WEEK 06

Submitted by : Zainab Bibi

Internship ID : TN/IN01/PY/018

Task : 01

Use math & statistics libraries to get square roots and average.

In the first task, I worked with the built-in Python libraries math and statistics. I created a list of numbers and used the math library to calculate the square root of each number. Then, using the statistics library, I calculated the average (mean) of those numbers.

This helped me understand how to use list comprehension with library functions and how to apply statistical calculations to a dataset. The output gave me a list of square roots and the average of the original numbers.

Task 1 & 2.py > ...

```python
import math
import statistics

numbers = [12, 32, 16, 25]
square_roots = [math.sqrt(num) for num in numbers]
print("Square Roots:", square_roots)
average = statistics.mean(numbers)
print("Average:", average)

```

Task : 02

Create a custom package and import it in another script.

I practiced creating and importing a custom package. I designed a package that contains two functions: one for calculating the square roots of a list of numbers and another for calculating the average.

Instead of writing the same logic again in the main script, I imported these functions from my custom package and used them. This method improved the readability and organization of my code and made it easier to reuse the same logic in multiple projects.

```python
from my_package import get_square_roots, get_average

nums = [4, 16, 25, 36]

print("Square Roots:", get_square_roots(nums))
print("Average:", get_average(nums))
```

Task : 03

Create a virtual environment, install requests & numpy, and print their versions.

In this task, I used Python to check the installed versions of two important libraries: requests and numpy. I simply printed their version numbers using their built-in __version__ attribute. This helped me confirm that both libraries are installed correctly and up to date.

```python
# Task 3
import requests
import numpy

print("Requests version:", requests.__version__)
print("NumPy version:", numpy.__version__)
```

Task : 04

Print list of all installed pip packages from Python code.

In this task, I used the pkg_resources module to get a list of all installed Python packages along with their versions. It printed each package with its name and version number. This is useful when I want to check my Python environment or share the list of dependencies with someone.

Task : 05

Create Gradio app that takes a number and returns its square.

In this task, I created a simple Gradio interface that calculates the square of a number. I defined a function that takes a number as input and returns its square. Then, I used gr.Interface to create a GUI where users can enter a number and get the square as output. When I launched the app, it opened in a browser with a clean interface.

Task 5 & 6.py > ...

```python
# Task 5
import gradio as gr

def squarecalculatinfunction(number):
    return number * number

iface = gr.Interface(
    fn=squarecalculatinfunction,
    inputs=gr.Number(label="Enter a number"),
    outputs=gr.Number(label="Square")
)

iface.launch()
```

Task : 06

Create Gradio interface that takes a sentence and returns it reversed.

In the second task, I made another Gradio interface that takes a sentence and returns it reversed. I defined a function that reverses the input text, and connected it to a textbox input and output using Gradio. This task helped me understand how to handle strings and how to build interactive apps for text processing.

Task 5 & 6.py > ...

```python

# Task 6
import gradio as gr

def reverse_sentence(sentence):
    return sentence[::-1]

iface = gr.Interface(
    fn=reverse_sentence,
    inputs=gr.Textbox(label="Enter a sentence"),
    outputs=gr.Textbox(label="Reversed Sentence")
)

iface.launch()

```