

LAB ASSIGNMENT : 1.3

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BATCH: 05

BRANCH: CSE

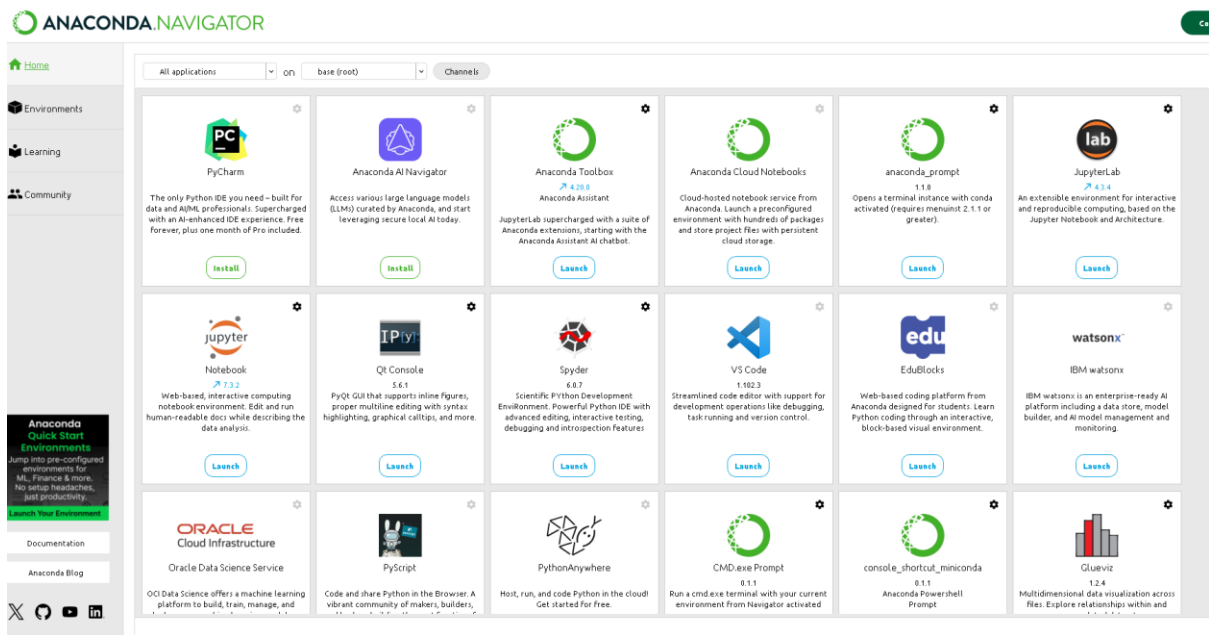
SUB: AI ASSISTED CODING

TASK - 01

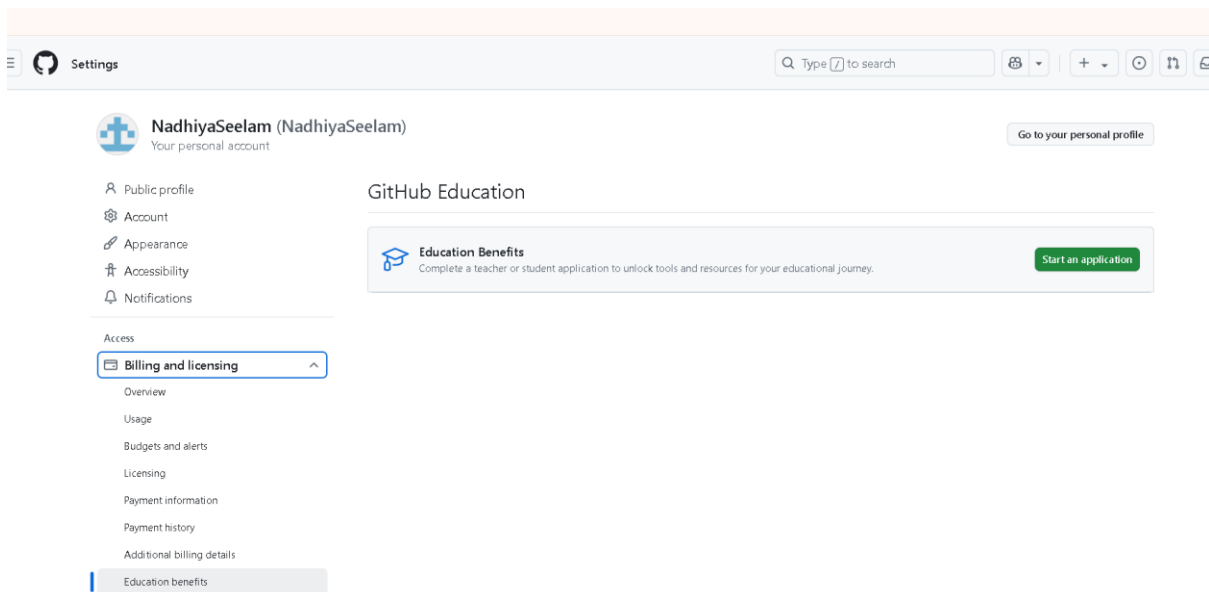
Screen shot-1

The screenshot displays the Anaconda website's installer page. At the top, the Anaconda logo is on the left, and navigation links for Products, Solutions, Resources, and Company are in the center. On the right, there are links for 'Free Download', 'Sign In', and a green 'Get Demo' button. The main content is divided into two columns: 'Distribution Installers' and 'Miniconda Installers'. Each column has a 'Download' button and a link to 'troubleshooting'. Under 'Distribution Installers', there are three expandable sections: 'Windows' (showing 'Python 3.13' and a '64-Bit Graphical Installer (914M)' download link), 'Mac', and 'Linux'. The 'Miniconda Installers' column has similar expandable sections for 'Windows', 'Mac', and 'Linux'. A small chatbot bubble with the text 'Hi, how can I help?' is visible in the bottom right corner of the screenshot.

