

Lab Assignment – 4.2

Hall Ticket No.: 2303A510E6

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Batch – 29

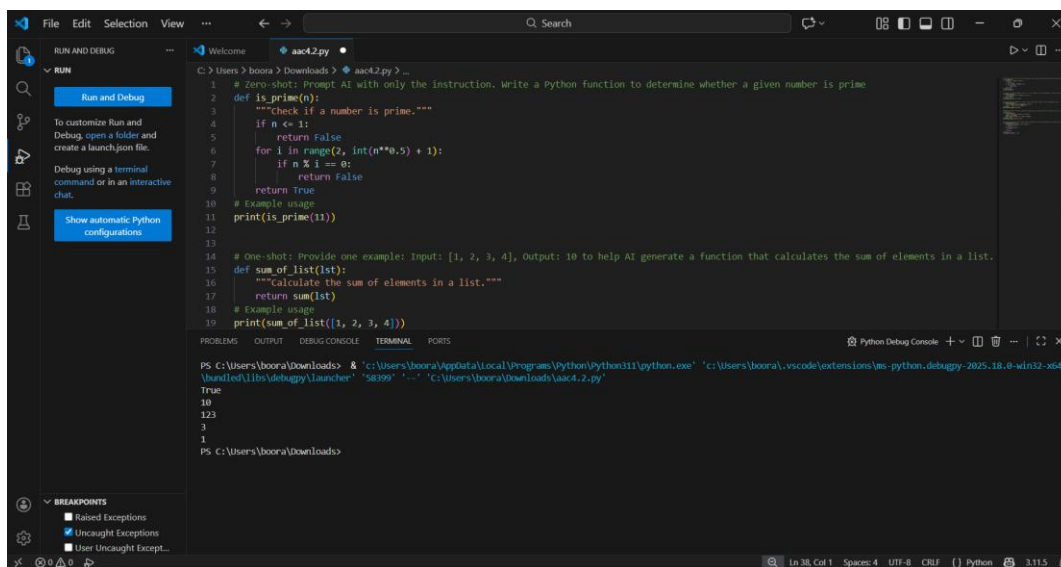
Task Description-1

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

Expected Output-1

- A basic Python function to check if a number is prime, demonstrating correct logical conditions without relying on examples or additional context

CODE & OUTPUT



```
1 # Zero-shot: Prompt AI with only the instruction. Write a Python function to determine whether a given number is prime
2 def is_prime(n):
3     """Check if a number is prime."""
4     if n <= 1:
5         return False
6     for i in range(2, int(n**0.5) + 1):
7         if n % i == 0:
8             return False
9     return True
10 # Example usage
11 print(is_prime(11))
12
13
14 # 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.
15 def sum_of_list(list):
16     """Calculate the sum of elements in a list."""
17     return sum(list)
18 # Example usage
19 print(sum_of_list([1, 2, 3, 4]))
```

Python Debug Console

```
PS C:\Users\boora\Downloads> & "C:\Users\boora\AppData\Local\Programs\Python\Python111\python.exe" "C:\Users\boora\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bin\debugpy_launcher" "58399" "-." "C:\Users\boora\Downloads\aac42.py"
True
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123
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PS C:\Users\boora\Downloads>
```

