LAB ASSIGNMENT-1.3

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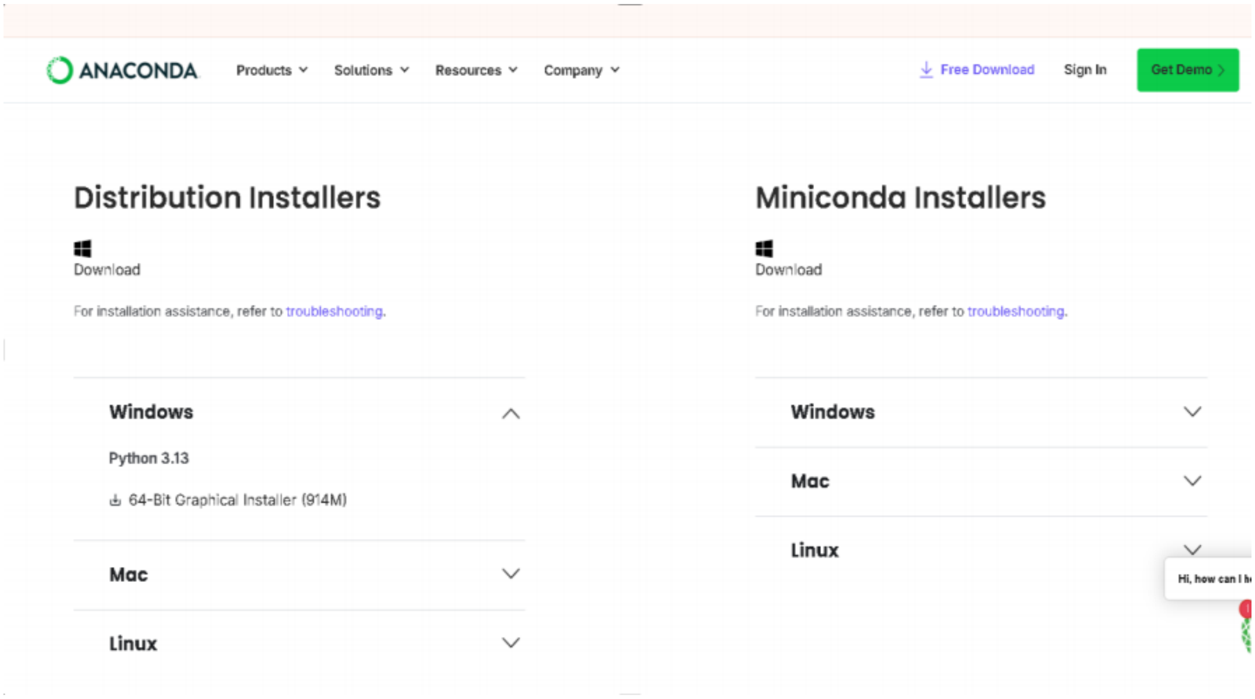
Rollno : 2403A510A7
Batch : 05
Course : AI Assisted Coding

TASK – 01

- Prompt: To get the Successful Setup of Copilot

Screen shot-1



Distribution Installers

Download

For installation assistance, refer to troubleshooting.

Windows

Python 3.13

64-Bit Graphical Installer (914M)

Mac

Linux

Miniconda Installers

Download

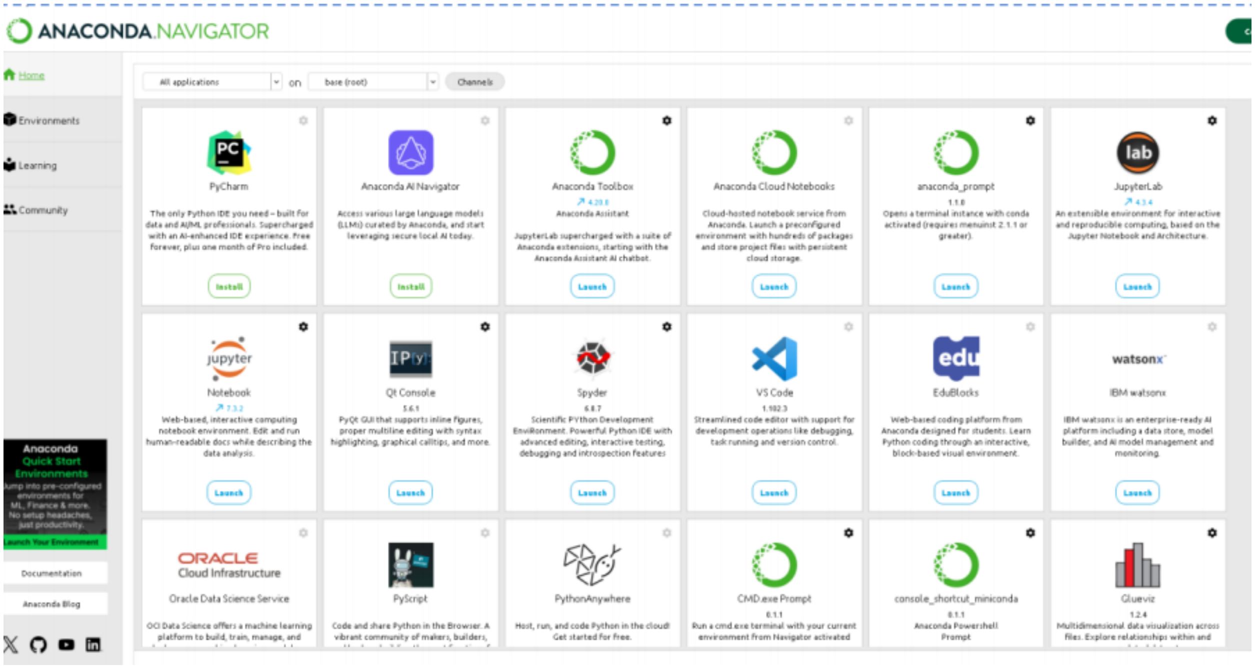
For installation assistance, refer to troubleshooting.

Windows

Mac

Linux

Screen shot-2



Jump into pre-configured environments for ML, Finance & more. No setup headaches, just productivity.

PyCharm
The only Python IDE you need – built for data and AI/ML professionals. Supercharged with an AI-enhanced IDE experience. Free forever, plus one month of Pro included.

Anaconda AI Navigator
Access various large language models (LLMs) curated by Anaconda, and start leveraging secure local AI today.

Anaconda Toolbox
↗ 4.20.0
Anaconda Assistant
JupyterLab supercharged with a suite of Anaconda extensions, starting with the Anaconda Assistant AI chatbot.

