SR UNIVERSITY

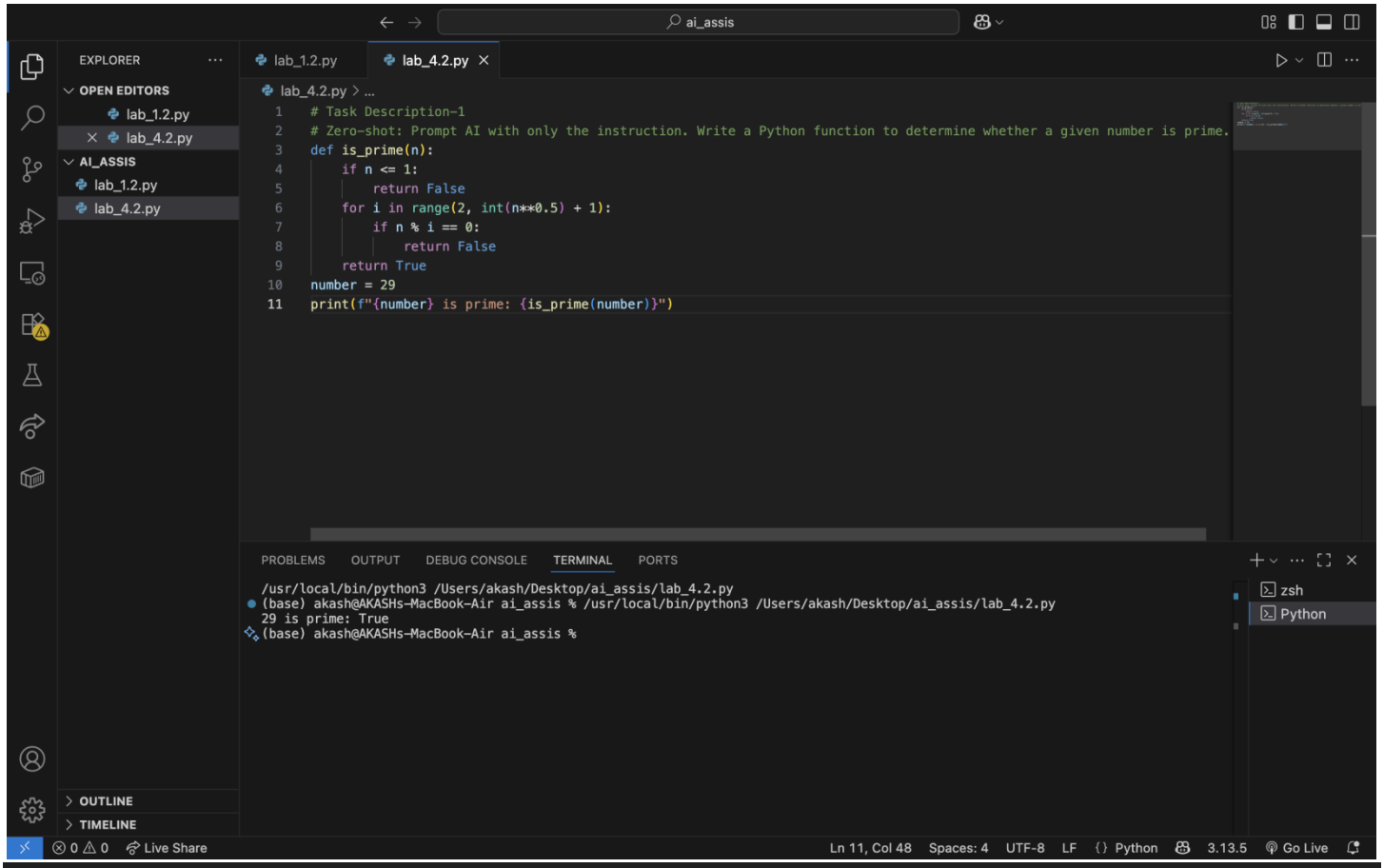
School of Computer Science and Artificial Intelligence

Lab Assignment # 4.2

Program	**: B. Tech (CSE)**
Specialization	**: --**
Course Title	**: AI Assisted coding**
Course Code	**:**
Semester	**II**
Academic Session	**: 2025-2026**
Name of Student	**: Akash Reddy**
Enrollment No.	**: 2403A51L30**
Batch No.	**: 51**
Date	**:20-01-2026**

Task Description-1

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



Explanation:

The function is_prime checks if a number n is prime by testing divisibility from 2 to the square root of n.

If any divisor is found, it returns False; otherwise, it returns True.