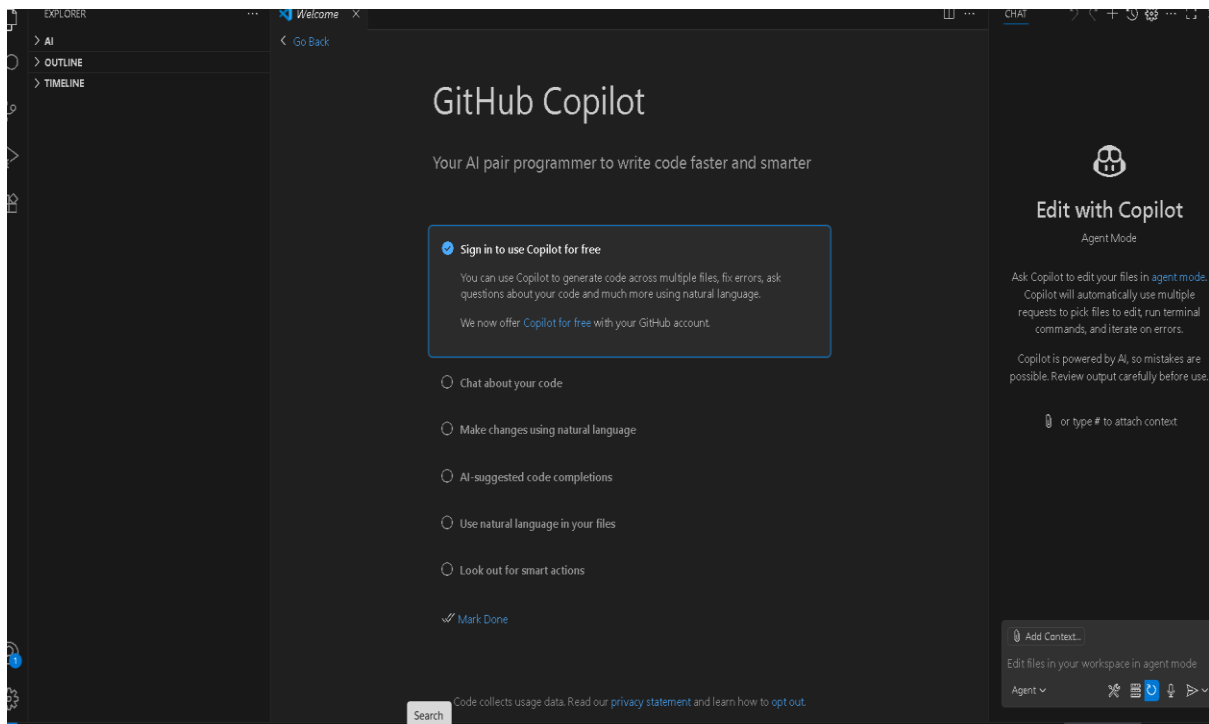
Screen shot-2



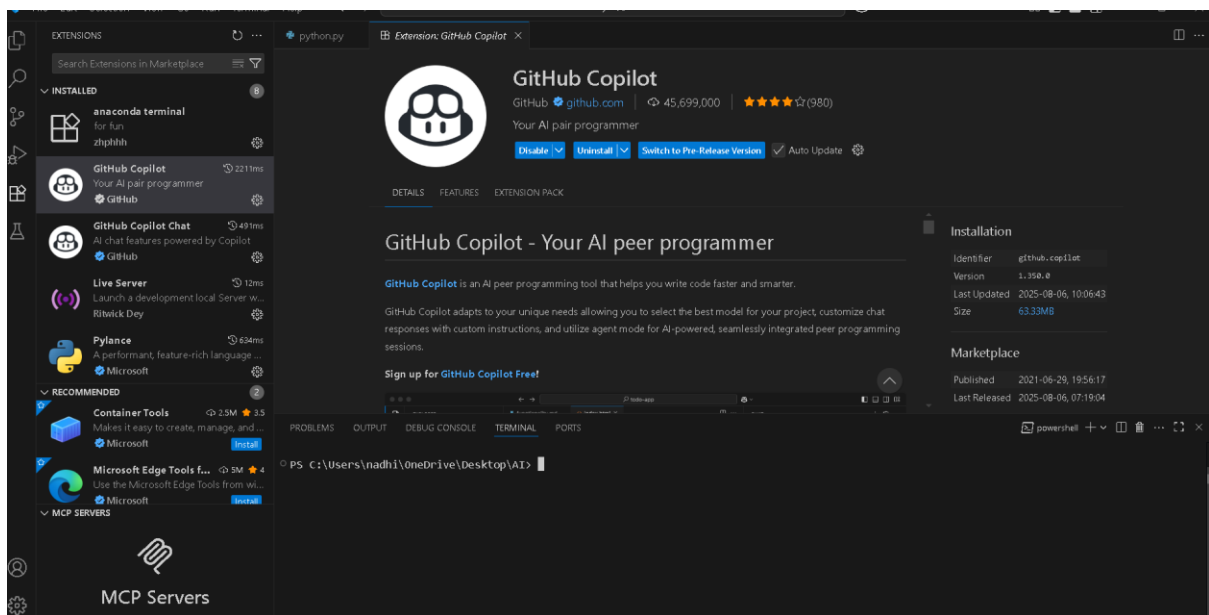