Anaconda Cloud Notebooks
Cloud-hosted notebook service from Anaconda. Launch a preconfigured environment with hundreds of packages and store project files with persistent cloud storage.

anaconda_prompt
1.1.0
Opens a terminal instance with conda activated (requires menuinst 2.1.1 or greater).

JupyterLab
↗ 4.3.4
An extensible environment for interactive and reproducible computing, based on the Jupyter Notebook and Architecture.

Notebook
↗ 7.3.2
Web-based, interactive computing notebook environment. Edit and run human-readable docs while describing the data analysis.

Qt Console
5.6.1
PyQt GUI that supports inline figures, proper multiline editing with syntax highlighting, graphical calltips, and more.

Spyder
6.0.7
Scientific PYthon Development EnviRonment. Powerful Python IDE with advanced editing, interactive testing, debugging and introspection features

VS Code
1.102.3
Streamlined code editor with support for development operations like debugging, task running and version control.

EduBlocks
Web-based coding platform from Anaconda designed for students. Learn Python coding through an interactive, block-based visual environment.

IBM watsonx
IBM watsonx is an enterprise-ready AI platform including a data store, model builder, and AI model management and monitoring.

Oracle Data Science Service
OCI Data Science offers a machine learning platform to build, train, manage, and

PyScript
Code and share Python in the Browser. A vibrant community of makers, builders,

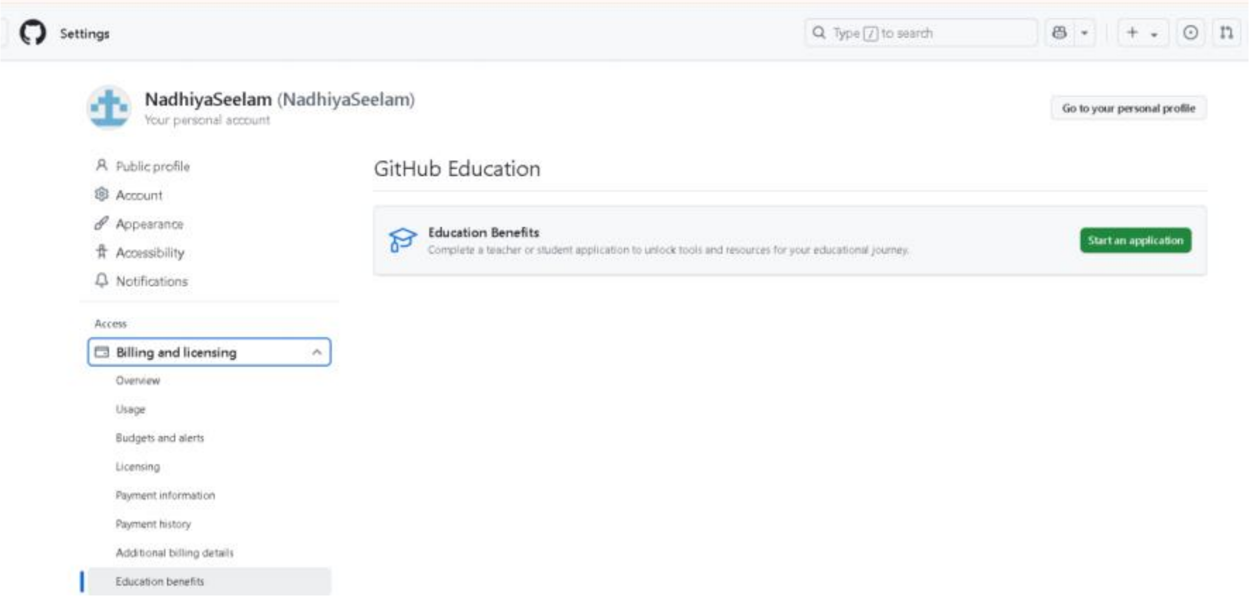
PythonAnywhere
Host, run, and code Python in the cloud! Get started for free.

CMD.exe Prompt
0.1.1
Run a cmd.exe terminal with your current environment from Navigator activated

console_shortcut_miniconda
0.1.1
Anaconda Powershell Prompt

Glueviz
1.2.4
Multidimensional data visualization across files. Explore relationships within and

