

# AI Assisted Coding

## Assignment - 4.2

### Task - 1

Zero-shot: Prompt AI with only the instruction. Write a Python function to determine whether a given number is prime.

The screenshot shows the VS Code interface. The Explorer sidebar on the left lists files: 'asgn4-2.py' (open), 'asgn4-2.py > ...', and 'AI\_ASST\_CODING'. The main editor area contains the following Python code:

```
asgn4-2.py > ...
1 #Zero-shot: Prompt AI with only the instruction. Write a Python function to determine
2 #whether a given number is prime
3
4 def is_prime(n):
5     """Check if a number is prime."""
6     if n <= 1:
7         return False
8     for i in range(2, int(n**0.5) + 1):
9         if n % i == 0:
10             return False
11     return True
12
13 # Example usage:
14 number = 24
15 if is_prime(number):
16     print(f"{number} is a prime number.")
17 else:
18     print(f"{number} is not a prime number.)
```

The terminal at the bottom shows the command being run and the output: '24 is not a prime number.'

### Task - 2

One-shot: Provide one example: Input: [1, 2, 3, 4], Output: 10 to help AI generate a function that calculates the sum of elements in a list.

The screenshot shows the VS Code interface. The Explorer sidebar on the left lists files: 'asgn4-2.py' (open), 'asgn4-2.py > ...', and 'AI\_ASST\_CODING'. The main editor area contains the following Python code:

```
asgn4-2.py > ...
1 #One-shot: Provide one example: Input: [1, 2, 3, 4]. Output: 10 to help AI generate a
2 #function that calculates the sum of elements in a list.
3
4 def sum_of_elements(input_list):
5     """
6         This function takes a list of numbers as input and returns the sum of its elements.
7
8         :param input_list: List of numbers
9         :return: Sum of the elements in the list
10    """
11
12    total = 0
13    for number in input_list:
14        total += number
15    return total
16
17 # Example usage:
18 result = sum_of_elements([1, 2, 3, 4])
19 print(result) # Output: 10
```

The terminal at the bottom shows the command being run and the output: '24 is not a prime number.' followed by 'PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding> & C:\Users\raman\AppData\Local\Python\pythoncore-3.14-64\python.exe c:/Users/raman/OneDrive/Desktop/Ai\_asst\_coding/asgn4-2.py' and 'PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding> & C:\Users\raman\AppData\Local\Python\pythoncore-3.14-64\python.exe c:/Users/raman/OneDrive/Desktop/Ai\_asst\_coding/asgn4-2.py'.

## Task – 3

Few-shot: Give 2–3 examples to create a function that extracts digits from an alphanumeric string.

```
#Few-shot: Give 2-3 examples to create a function that extracts digits from an
#alphanumeric string.

def extract_digits(input_string):
    """
    This function takes an alphanumeric string as input and returns a string containing only the digits.

    :param input_string: Alphanumeric string
    :return: String of digits extracted from the input
    """

    digits = ''
    for char in input_string:
        if char.isdigit():
            digits += char
    return digits

# Example usage:
result1 = extract_digits("a1b2c3")
print(result1) # Output: "123"
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding & C:\Users\raman\AppData\Local\Python\pythoncore-3.14-64\python.exe c:/Users/raman/OneDrive/Desktop/Ai\_asst\_coding/asgn4-2.py

24 is not a prime number.

PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding & C:\Users\raman\AppData\Local\Python\pythoncore-3.14-64\python.exe c:/Users/raman/OneDrive/Desktop/Ai\_asst\_coding/asgn4-2.py

10

PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding>

PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding & C:\Users\raman\AppData\Local\Python\pythoncore-3.14-64\python.exe c:/Users/raman/OneDrive/Desktop/Ai\_asst\_coding/asgn4-2.py

123

PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding>

## Task – 4

Compare zero-shot vs few-shot prompting for generating a function that counts the number of vowels in a string.

```
#Compare zero-shot vs few-shot prompting for generating a function that counts the
#number of vowels in a string.

def count_vowels(input_string):
    """
    This function takes a string as input and returns the count of vowels in the string.

