Ai Assisted Coding

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Lab 9.1: Documentation Generation -Automatic documentation and code comments

Problem 1:

Consider the following Python function:

```
def find_max(numbers):
return max(numbers)
```

Task:

• Write documentation for the function in all three formats:

(a) Docstring

(b) Inline comments

(c) Google-style documentation

• Critically compare the three approaches. Discuss the advantages, disadvantages, and suitable use cases of each style.

• Recommend which documentation style is most effective for a mathematical utilities library and justify your Answer.

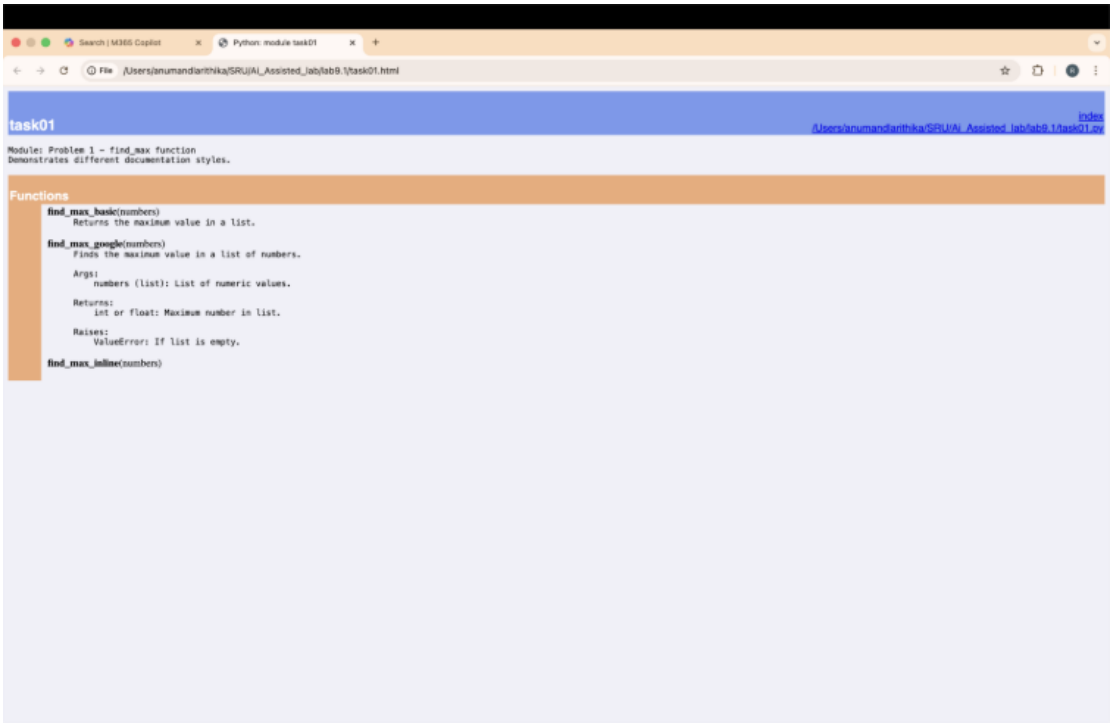
Prompts Used :

Python3 –m pydoc task01

Python3 –m pydoc –w task01

Open task01.html

Expected output :



Problem 2:

Consider the following Python function:

def login(user, password, credentials):

return credentials.get(user) == password

Task:

1. Write documentation in all three formats.
2. Critically compare the approaches.
3. Recommend which style would be most helpful for new developers onboarding a project, and justify your choice.

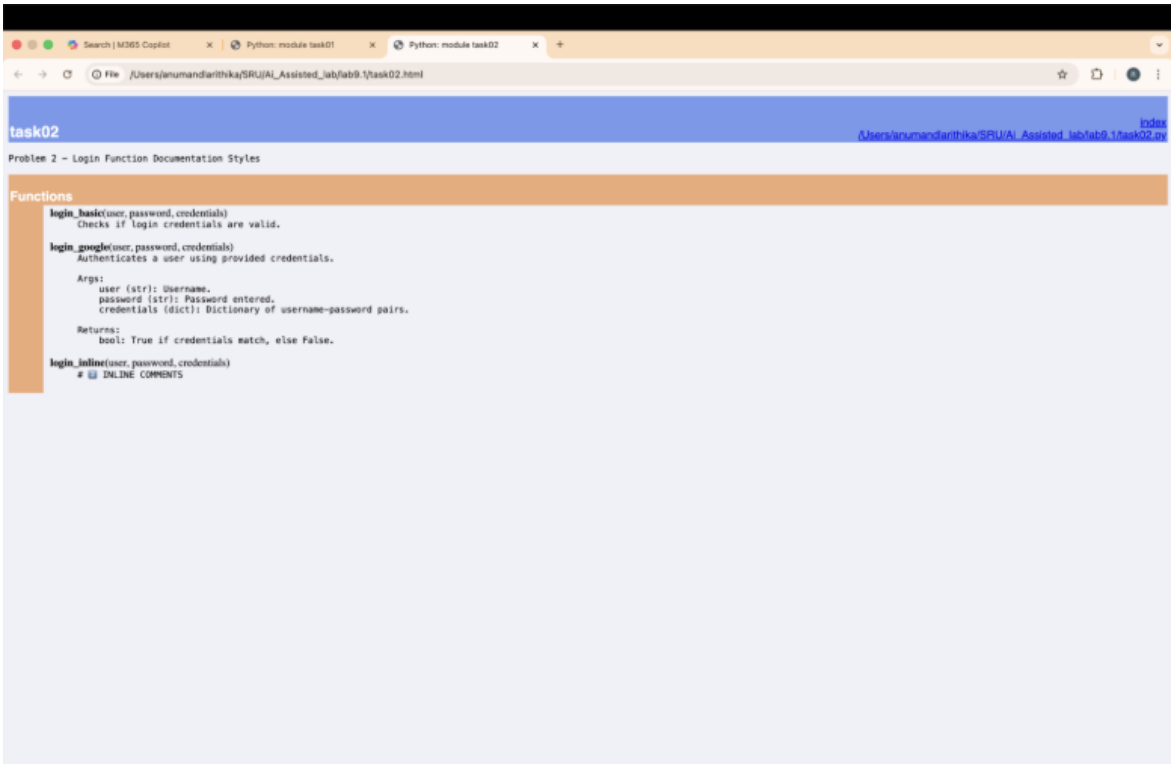
Prompts Used :