Screen shot-3

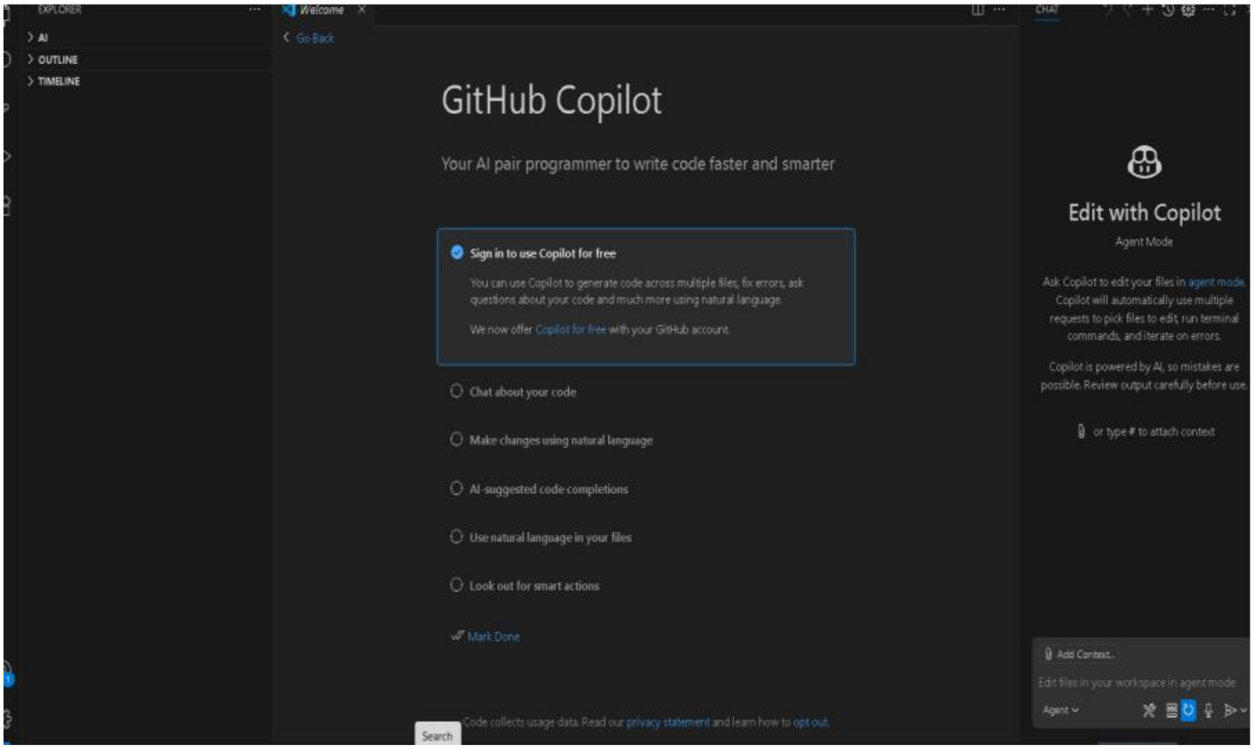


NadhiyaSeelam (NadhiyaSeelam)
Your personal account

GitHub Education

Education Benefits
Complete a teacher or student application to unlock tools and resources for your educational journey.

Screen shot-4



GitHub Copilot

Your AI pair programmer to write code faster and smarter

● Sign in to use Copilot for free

You can use Copilot to generate code across multiple files, fix errors, ask questions about your code and much more using natural language.

We now offer Copilot for free with your GitHub account.

○ Chat about your code

○ Make changes using natural language

○ AI-suggested code completions

○ Use natural language in your files

○ Look out for smart actions

✓ Mark Done

Code collects usage data. Read our privacy statement and learn how to opt out.

Edit with Copilot

Agent Mode

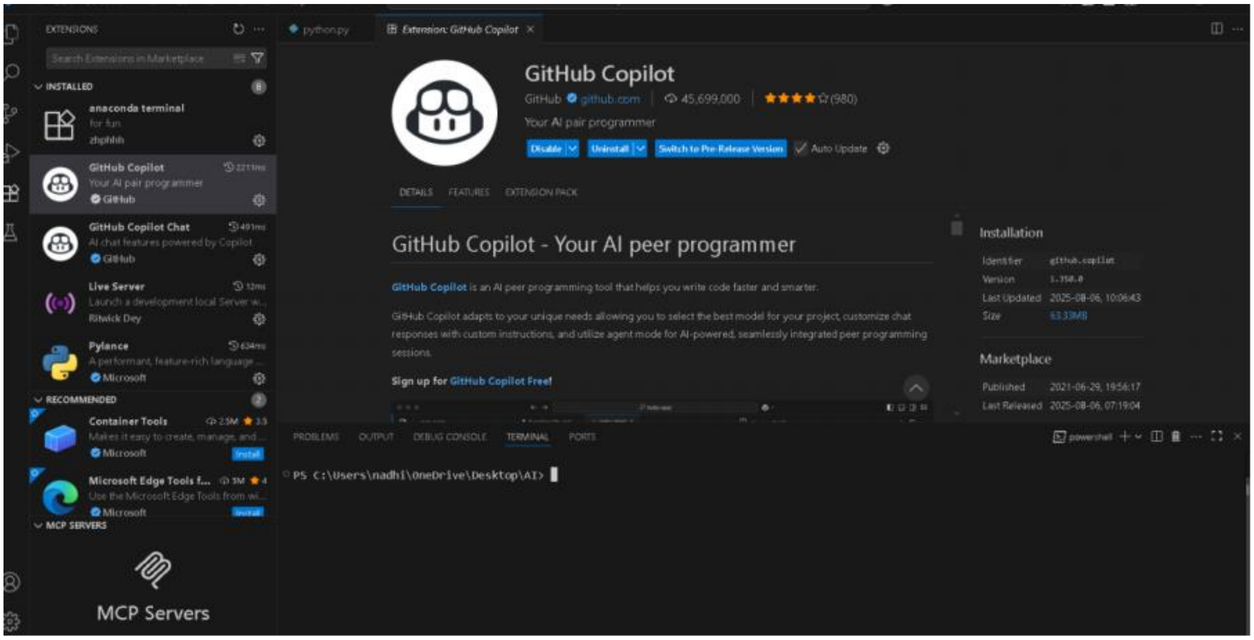
Ask Copilot to edit your files in agent mode. Copilot will automatically use multiple requests to pick files to edit, run terminal commands, and iterate on errors.

Copilot is powered by AI, so mistakes are possible. Review output carefully before use.

or type # to attach context

Edit files in your workspace in agent mode

Screen shot-5



GitHub Copilot

GitHub github.com | 45,699,000 | ★★★★☆ (980)

Your AI pair programmer

GitHub Copilot - Your AI peer programmer

GitHub Copilot is an AI peer programming tool that helps you write code faster and smarter.

GitHub Copilot adapts to your unique needs allowing you to select the best model for your project, customize chat responses with custom instructions, and utilize agent mode for AI-powered, seamlessly integrated peer programming sessions.

Sign up for GitHub Copilot Free!

Installation

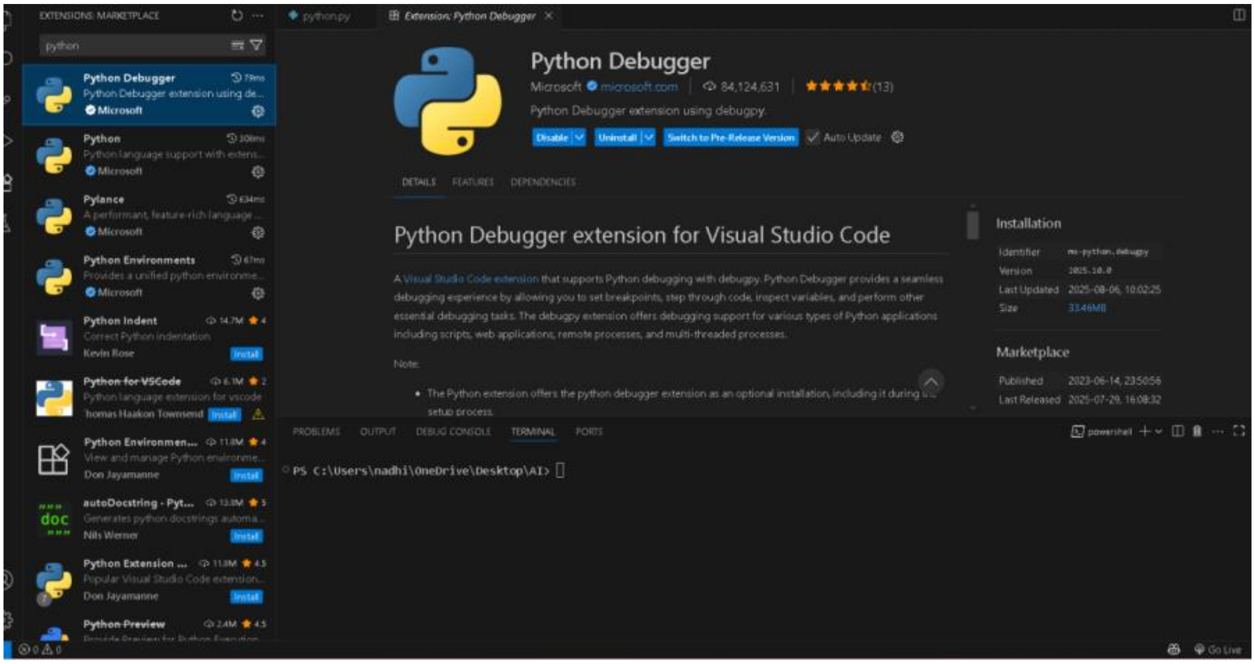
Identifier	github.copilot
Version	1.350.0
Last Updated	2025-08-06, 10:06:43
Size	63.33MB