Screen shot-3



Screen shot-4



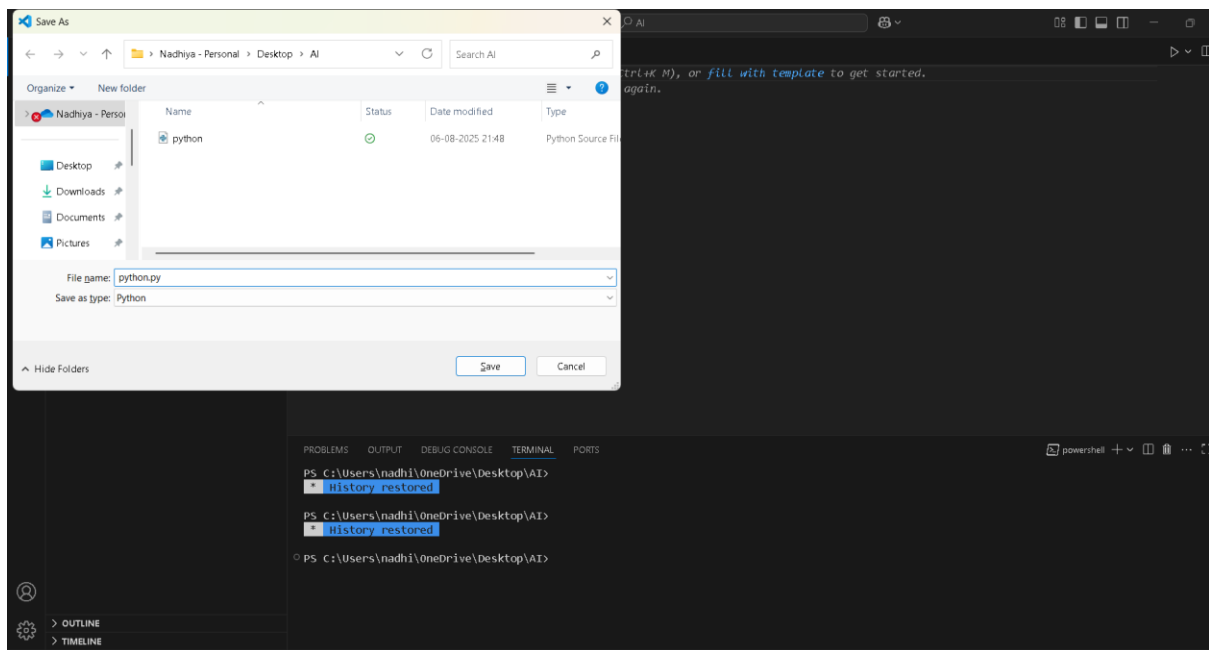
Screen shot-5