Python3 –m pydoc task02

Python –m pydoc –w task02

Open task02.html

Expected Output :



Problem 3: Calculator (Automatic Documentation Generation)

Task: Design a Python module named calculator.py and demonstrate automatic documentation generation.

Instructions:

1. Create a Python module calculator.py that includes the following functions, each written with appropriate docstrings:

o add(a, b) – returns the sum of two numbers

o subtract(a, b) – returns the difference of two numbers

o multiply(a, b) – returns the product of two numbers

o divide(a, b) – returns the quotient of two numbers

2. Display the module documentation in the terminal using Python's documentation tools.

3. Generate and export the module documentation in HTML format using the pydoc utility, and open the generated HTML

file in a web browser to verify the output.

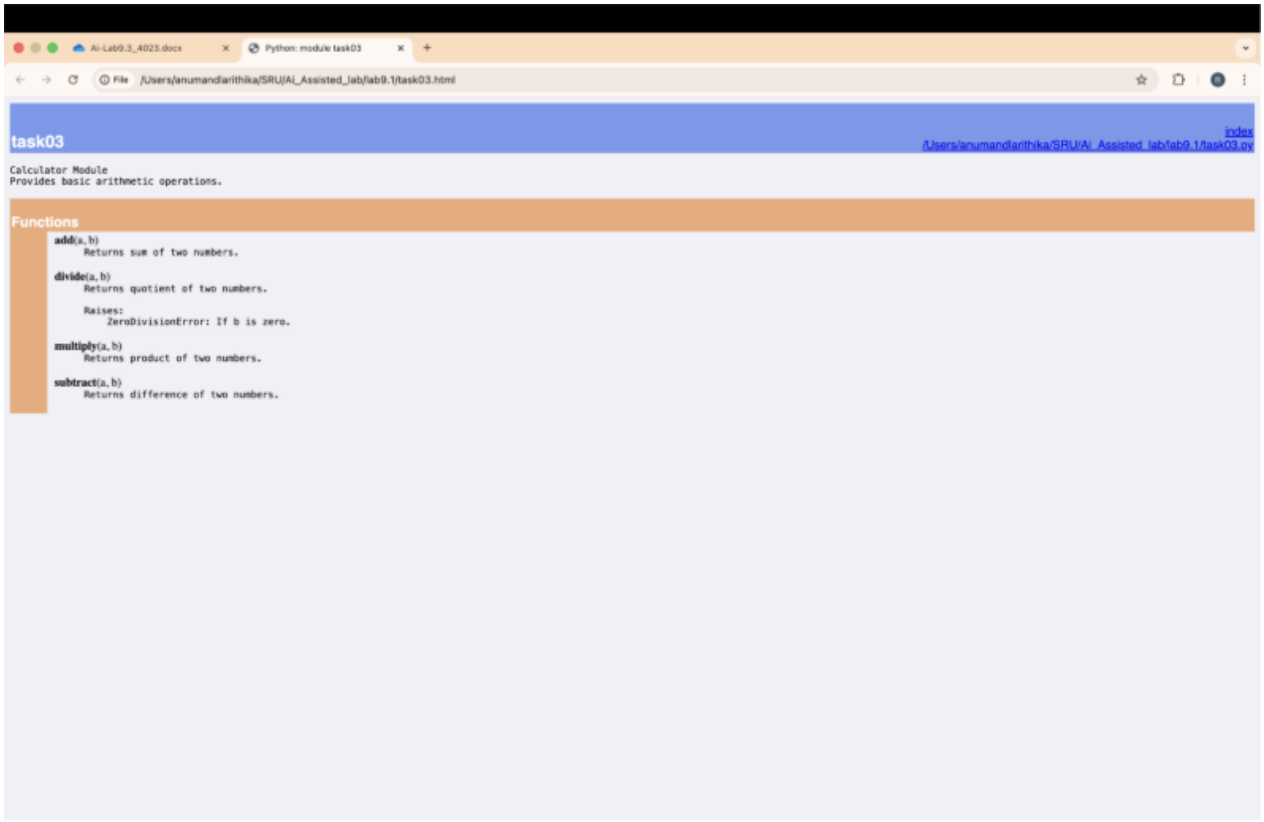
Prompts Used :