Marketplace

Published	2021-06-29, 19:56:17
Last Released	2025-08-06, 07:19:04

```
PS C:\Users\nadhi\OneDrive\Desktop\AI>
```

Screen shot-6



Python Debugger

Microsoft microsoft.com | 84,124,631 | ★★★★☆(13)

Python Debugger extension using debugpy.

Python Debugger extension for Visual Studio Code

A Visual Studio Code extension that supports Python debugging with debugpy. Python Debugger provides a seamless debugging experience by allowing you to set breakpoints, step through code, inspect variables, and perform other essential debugging tasks. The debugpy extension offers debugging support for various types of Python applications including scripts, web applications, remote processes, and multi-threaded processes.

Note:

- The Python extension offers the python debugger extension as an optional installation, including it during the setup process.

Installation

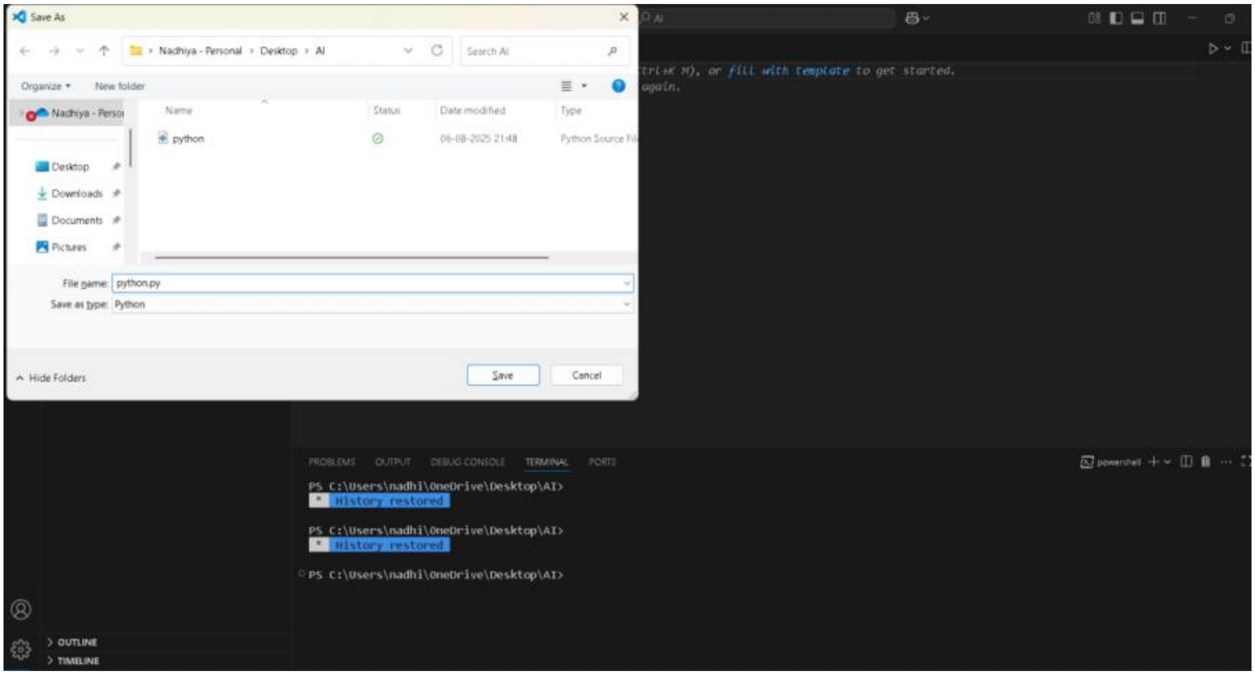
Identifier	ms-python.debugpy
Version	2025.10.0
Last Updated	2025-08-06, 10:02:25
Size	33.46MB

Marketplace

Published	2023-06-14, 23:50:56
Last Released	2025-07-29, 16:08:32

```
PS C:\Users\nadhi\OneDrive\Desktop\AI> 
```