    :param input_string: Input string
    :return: Count of vowels in the string
    """

    vowels = 'aeiouAEIOU'
    count = 0
    for char in input_string:
        if char in vowels:
            count += 1
    return count

# Example usage:
result = count_vowels("Hello World")
print(result) # Output: 3
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding\asgn4-2.py

10

PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding>

PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding & C:\Users\raman\AppData\Local\Python\pythoncore-3.14-64\python.exe c:/Users/raman/OneDrive/Desktop/Ai\_asst\_coding/asgn4-2.py

123

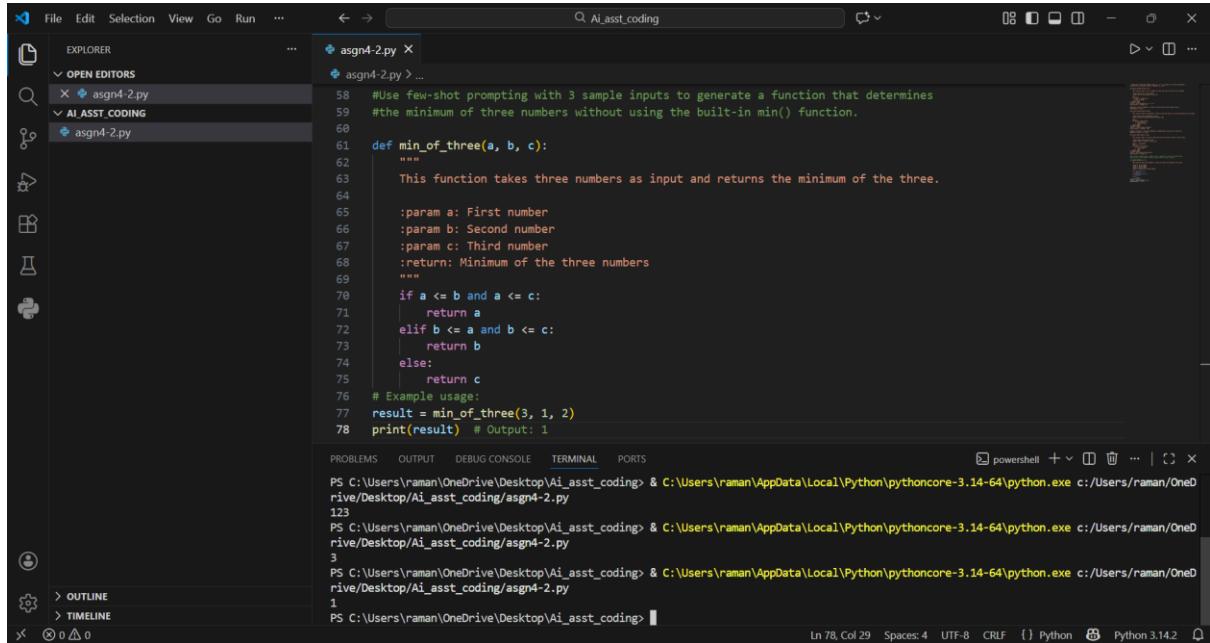
PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding & C:\Users\raman\AppData\Local\Python\pythoncore-3.14-64\python.exe c:/Users/raman/OneDrive/Desktop/Ai\_asst\_coding/asgn4-2.py

3

PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding>

## Task – 5

Use few-shot prompting with 3 sample inputs to generate a function that determines the minimum of three numbers without using the built-in min() function.



The screenshot shows a code editor interface with the following details:

- File Menu:** File, Edit, Selection, View, Go, Run, ...
- Search Bar:** Ai\_asst\_coding
- Explorer:** OPEN EDITORS, AI\_ASST\_CODING, asgn4-2.py
- Code Editor:** Content of asgn4-2.py:

```
58 #Use few-shot prompting with 3 sample inputs to generate a function that determines
59 #the minimum of three numbers without using the built-in min() function.
60
61 def min_of_three(a, b, c):
62     """
63         This function takes three numbers as input and returns the minimum of the three.
64
65         :param a: First number
66         :param b: Second number
67         :param c: Third number
68         :return: Minimum of the three numbers
69     """
70
71     if a <= b and a <= c:
72         return a
73     elif b <= a and b <= c:
74         return b
75     else:
76         return c
77
78     # Example usage:
79     result = min_of_three(3, 1, 2)
80     print(result) # Output: 1
```
- Terminal:** PowerShell, powershell, C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding> & C:\Users\raman\AppData\Local\Python\pythoncore-3.14-64\python.exe c:/Users/raman/OneDrive/Desktop/Ai\_asst\_coding/asgn4-2.py  
123  
PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding> & C:\Users\raman\AppData\Local\Python\pythoncore-3.14-64\python.exe c:/Users/raman/OneDrive/Desktop/Ai\_asst\_coding/asgn4-2.py  
3  
PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding> & C:\Users\raman\AppData\Local\Python\pythoncore-3.14-64\python.exe c:/Users/raman/OneDrive/Desktop/Ai\_asst\_coding/asgn4-2.py  
1  
PS C:\Users\raman\OneDrive\Desktop\Ai\_asst\_coding>
- Status Bar:** Line 78, Col 29, Spaces: 4, UTF-8, CRLF, Python 3.14.2

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