OUTPUT - True

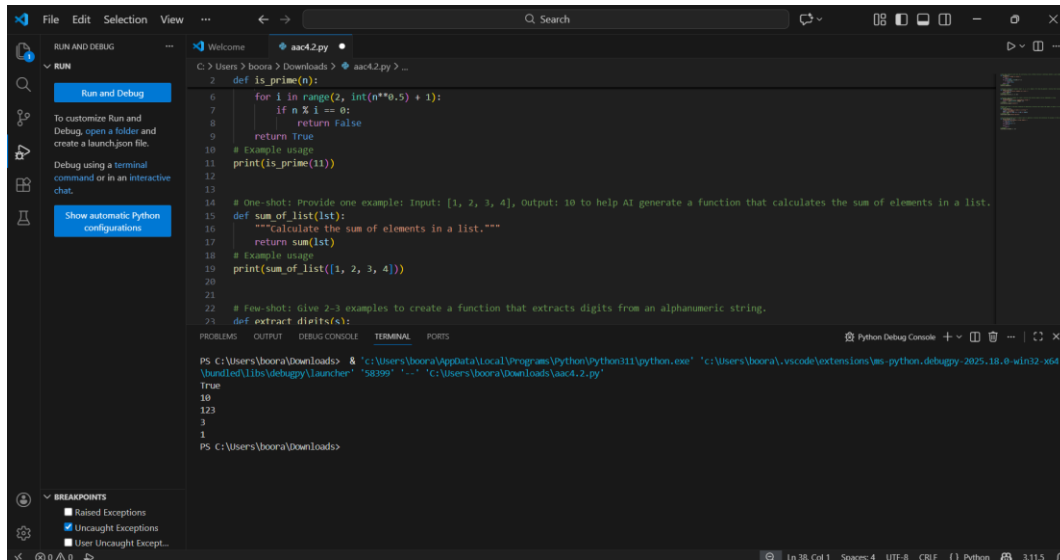
Task Description-2

- 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.

Expected Output-2

- A correct conversion function guided by the single example.

CODE & OUTPUT



```

1  def is_prime(n):
2      for i in range(2, int(n**0.5) + 1):
3          if n % i == 0:
4              return False
5          return True
6
7  # Example usage
8  print(is_prime(11))
9
10 # 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.
11
12 def sum_of_list(list):
13     """Calculate the sum of elements in a list."""
14     return sum(list)
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16 # Example usage
17 print(sum_of_list([1, 2, 3, 4]))
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22 # Few-shot: Give 2-3 examples to create a function that extracts digits from an alphanumeric string.
23
24 def extract_digits(s):
25     return ''.join(filter(str.isdigit, s))
26
27 # Example usage
28 print(extract_digits("abc123xyz"))
29
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```

Python Debug Console

```

PS C:\Users\boora\Downloads> & "c:\Users\boora\AppData\Local\Programs\Python\Python311\python.exe" "c:\Users\boora\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\
bundled\libs\debugpy\launcher" "58399" "-" "c:\Users\boora\Downloads\aac42.py"
True
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PS C:\Users\boora\Downloads>

```

OUTPUT - 10

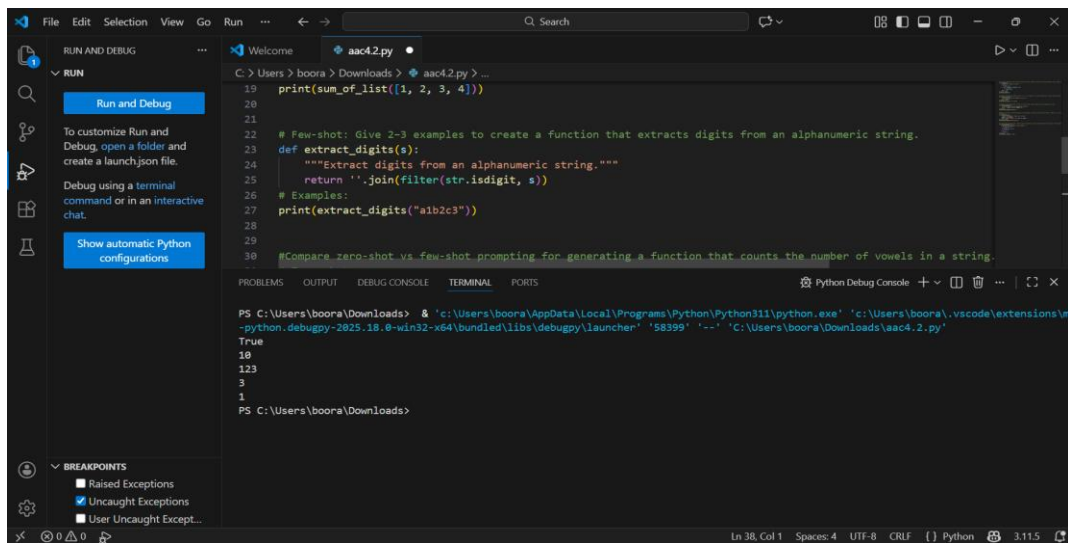
Task Description-3

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

Expected Output-3

- Accur
- ate function that returns only the digits from alphanumeric string.

CODE & OUTPUT



The screenshot shows the Visual Studio Code interface with a Python file named `aac42.py` open. The code defines a function `extract_digits` that takes a string `s` and returns a string of digits extracted from it. The function uses `filter(str.isdigit, s)` to filter out non-digits and `''.join` to concatenate the digits. The code also includes a comment about comparing zero-shot vs. few-shot prompting for generating a function that counts the number of vowels in a string. The output of the code is displayed in the terminal, showing the function being called with the string `"123"` and the output being `123`.