Screen shot-7

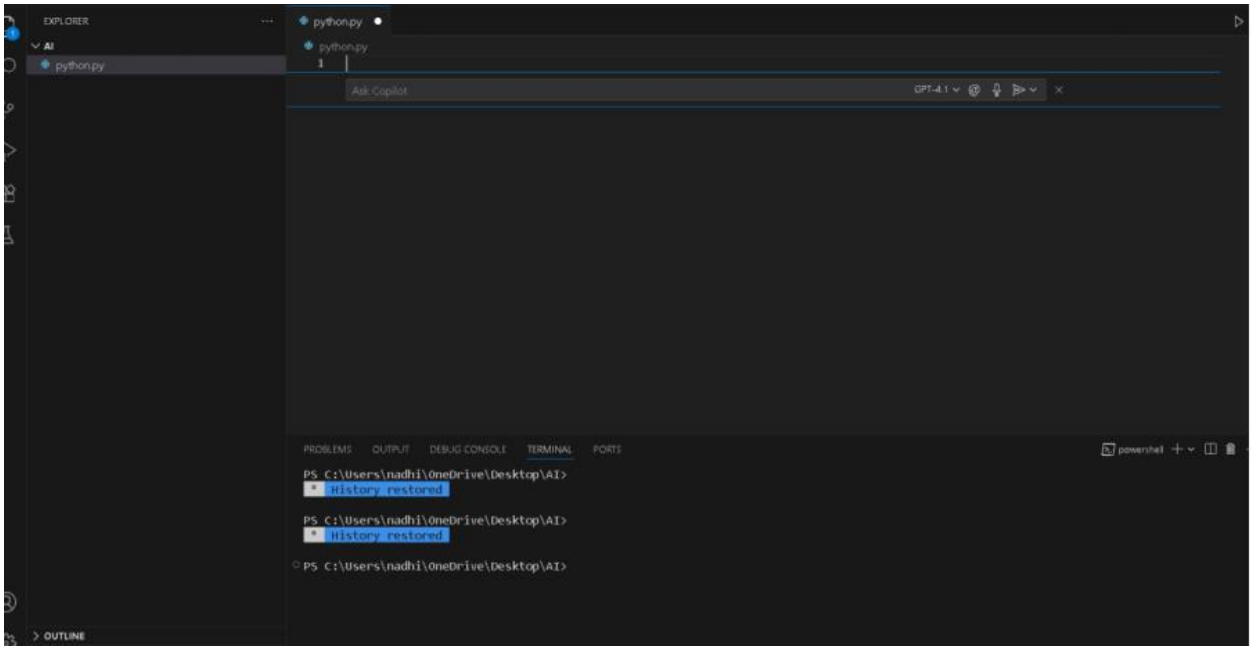


File name: python.py

Save as type: Python

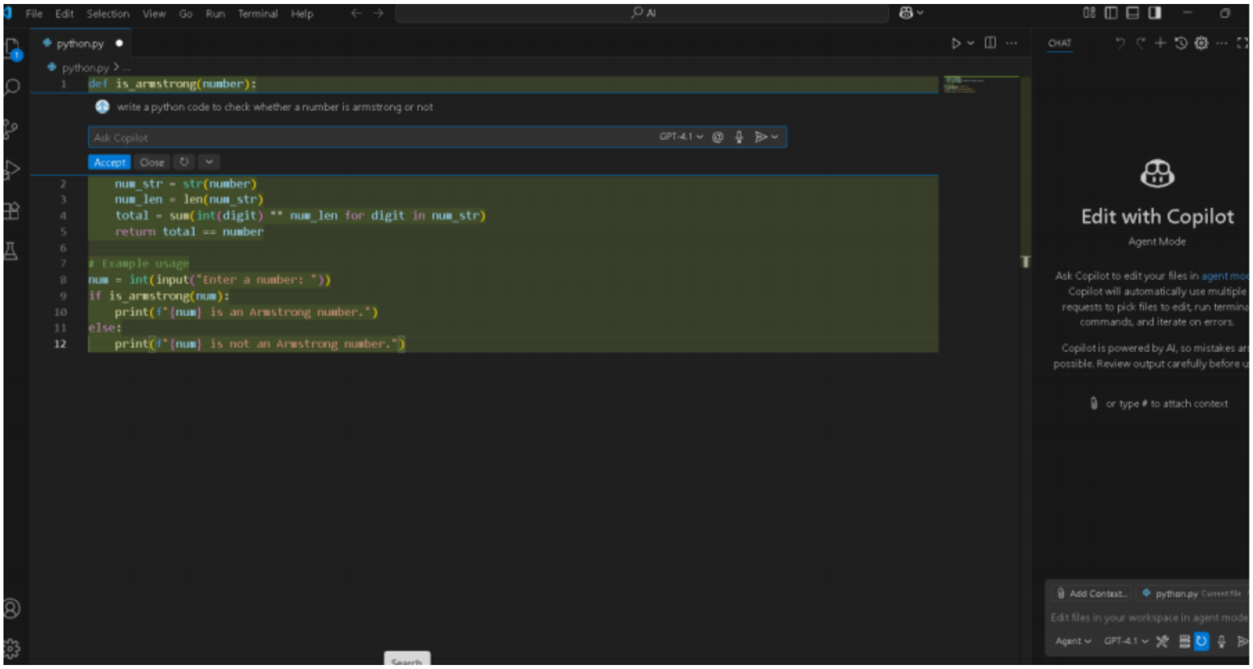
```
PS C:\Users\nadhi\OneDrive\Desktop\AI>
 *  History restored 

PS C:\Users\nadhi\OneDrive\Desktop\AI>
 *  History restored 

PS C:\Users\nadhi\OneDrive\Desktop\AI>
```

Screen shot-8



```
PS C:\Users\nadhi\OneDrive\Desktop\AI>
 *  History restored

PS C:\Users\nadhi\OneDrive\Desktop\AI>
 *  History restored

PS C:\Users\nadhi\OneDrive\Desktop\AI>
```

Screen shot-9



write a python code to check whether a number is armstrong or not

```python
def is_armstrong(number):
    num_str = str(number)
    num_len = len(num_str)
    total = sum(int(digit) ** num_len for digit in num_str)
    return total == number

# Example usage
num = int(input("Enter a number: "))
if is_armstrong(num):
    print(f"{num} is an Armstrong number.")
else:
    print(f"{num} is not an Armstrong number.")
```