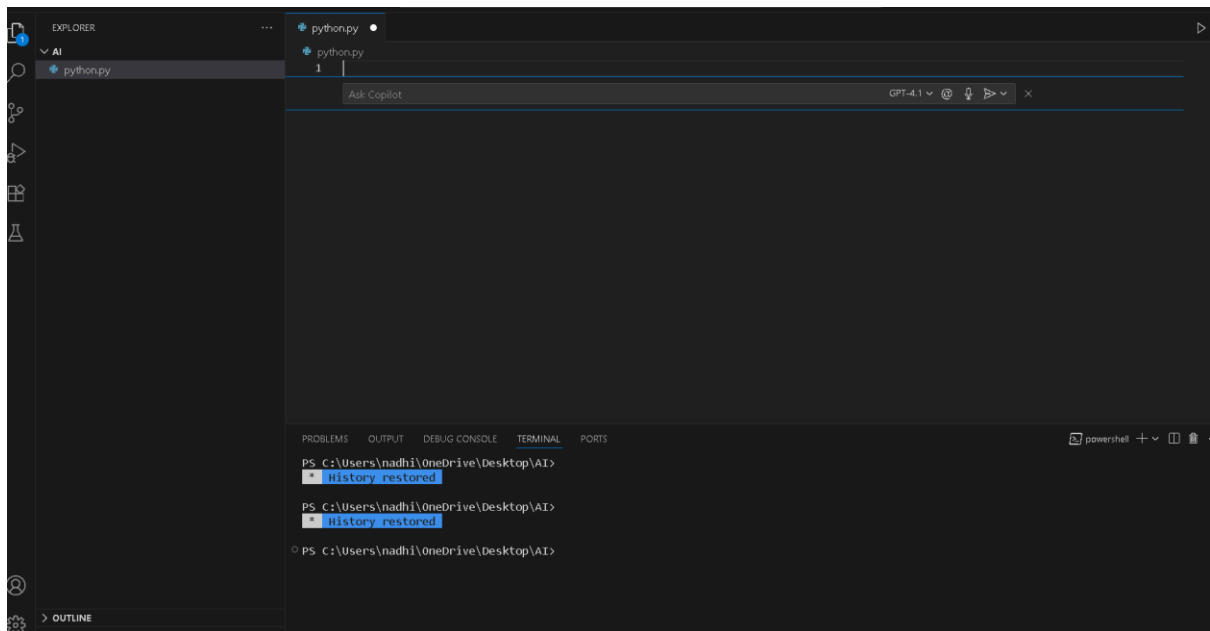
Screen shot-6



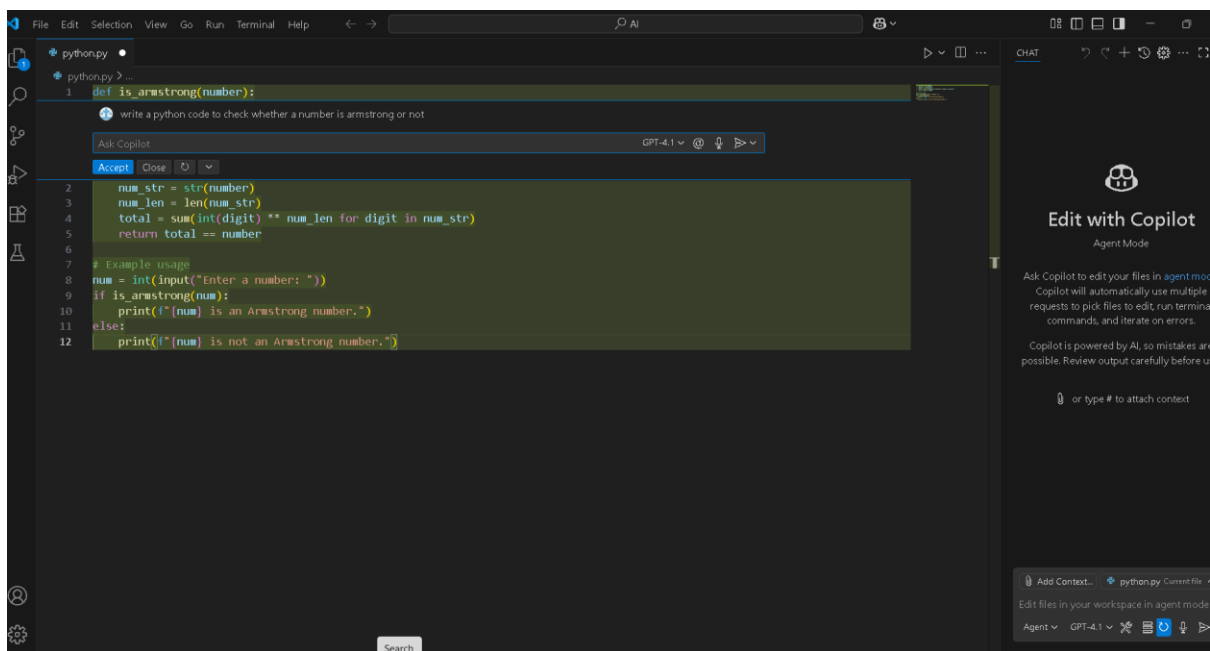
Screen shot-7