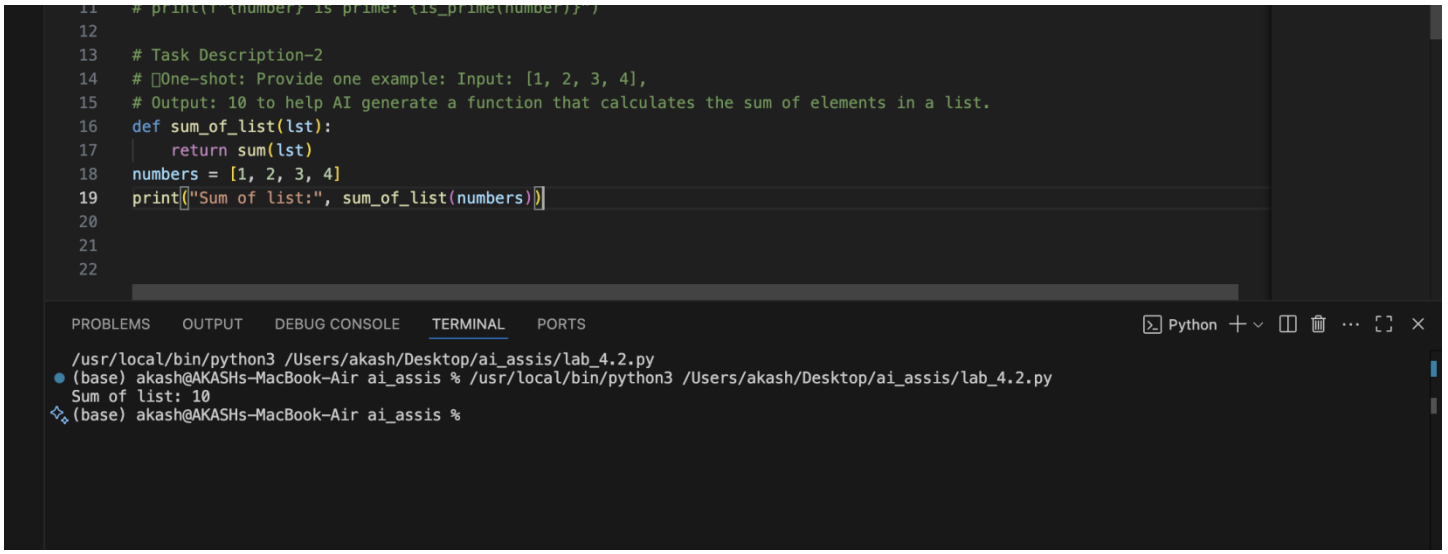
Few-shot: Provide AI with examples before the instruction.

Example 1: 5 is prime because it has no divisors other than 1

and itself.

Task Description-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.

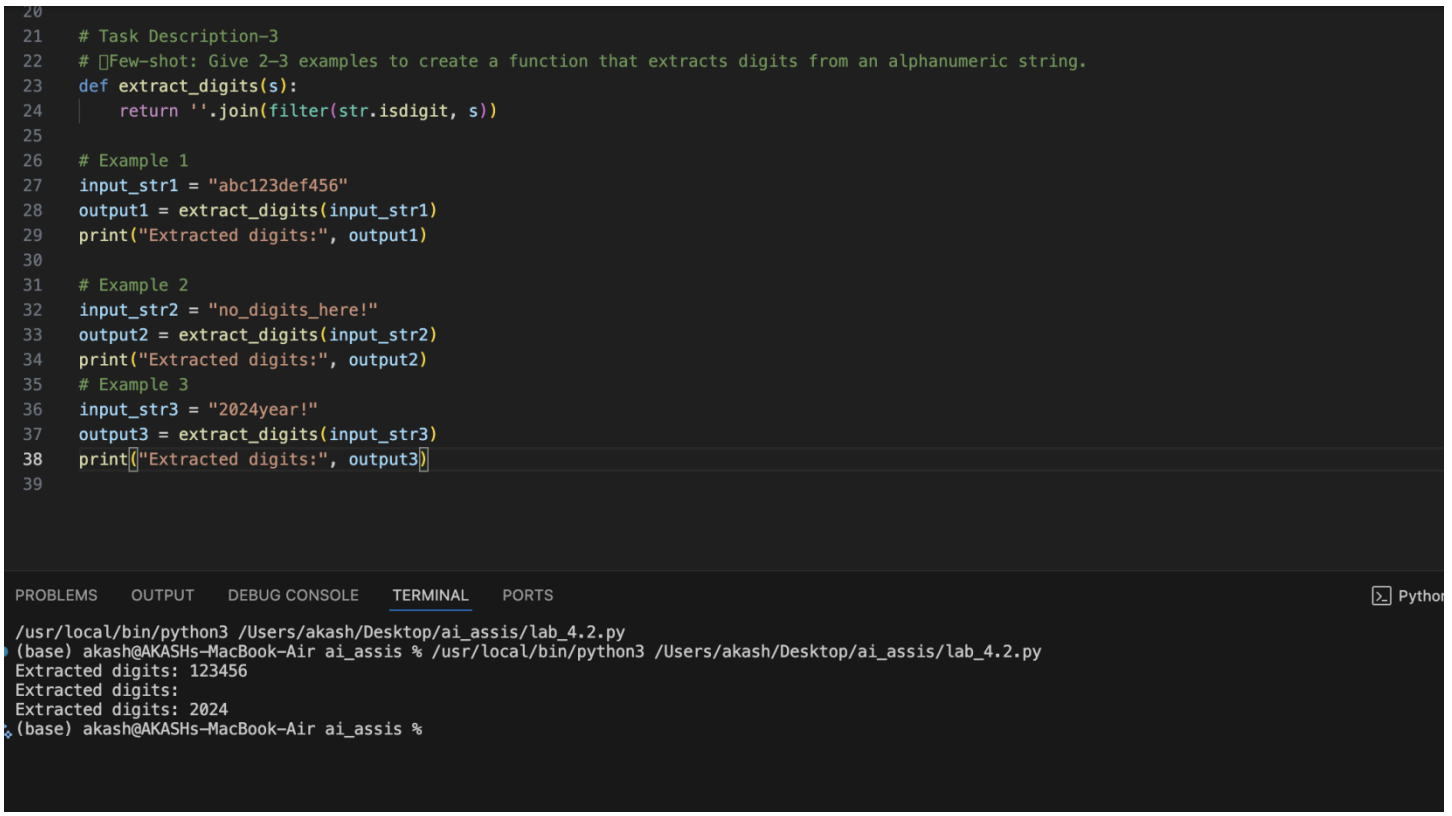


Explanation

```
# The function sum_of_list takes a list as input and returns the sum of its elements using Python's built-in sum() function.
```

Task Description-3

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



Explanation

```
# The function `extract_digits` takes an alphanumeric string as input and uses the `filter` function along with `
# str.isdigit` to extract only the digit characters from the string.
# It then joins these characters into a single string and returns it.
```

```
# The examples demonstrate the function's ability to extract digits from different types of input strings.
```

Task Description-4

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

```
40
41
42  # Task Description-4
43  # Compare zero-shot vs few-shot prompting for generating a function that counts the number of vowels in a string.
44  def count_vowels(s):
45      vowels = "aeiouAEIOU"
46      return sum(1 for char in s if char in vowels)
47
48  # Zero-shot example
49  input_str = "Hello World!"
50  print("Number of vowels (zero-shot):", count_vowels(input_str))
51
52  # Few-shot examples
53  input_str1 = "This is a test."
54  input_str2 = "Another example."
55  print("Number of vowels (few-shot):", count_vowels(input_str1))
56  print("Number of vowels (few-shot):", count_vowels(input_str2))
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS                                                    Python

/usr/local/bin/python3 /Users/akash/Desktop/ai_assis/lab_4.2.py
(base) akash@AKASHs-MacBook-Air ai_assis % /usr/local/bin/python3 /Users/akash/Desktop/ai_assis/lab_4.2.py
Number of vowels (zero-shot): 3
Number of vowels (few-shot): 4
Number of vowels (few-shot): 6
(base) akash@AKASHs-MacBook-Air ai_assis %
```

Comparison

```
# The zero-shot approach relies solely on the initial instruction, which may lead to less accurate or less optimized code.
# The few-shot approach, by providing examples, helps the AI understand the context better and often results in
# more accurate and efficient implementations. In this case, both approaches yield the same function,
# but few-shot prompting can enhance understanding for more complex tasks.
```

Task Description-5

Use few-shot prompting with 3 sample inputs to generate a function that determines the minimum of three numbers without using

```
59
60  # Task Description-5
61  # Use few-shot prompting with 3 sample inputs to generate a function that determines the minimum of three numbers
62  # without using the built-in min() function.
63  def find_minimum(a, b, c):
64      if a < b and a < c:
65          return a
66      elif b < c:
67          return b
68      else:
69          return c
70
71  # Example inputs
72  print("Minimum (few-shot):", find_minimum(3, 1, 2))
73  print("Minimum (few-shot):", find_minimum(5, 10, 7))
74  print("Minimum (few-shot):", find_minimum(-1, -5, -3))
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS                                                    Python

/usr/local/bin/python3 /Users/akash/Desktop/ai_assis/lab_4.2.py
(base) akash@AKASHs-MacBook-Air ai_assis % /usr/local/bin/python3 /Users/akash/Desktop/ai_assis/lab_4.2.py
Minimum (few-shot): 1
Minimum (few-shot): 5
Minimum (few-shot): -5
(base) akash@AKASHs-MacBook-Air ai_assis %
```

Explanation

```
# The function find_minimum takes three numbers as input and compares them using conditional statements to determine the smallest number.
```