Edit with Copilot

Agent Mode

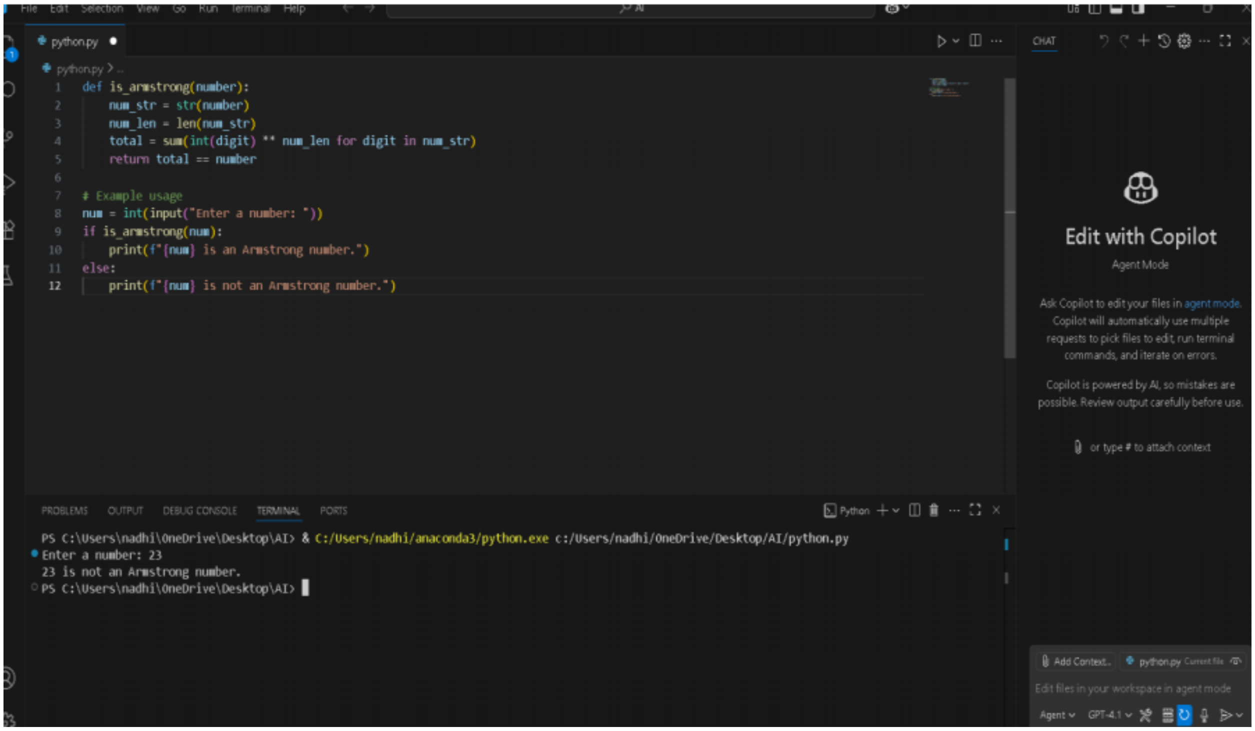
Ask Copilot to edit your files in agent mod
Copilot will automatically use multiple
requests to pick files to edit, run termina
commands, and iterate on errors.

Copilot is powered by AI, so mistakes ar
possible. Review output carefully before u

or type # to attach context

Edit files in your workspace in agent mode

Screen shot-10



File Edit Selection View Go Run Terminal Help
python.py
PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS
Python
CHAT
Edit with Copilot
Agent Mode
or type # to attach context
Add Context...
python.py Current file
Edit files in your workspace in agent mode
Agent
GPT-4.1

```python
def is_armstrong(number):
    num_str = str(number)
    num_len = len(num_str)
    total = sum(int(digit) ** num_len for digit in num_str)
    return total == number

# Example usage
num = int(input("Enter a number: "))
if is_armstrong(num):
    print(f"{num} is an Armstrong number.")
else:
    print(f"{num} is not an Armstrong number.")
```

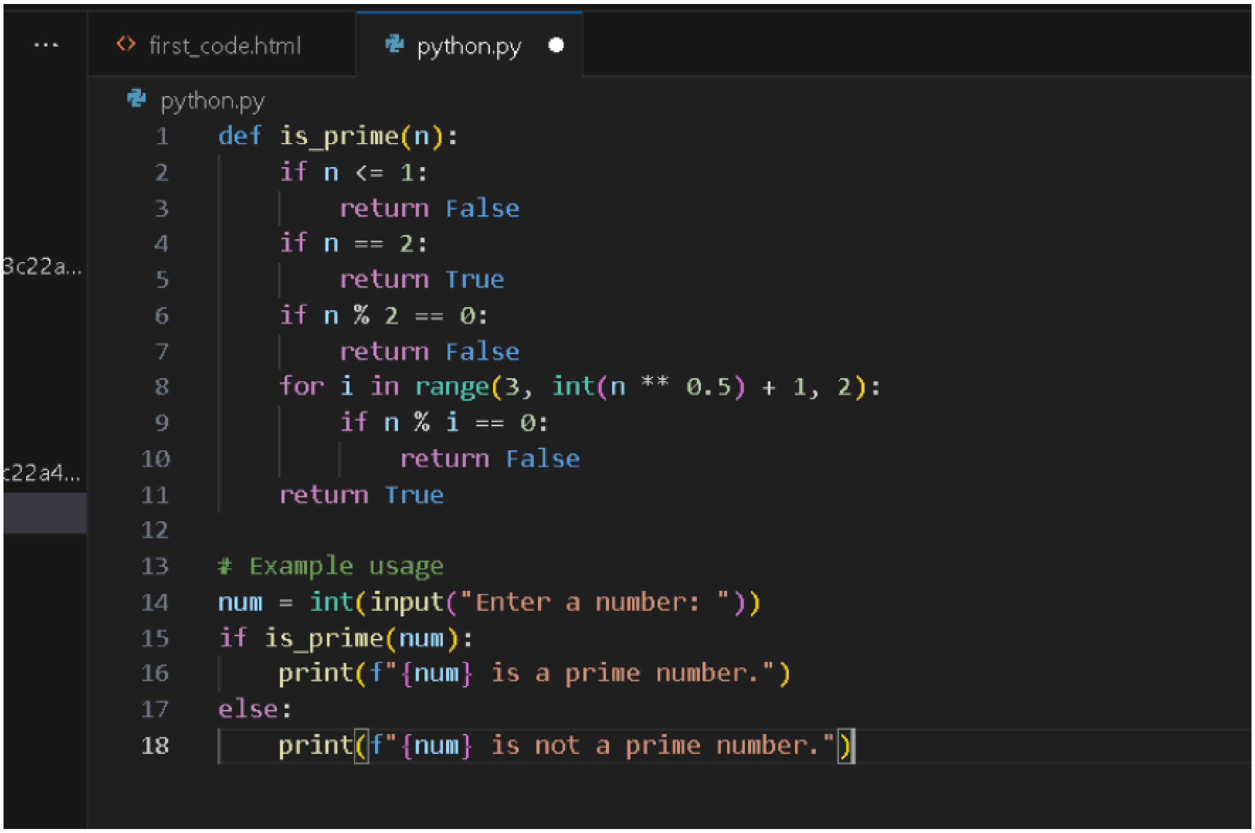
```
PS C:\Users\nadhi\OneDrive\Desktop\AI> & C:/Users/nadhi/anaconda3/python.exe c:/Users/nadhi/OneDrive/Desktop/AI/python.py
Enter a number: 23
23 is not an Armstrong number.
PS C:\Users\nadhi\OneDrive\Desktop\AI>
```

Ask Copilot to edit your files in agent mode. Copilot will automatically use multiple requests to pick files to edit, run terminal commands, and iterate on errors.

Copilot is powered by AI, so mistakes are possible. Review output carefully before use.