Python3 –m pydoc task03

Python –m pydoc –w task03

Open task03.html

Expected Output :



Problem 4: Conversion Utilities Module

Task:

1. Write a module named conversion.py with functions:

o decimal_to_binary(n)

o binary_to_decimal(b)

o decimal_to_hexadecimal(n)

2. Use Copilot for auto-generating docstrings.

3. Generate documentation in the terminal.

4. Export the documentation in HTML format and open it in a

Browser.

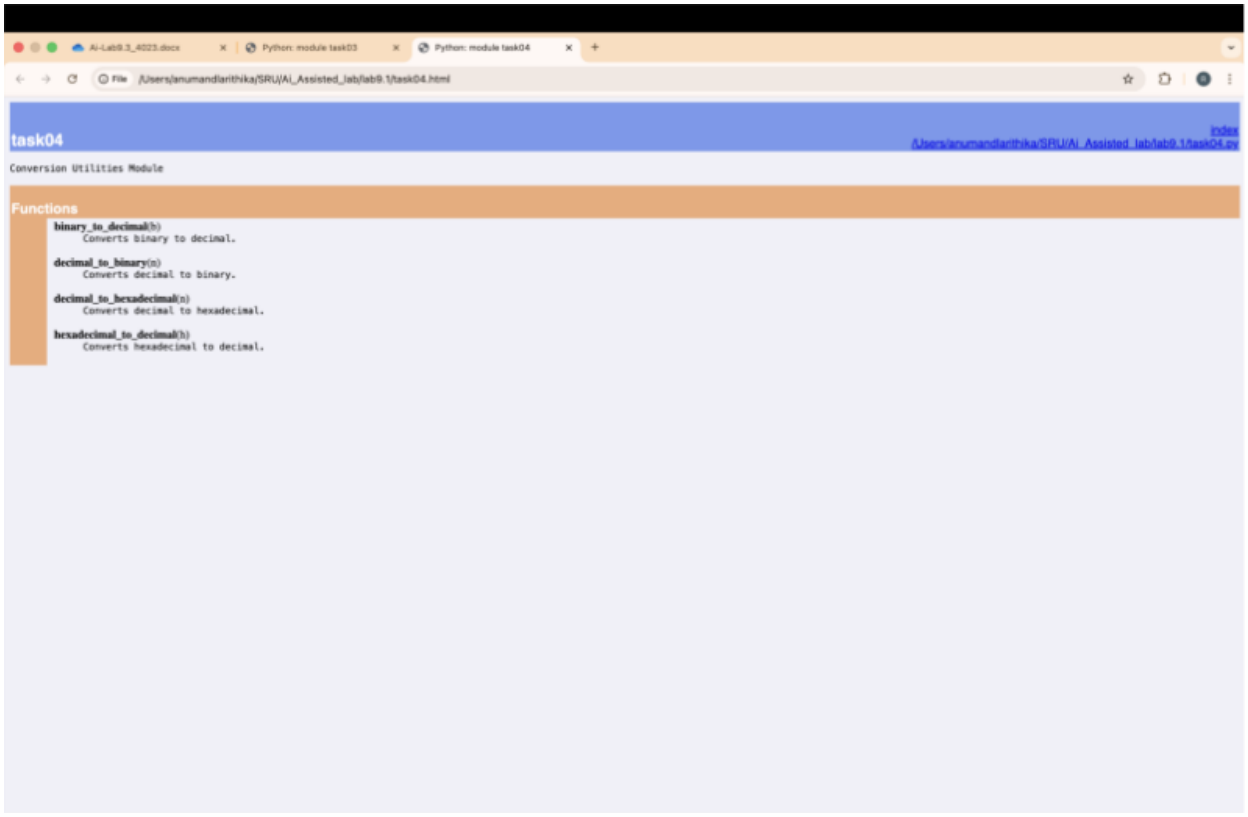
Prompts Used :

Python3 –m pydoc task04

Python –m pydoc –w task04

Open task04.html

Expected Output :



Problem 5 – Course Management Module

Task:

1. Create a module course.py with functions:

o add_course(course_id, name, credits)

o remove_course(course_id)

o get_course(course_id)

2. Add docstrings with Copilot.

3. Generate documentation in the terminal.

4. Export the documentation in HTML format and open it in a

Browser.

Prompts Used :

Python3 –m pydoc task05

Python –m pydoc –w task05

Open task05.html

Expected Output :