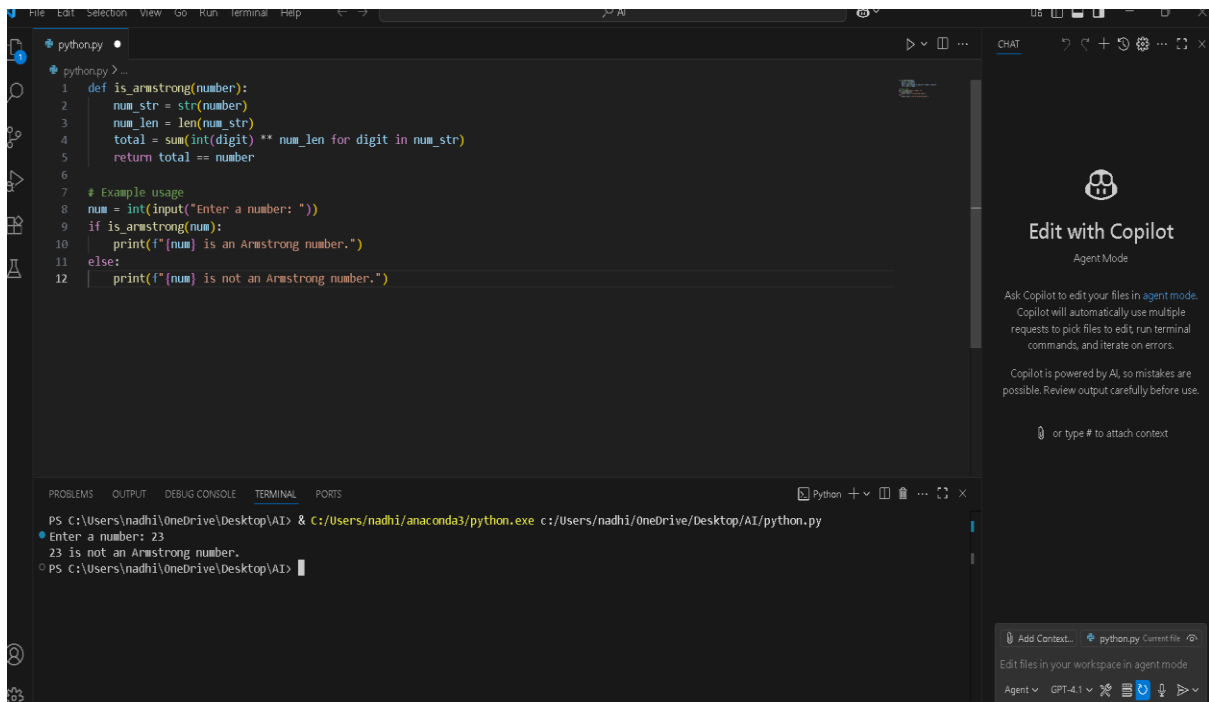
Screen shot-8



Screen shot-9

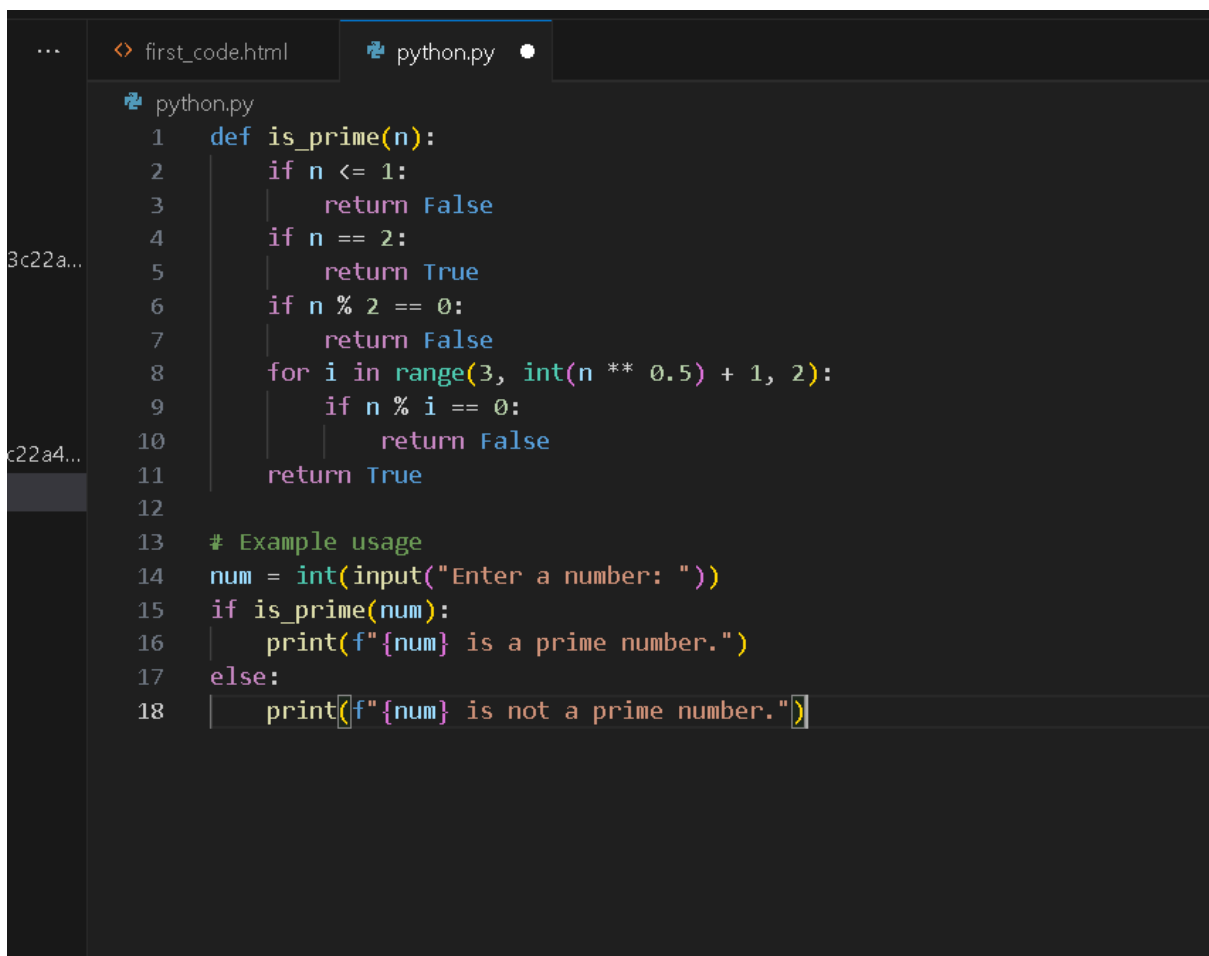


Screen shot-9



TASK – 02

Prompt : Write a python code to check whether a number is prime or not.

