AI ASSISTEDCODING

ASSIGNMENT-9

TUESDAY

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BATCH NO:15

Task 1: Documentation – Function Summary Generation

Prompt Used (Zero-Shot Prompt)

Write a concise functional summary for each Python function in the script.

The summary should explain the purpose of the function briefly and clearly.

Do not include implementation details.

PYTHON CODE:

```
def calculate_average(numbers):
    total = sum(numbers)
    return total / len(numbers)


def find_max(numbers):
    return max(numbers)


def count_even(numbers):
    count = 0
    for num in numbers:
        if num % 2 == 0:
            count += 1
    return count
numbers = [10, 20, 30, 40, 50]


print("Average:", calculate_average(numbers))
print("Maximum:", find_max(numbers))
```

print("Even Count:", count_even(numbers))

OUTPUT:

Average: 30.0

Maximum: 50

Even Count: 5

Explanation

The AI generated concise summaries describing:

- calculate_average → computes average
- find_max → identifies maximum value
- count_even → counts even numbers

Task Description -2 (Documentation – Logical Explanation for Conditions and Loops):

Explain only the decision-making logic and loop behavior in this Python code.

Do not explain basic syntax.

PROMPT:

Explain only the decision-making logic and loop behavior in this Python code.

Do not explain basic syntax.

PYTHON CODE:

```
def check_numbers(numbers):
    result = []
    for num in numbers:
        if num > 0:
            result.append("Positive")
        elif num < 0:
            result.append("Negative")
        else:
            result.append("Zero")
    return result
```

```
nums = [5, -3, 0, 8, -1]
print(check_numbers(nums))
```

OUTPUT:

```
['Positive', 'Negative', 'Zero', 'Positive', 'Negative']
```

Explanation

The AI explains:

- Loop behavior → iterates through each number
- Condition logic → classifies number type

Task Description -3 (Documentation – File-Level Overview)

Write a high-level overview describing the purpose and functionality of this Python file.

Place the overview at the top of the file**.**

PYTHON CODE:

```
def add(a, b):
    return a + b


def subtract(a, b):
    return a - b


def multiply(a, b):
    return a * b
print("Addition:", add(10, 5))
print("Subtraction:", subtract(10, 5))
print("Multiplication:", multiply(10, 5))
```

OUTPUT:

```
Addition: 15
Subtraction: 5
Multiplication: 50
```

Explanation

The AI generated a clear overview explaining:

- Purpose of file
- Functions included
- Usage context

Task Description -4 (Documentation – Refine Existing Documentation)

Rewrite the documentation to improve clarity and consistency.

Keep the technical meaning unchanged.

PYTHON CODE:

```
def square(n):
    # this gives square
    return n * n
print("Square:", square(6))
```

OUTPUT:

Square: 36

Explanation

Improvement includes:

- Professional tone
- Clear meaning
- Consistent format

Task Description -5 (Documentation – Prompt Detail Impact Study)

Write a clear and professional docstring explaining the purpose,

input parameter, and return value of the function.

PYTHON CODE:

```
def factorial(n):
    result = 1
    for i in range(1, n+1):
        result *= i
    return result
print("Factorial of 5:", factorial(5))
print("Factorial of 7:", factorial(7))
```

OUTPUT:

Factorial of 5: 120

Factorial of 7: 5040

Write documentation for this function.

Calculates factorial of a number.

Comparison Table:

Criteria	**Brief Prompt**	**Detailed Prompt**
Completeness	Low	High
Clarity	Basic	Very clear
Accuracy	Correct but limited	Fully accurate
Parameter Explanation	No	Yes
Return Value Explanation	No	Yes
Professional Quality	Low	High