

AI Assisted Coding Assignment

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BATCH :36

Lab 1: Exploring Additional AI Coding Tools beyond Copilot – Gemini (Colab)

and Cursor AI

Task1 -

Prompt: Write a Python function that takes a list of numbers and returns the mean, minimum, and maximum values. Also display the output.

Code:

```
def statistical_summary(data):  
    if not data:  
        return None  
  
    mean_value = sum(data) / len(data)  
    min_value = min(data)  
    max_value = max(data)  
  
    return mean_value, min_value, max_value  
  
# Sample input  
numbers = [10, 20, 30, 40, 50]  
  
# Function call  
mean_val, min_val, max_val = statistical_summary(numbers)  
  
print("Mean:", mean_val)  
print("Minimum:", min_val)  
print("Maximum:", max_val)  
  
... Mean: 30.0  
    Minimum: 10  
    Maximum: 50
```

Explanation:


- ☐ Gemini generated correct and readable code
- ☐ Used built-in Python functions efficiently

❑ Suitable for beginners with minimal modification


Task 2: Armstrong Number – AI Comparison

Prompt: write a python program to reverse a string without using functions and optimize the code

Code 1:

```
[8] 0s  def is_armstrong(num):  
    digits = str(num)  
    power = len(digits)  
    total = sum(int(d)**power for d in digits)  
    return total == num
```

Code 2:

```
 def is_armstrong(number):  
    temp = number  
    n = len(str(number))  
    result = 0  
  
    while temp > 0:  
        digit = temp % 10  
        result += digit ** n  
        temp //= 10  
  
    return result == number
```

Explanation:

Gemini Favor's concise, modern Python. Copilot mirrors traditional logic taught in classrooms.

TASK-3

Prompt: Write a Python program to check if a year is a leap year

Code:

```
 def is_leap_year(year):  
    if year % 4 == 0 and year % 100 != 0:  
        return True  
    if year % 400 == 0:  
        return True  
    return False  
  
year = int(input("Enter year: "))  
  
if (year % 400 == 0) or (year % 4 == 0 and year % 100 != 0):  
    print("Leap Year")  
else:  
    print("Not a Leap Year")  
  
Enter year: 2020  
Leap Year
```

Explanation:

- ☐ Prompt 2 produced cleaner logic and user interaction
- ☐ Cursor adapts structure significantly based on prompt wording
- ☐ Demonstrates strong refactoring and formatting ability

TASK -4

Student Logic + AI Refactoring (Odd/Even Sum)

Code:

```
numbers = (1, 2, 3, 4, 5, 6)
even_sum = 0
odd_sum = 0

for n in numbers:
    if n % 2 == 0:
        even_sum = even_sum + n
    else:
        odd_sum = odd_sum + n

print("Even sum:", even_sum)
print("Odd sum:", odd_sum)
```

... Even sum: 12
Odd sum: 9

Explanation:

- ☐ Reduced code length
- ☐ Eliminated manual counters
- ☐ Used generator expressions
- ☐ Improved readability and maintainability