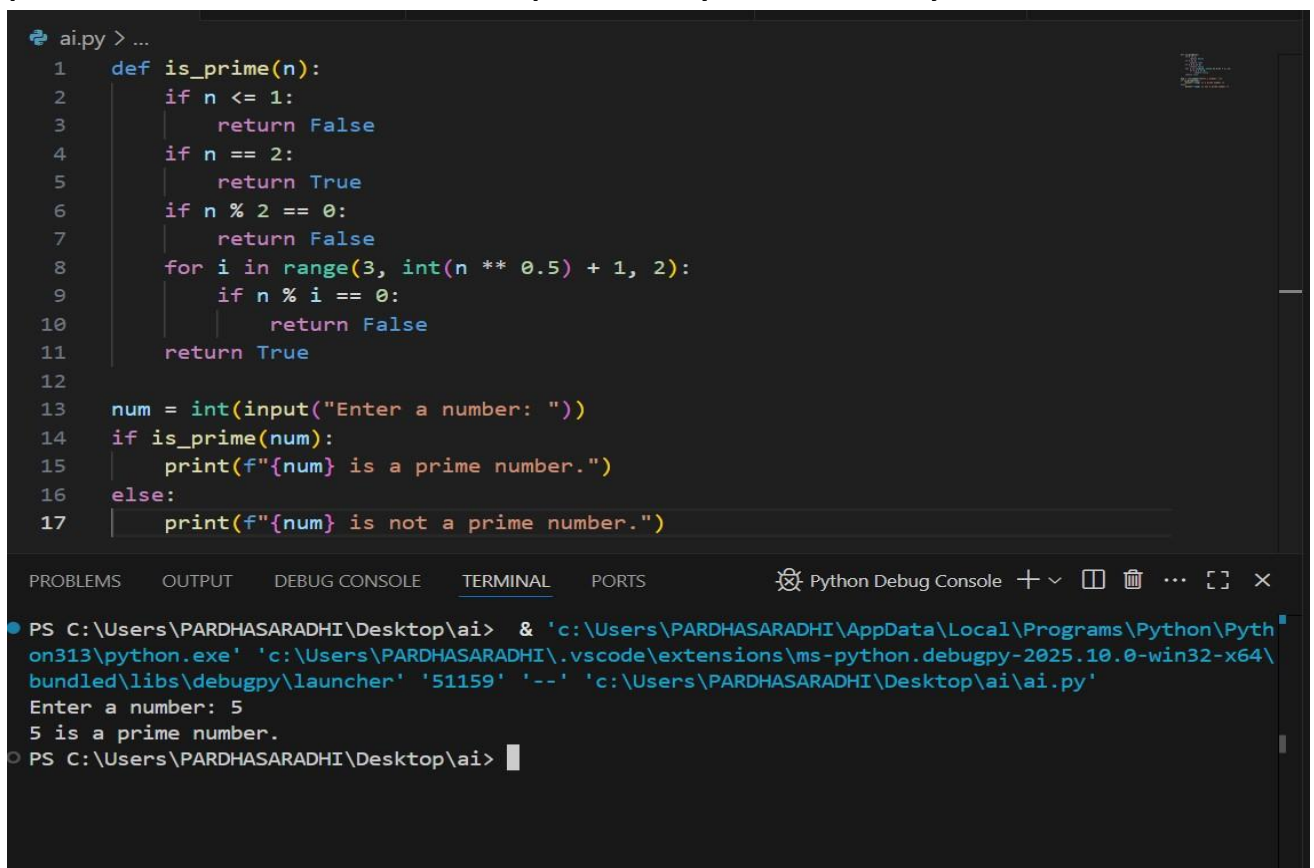
LAB ASSIGNMENT-1

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



```
ai.py > ...
1  def is_prime(n):
2      if n <= 1:
3          return False
4      if n == 2:
5          return True
6      if n % 2 == 0:
7          return False
8      for i in range(3, int(n ** 0.5) + 1, 2):
9          if n % i == 0:
10             return False
11     return True
12
13     num = int(input("Enter a number: "))
14     if is_prime(num):
15         print(f"{num} is a prime number.")
16     else:
17         print(f"{num} is not a prime number.")
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug Console + - [] [x] [] [x]

```
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' '51159' '--' 'c:\Users\PARDHASARADHI\Desktop\ai\ai.py'
Enter a number: 5
5 is a prime number.
PS C:\Users\PARDHASARADHI\Desktop\ai> |
```

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

```
task3.py > [?] user_input
1  def reverse_string(s):
2      return s[::-1]
3
4  user_input = input("Enter a string to reverse: ")
5  reversed_str = reverse_string(user_input)
6  print("Reversed string:", reversed_str)
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS Python Debug Console + - [] [x] [] [x]

- 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' '50541' '--' 'c:\Users\PARDHASARADHI\Desktop\ai\task3.py'
Enter a string to reverse: madam
Reversed string: madam
- PS C:\Users\PARDHASARADHI\Desktop\ai>

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

```
recursive and iterative.py > ...  
1 # Recursive version of factorial with dynamic input  
2 def factorial_recursive(n):  
3     if n == 0 or n == 1:  
4         return 1  
5     else:  
6         return n * factorial_recursive(n - 1)  
7  
8 # Iterative version of factorial with dynamic input  
9 def factorial_iterative(n):  
10     result = 1  
11     for i in range(2, n + 1):  
12         result *= i  
13     return result  
14  
15 # Get dynamic input from user  
16 num = int(input("Enter a number to calculate its factorial: "))  
17  
18 print(f"Recursive: Factorial of {num} is {factorial_recursive(num)}")  
19 print(f"Iterative: Factorial of {num} is {factorial_iterative(num)}")
```

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

```
target number.py > ...
1 # Python program to find the largest number in a list with dynamic input
2 # Take input from user
3 numbers = input("Enter numbers separated by spaces: ").split()
4 # Convert input strings to integers
5 numbers = [int(num) for num in numbers]
6 # Find and print the largest number
7 if numbers:
8     print("The largest number is:", max(numbers))
9 else:
10    print("No numbers were entered.")
```