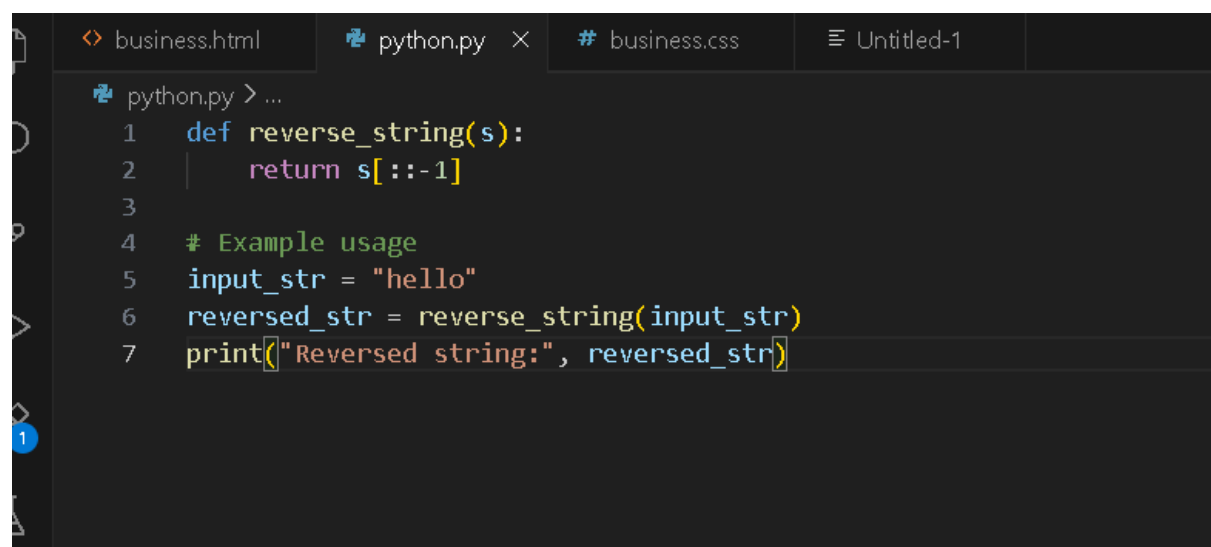


Output: 2 is prime number

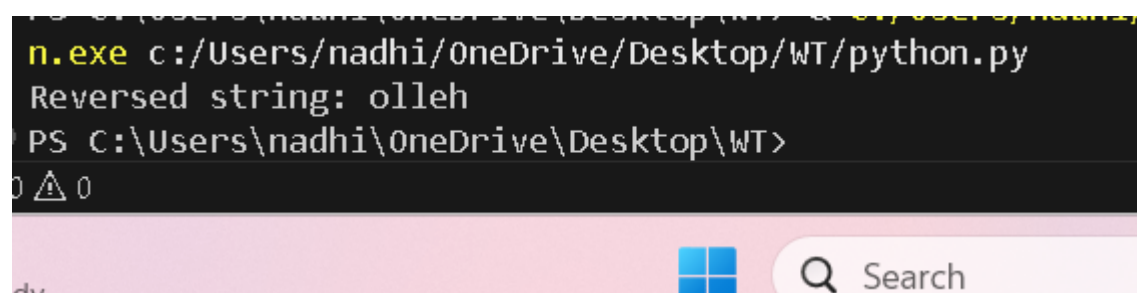
Explanation:

- The code checks if a given number is prime.
- A prime number is a number greater than 1 that has no divisors other than 1 and itself.
- The code usually:
 - Returns False if the number is less than or equal to 1.
 - Loops from 2 up to the square root of the number.
 - If the number is divisible by any of these, it returns False.
 - If no divisors are found, it returns True.

Task-3:



```
python.py > ...
1  def reverse_string(s):
2      return s[::-1]
3
4  # Example usage
5  input_str = "hello"
6  reversed_str = reverse_string(input_str)
7  print("Reversed string:", reversed_str)
```



```
python.exe c:/Users/nadhi/OneDrive/Desktop/WT/python.py
Reversed string: olleh
PS C:\Users\nadhi\OneDrive\Desktop\WT>
```

Explanation:

- The function `reverse_string(s)` takes a string `s` as input and returns its reverse using slicing (`s[::-1]`).
- The example usage sets `input_str` to "hello".
- It calls `reverse_string(input_str)`, which returns "olleh", and stores it in `reversed_str`.
- Finally, it prints Reversed string: olleh to the console

Task-04:

```
python.py > ...
1  # Recursive version of factorial
2  def factorial_recursive(n):
3      """
4      Calculate factorial of n recursively.
5      """
6      if n == 0 or n == 1:
7          return 1
8      else:
9          return n * factorial_recursive(n - 1)
10
11 # Iterative version of factorial
12 def factorial_iterative(n):
13     """
14     Calculate factorial of n iteratively.
15     """
16     result = 1
17     for i in range(2, n + 1):
18         result *= i
19     return result
20
21 # Example usage
22 if __name__ == "__main__":
23     num = 5
24     print("Recursive:", factorial_recursive(num)) # Output: 120
25     print("Iterative:", factorial_iterative(num)) # Output: 120
```

```
reversed_string: olleh
PS C:\Users\nadhi\OneDrive\Desktop\WT> & C:/Users/nadhi/AppData/Local/Programs/Python/Python313/python.exe c:/Users/nadhi/OneDrive/Desktop/WT/python.py
Recursive: 120
Iterative: 120
```

Explanation:

- This function calculates the factorial of `n` using recursion.
 - If `n` is 0 or 1, it returns 1 (base case).
 - Otherwise, it returns `n * factorial_recursive(n - 1)`.

