Assignment-13

Task-1:

Prompt:

Refactor the following legacy code to use a more Pythonic approach, such as list comprehensions or helper functions. Ensure the output remains the same.

```
numbers = [1, 2, 3, 4, 5]
squares = []
for n in numbers:
    squares.append(n ** 2)
print(squares)
```

Expected Output:

[1, 4, 9, 16, 25]

Code and Output:

Explanation:

Task 2:

Prompt:

Refactor the following legacy code to simplify string concatenation using " ".join() for better efficiency and readability. Keep the output unchanged

words = ["AI", "helps", "in", "refactoring", "code"]

```
sentence = ""
for word in words:
    sentence += word + " "
print(sentence.strip())
```

ExpectedOutput:

AI helps in refactoring code

Code and Output:

Explanation:

Task 3:

Prompt:

Refactor the following legacy code to use a safer and more Pythonic dictionary access method like .get() to handle missing keys gracefully. Ensure the output remains the same.

```
student_scores = {"Alice": 85, "Bob": 90}
if "Charlie" in student_scores:
    print(student_scores["Charlie"])
```

```
else:
    print("Not Found")
```

Expected Output:

Not Found

Code and Output:

Explanation:

Task 4:

Prompt:

Refactor the following legacy code to replace

Refactor the following legacy code to replace repetitive if-elif blocks with a dictionary-based approach for cleaner and more scalable logic. Ensure the output remains the same.

```
operation = "multiply"
a, b = 5, 3
if operation == "add":
    result = a + b
elif operation == "subtract":
    result = a - b
elif operation == "multiply":
    result = a * b
else:
    result = None
print(result)
```

Expected Output:

15

Code & Output:

Explanation:

Task 5:

Prompt:

Refactor the following legacy code to simplify the search logic using Python’s in keyword or other efficient techniques. Ensure the output remains the same

```
items = [10, 20, 30, 40, 50]
found = False
for i in items:
    if i == 30:
        found = True
        break
print("Found" if found else "Not Found")
```

print("Found" if found else "Not Found")

<u>Expected Output</u>:
Found

Code & Output:

Explanation: