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Batch:51

Assignment-9.2

Task Description -1 (Documentation – Function Summary Generation)

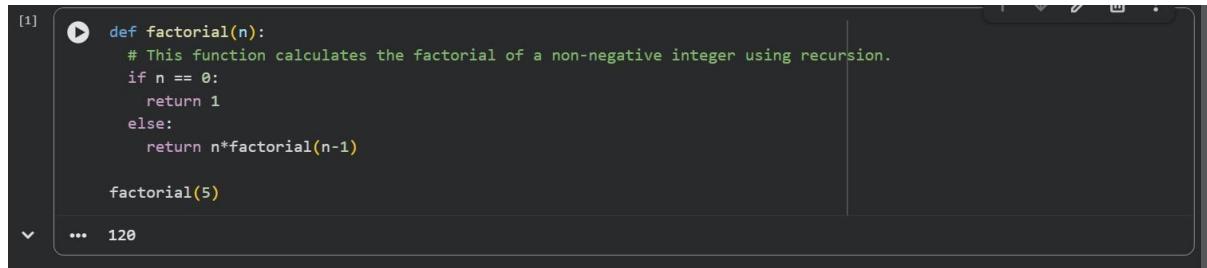
Code used: def

```
factorial(n):
if n == 0:
    return 1
else:
    return n*factorial(n-1)
factorial(5)
```

Prompt:

Add a short summary describing the purpose of the function in the code

Output:



The screenshot shows a Jupyter Notebook cell with the following content:

```
[1] def factorial(n):
    # This function calculates the factorial of a non-negative integer using recursion.
    if n == 0:
        return 1
    else:
        return n*factorial(n-1)

factorial(5)
... 120
```

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

```
def numbers(n): if
    n > 0:
        result = "Positive"
    elif n < 0: result =
        "Negative" else:
        result = "Zero"
    return result
numbers(3)
```

Prompt: explain only decision-making logic and loop behavior inside the code Output:

```
[7] ⏎ def numbers(n):
    # Decision-making logic: Determines if 'n' is positive, negative, or zero.
    # No loops are present in this function; execution flows through conditional branches.
    # Check if 'n' is positive
    if n > 0:
        result = "Positive"
    # If not positive, check if 'n' is negative
    elif n < 0:
        result = "Negative"
    # If neither positive nor negative, 'n' must be zero
    else:
        result = "Zero"
    return result
numbers(3)

... 'Positive'
```

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

Code Used:

```
def factorial(n): result = 1 for
i in range(1, n + 1):
    result *= i
return result

def square_list(numbers): return
[n * n for n in numbers]
```

```
def main(): print(factorial(5))
print(square_list([1, 2, 3, 4])) main()
```

Prompt:

Generate a high-level overview summarizing the overall purpose and functionality of the Code. add the summary at the beginning

Output:

```
[8] ✓ 0s ⏎ # This code defines two utility functions: `factorial` to calculate the factorial of a number,
# and `square_list` to square each element in a list. It then demonstrates their usage in a `main` function.

def factorial(n):
    result = 1
    for i in range(1, n + 1):
        result *= i
    return result

def square_list(numbers):
    return [n * n for n in numbers]

def main():
    print(factorial(5))
    print(square_list([1, 2, 3, 4]))

main()

... 120
[1, 4, 9, 16]
```

Task Description -4 (Documentation – Refine Existing Documentation)

Code Used: def

```
calculate_discount(price, discount):
    # calculate if price > 0: # apply discount
    final_price = price - (price * discount / 100)
    return final_price
else:
    # wrong price
    return 0
```

Prompt:

Rewrite the documentation to improve clarity and consistency.

Output:

```
[10]  ✓ Os  ⏪ def calculate_discount(price, discount):
        """
        Calculates the final price after applying a discount.

        Args:
            price (float or int): The original price of the item.
            discount (float or int): The discount percentage to apply (e.g., 10 for 10%).

        Returns:
            float: The final price after applying the discount. Returns 0 if the original price is not positive.
        """
        if price > 0:
            # Apply the discount percentage to the original price
            final_price = price - (price * discount / 100)
            return final_price
        else:
            # Return 0 if the price is invalid (non-positive)
            return 0
```

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

Code Used: def

```
reverse_string(text): return
text[::-1]
```

Prompt - 1:

Write a short documentation comment explaining what this Python function does.

Output - 1:

```
[12]  ✓ Os  ⏪ def reverse_string(text):
        """
        Reverses a given string.

        Args:
            text (str): The input string to be reversed.

        Returns:
            str: The reversed string.
        """
        return text[::-1]
```

Prompt - 2:

Write a clear and detailed documentation comment for the given Python function.

Output - 2:

```
[13] 0s  def reverse_string(text):
        """
        Reverses the given input string.

        This function takes a string as input and returns a new string
        with the characters in reverse order. It utilizes Python's string slicing
        feature to achieve this efficiently.

        Args:
            text (str): The input string that needs to be reversed.

        Returns:
            str: A new string containing the reversed characters of the input string.

        Examples:
            >>> reverse_string("hello")
            'olleh'
            >>> reverse_string("Python")
            'nohtyP'
            >>> reverse_string("12345")
            '54321'
        """
        return text[::-1]
```