TASK – 02

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



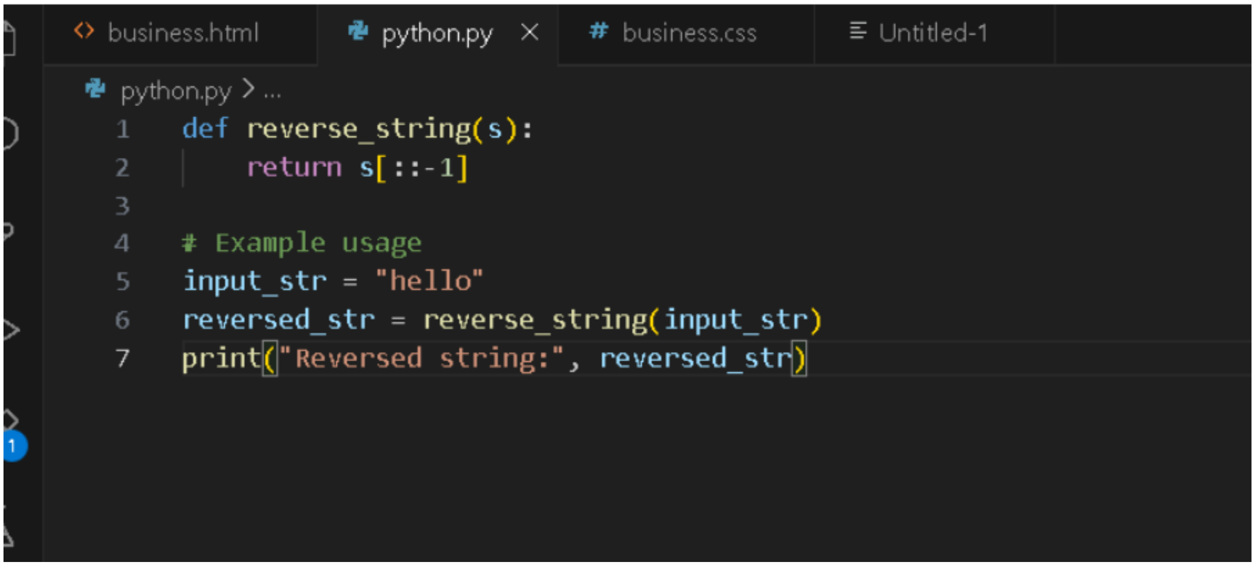
```python
def is_prime(n):
    if n <= 1:
        return False
    if n == 2:
        return True
    if n % 2 == 0:
        return False
    for i in range(3, int(n ** 0.5) + 1, 2):
        if n % i == 0:
            return False
    return True

# Example usage
num = int(input("Enter a number: "))
if is_prime(num):
    print(f"{num} is a prime number.")
else:
    print(f"{num} is not a prime number.")
```

Output: 2 is prime number

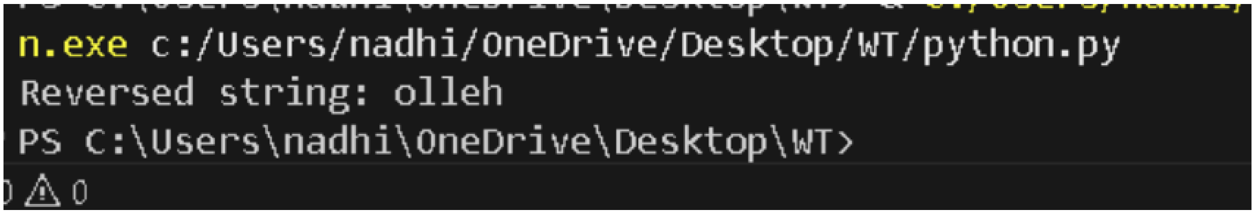
Explanation:

- he 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:➢ Prompt: Write a python code to check Reverse a string function



```python
def reverse_string(s):
    return s[::-1]

# Example usage
input_str = "hello"
reversed_str = reverse_string(input_str)
print("Reversed string:", reversed_str)
```



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

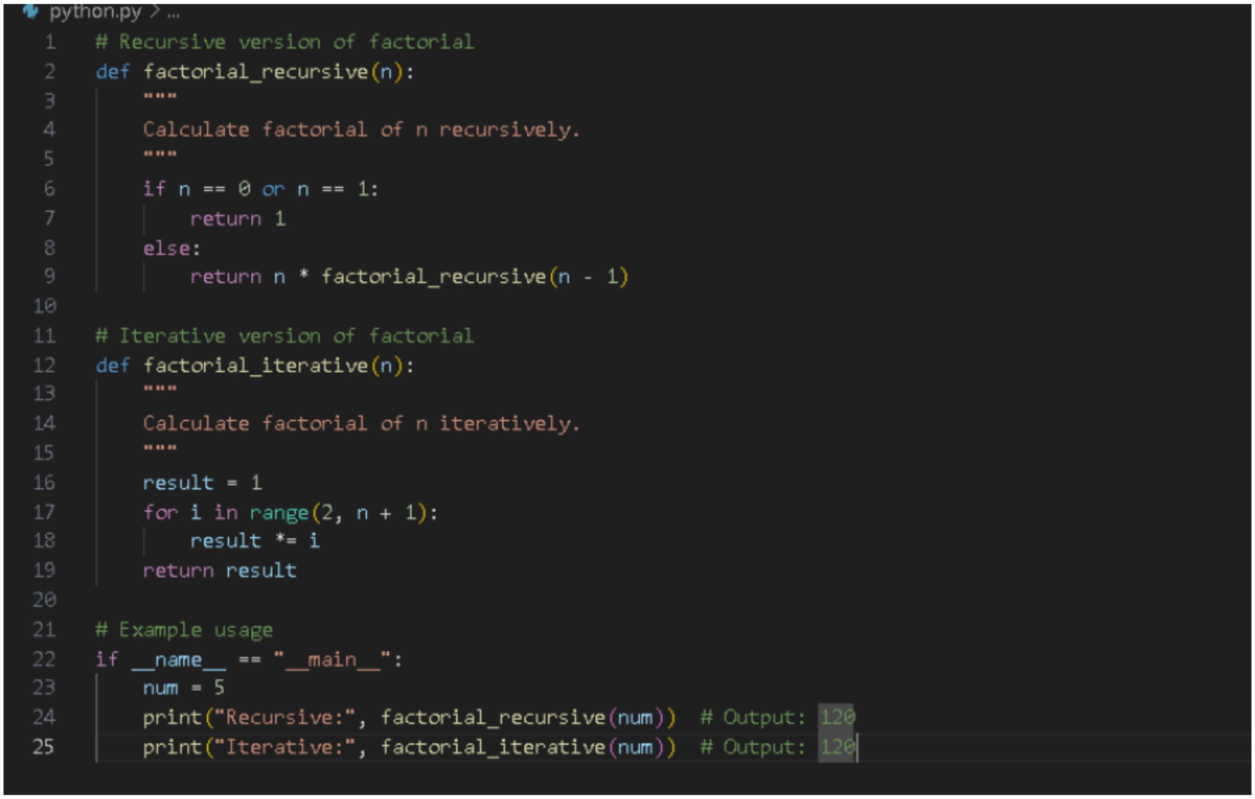
Explanation:

- The function reverse_string(s) takes a string s as input and returns its reverse using slicing (s[::-1]).