```
C:\Users\boora> cd Downloads & python aac42.py
19 print(sum_of_list([1, 2, 3, 4]))
20
21
22 # Few-shot: Give 2-3 examples to create a function that extracts digits from an alphanumeric string.
23 def extract_digits(s):
24     """Extract digits from an alphanumeric string."""
25     return ''.join(filter(str.isdigit, s))
26 # Examples:
27 print(extract_digits("1a2b3c"))
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30 #Compare zero-shot vs. few-shot prompting for generating a function that counts the number of vowels in a string.
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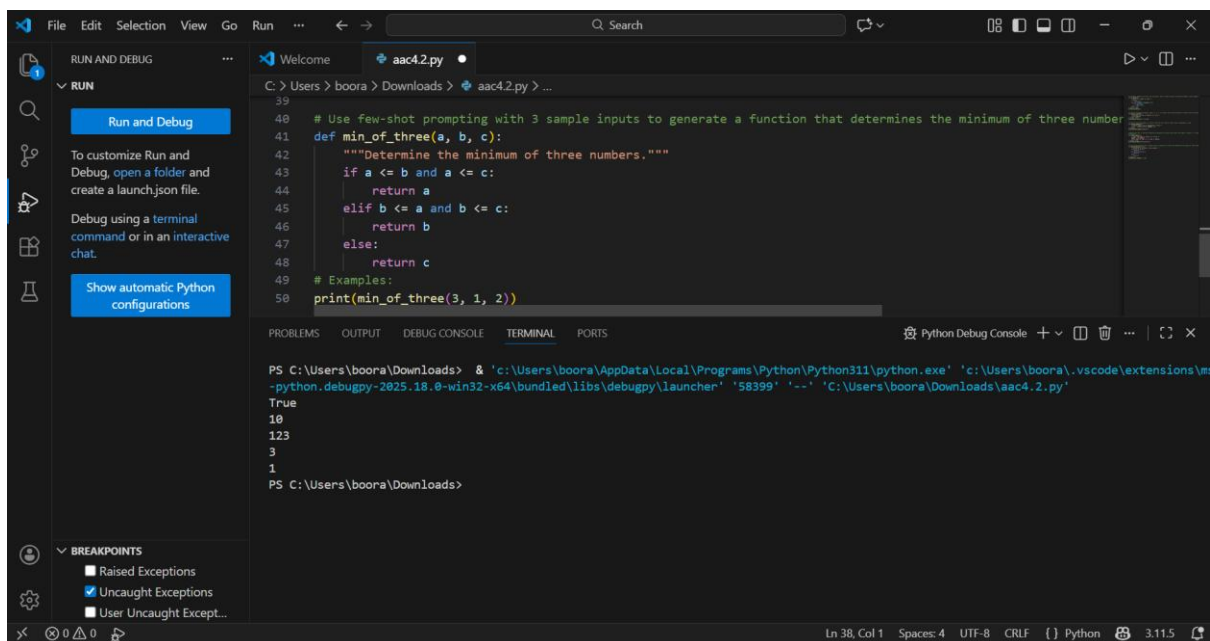
Task Description-5

- 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.

Expected Output-5

- A function that handles all cases with correct logic based on example patterns.

CODE & OUTPUT



The screenshot shows a Visual Studio Code editor window with a Python file named `aac4.2.py` open. The code defines a function `min_of_three(a, b, c)` that finds the minimum of three numbers using conditional logic. The function is tested with the example input `min_of_three(3, 1, 2)`. The terminal output shows the execution of the script, which prints the result `1`.

```
39
40 # Use few-shot prompting with 3 sample inputs to generate a function that determines the minimum of three number
41 def min_of_three(a, b, c):
42     """Determine the minimum of three numbers."""
43     if a <= b and a <= c:
44         return a
45     elif b <= a and b <= c:
46         return b
47     else:
48         return c
49 # Examples:
50 print(min_of_three(3, 1, 2))
```

```
PS C:\Users\boora\Downloads> & 'c:\Users\boora\AppData\Local\Programs\Python\Python311\python.exe' 'c:\Users\boora\.vscode\extensions\ms-python.debugpy-2025.18.0-win32-x64\bundle\libs\debugpy\launcher' '58399' '--' 'C:\Users\boora\Downloads\aac4.2.py'
True
10
123
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1
PS C:\Users\boora\Downloads>
```

OUTPUT - 1