- **factorial_iterative(n):**

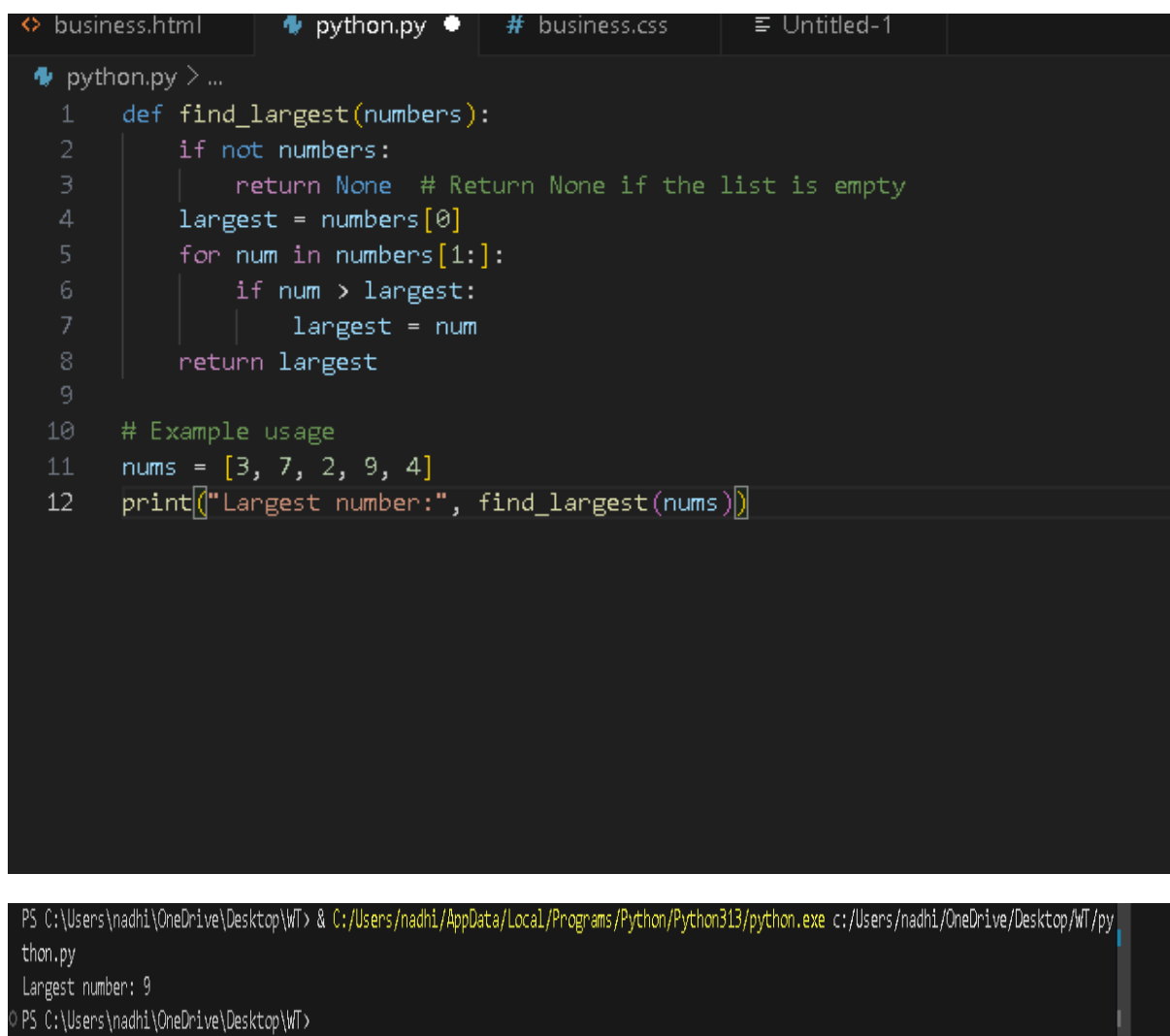
This function calculates the factorial of n using a loop.

- It initializes result to 1.
- Then multiplies result by each number from 2 up to n.

- **Example usage:**

- If the script is run directly, it sets num = 5.
- It prints the factorial of 5 using both the recursive and iterative functions.
- Both methods output 120.

Task-05:



The image shows a code editor with a dark theme. The top bar has tabs for 'business.html', 'python.py', 'business.css', and 'Untitled-1'. The 'python.py' tab is active, showing a Python script. The script defines a function 'find_largest' that finds the maximum value in a list. It includes an example usage section with a list 'nums' and a print statement. Below the code editor is a terminal window showing the command to run the script and the output 'Largest number: 9'.

```
<> business.html python.py # business.css ≡ Untitled-1
python.py > ...
1 def find_largest(numbers):
2     if not numbers:
3         return None # Return None if the list is empty
4     largest = numbers[0]
5     for num in numbers[1:]:
6         if num > largest:
7             largest = num
8     return largest
9
10 # Example usage
11 nums = [3, 7, 2, 9, 4]
12 print("Largest number:", find_largest(nums))

PS C:\Users\nadhi\OneDrive\Desktop\WT> & C:/Users/nadhi/AppData/Local/Programs/Python/Python313/python.exe c:/Users/nadhi/OneDrive/Desktop/WT/python.py
Largest number: 9
PS C:\Users\nadhi\OneDrive\Desktop\WT>
```

Explanation:

- **find_largest(numbers):**

This function takes a list of numbers and returns the largest value.

- If the list is empty, it returns None.
- It starts by assuming the first number is the largest.
- It then loops through the rest of the list, updating [largest](#) if it finds a bigger number.
- Finally, it returns the largest number found.

- **Example usage:**

- A list [nums = \[3, 7, 2, 9, 4\]](#) is defined.
- The function is called with this list, and the result is printed.
- Output: Largest number: 9