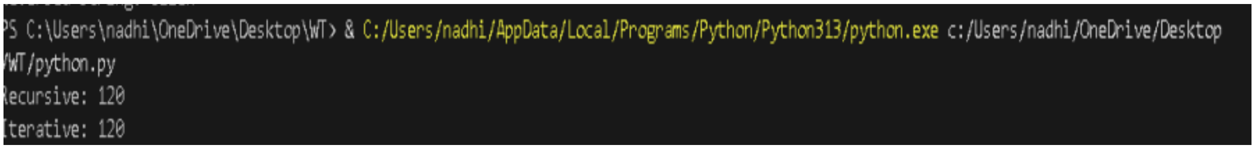
- The example usage sets input_str to "hello".
- It calls reverse_string(input_str), which returns "olleh", and stores it in reversed_str.
- Finally, it prints Reversed string: olleh to the console

Task-04:

➢ Prompt: Write a python code for Factorial



```python
# Recursive version of factorial
def factorial_recursive(n):
    """
    Calculate factorial of n recursively.
    """
    if n == 0 or n == 1:
        return 1
    else:
        return n * factorial_recursive(n - 1)

# Iterative version of factorial
def factorial_iterative(n):
    """
    Calculate factorial of n iteratively.
    """
    result = 1
    for i in range(2, n + 1):
        result *= i
    return result

# Example usage
if __name__ == "__main__":
    num = 5
    print("Recursive:", factorial_recursive(num))  # Output: 120
    print("Iterative:", factorial_iterative(num))  # Output: 120
```



```
S C:\Users\nadhi\OneDrive\Desktop\WT> & C:/Users/nadhi/AppData/Local/Programs/Python/Python313/python.exe c:/Users/nadhi/OneDrive/Desktop
WT/python.py
ecursive: 120
terative: 120
```

FunctionExplanation:

- 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.

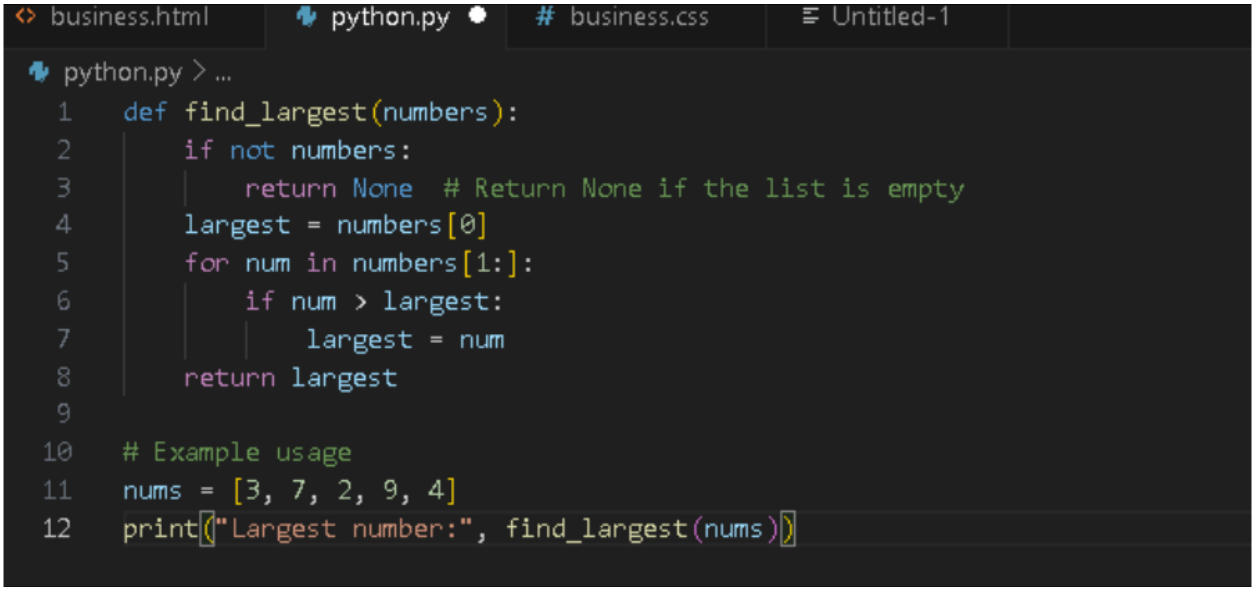
It initializes result to 1.

Then multiplies result by each number from 2 up to n.

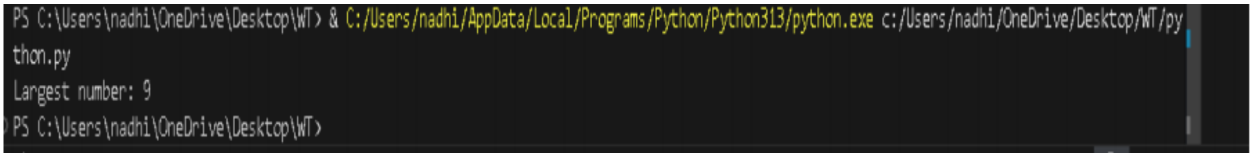
- **Example usage:**
 If the script is run directly, it sets num = 5.
It prints the factorial of 5 using both the recursive and iterative functions.
Both methods output 120.

Task-05:

➢ Prompt: Write a python code to check the given number is the largest number



```python
def find_largest(numbers):
    if not numbers:
        return None  # Return None if the list is empty
    largest = numbers[0]
    for num in numbers[1:]:
        if num > largest:
            largest = num
    return largest

# Example usage
nums = [3, 7, 2, 9, 4]
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/py
thon.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 i