AI ASSISTED CODING ASSIGNMENT – 3.5
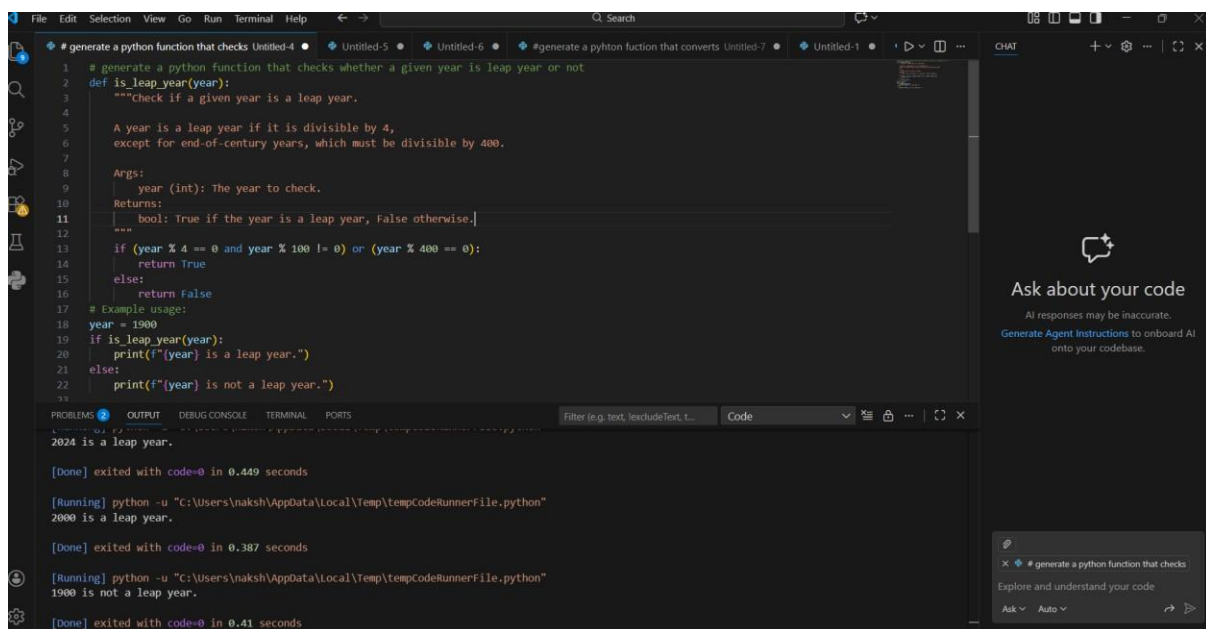
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BATCH-03

Question 1: Zero-Shot Prompting (Leap Year Check)

Write a zero-shot prompt to generate a Python function that checks whether a given year is a leap year.

Week2 -

Task:

• Record the AI-generated code.

• Test with years like 1900, 2000, 2024.

• Identify logical flaws or missing conditions.

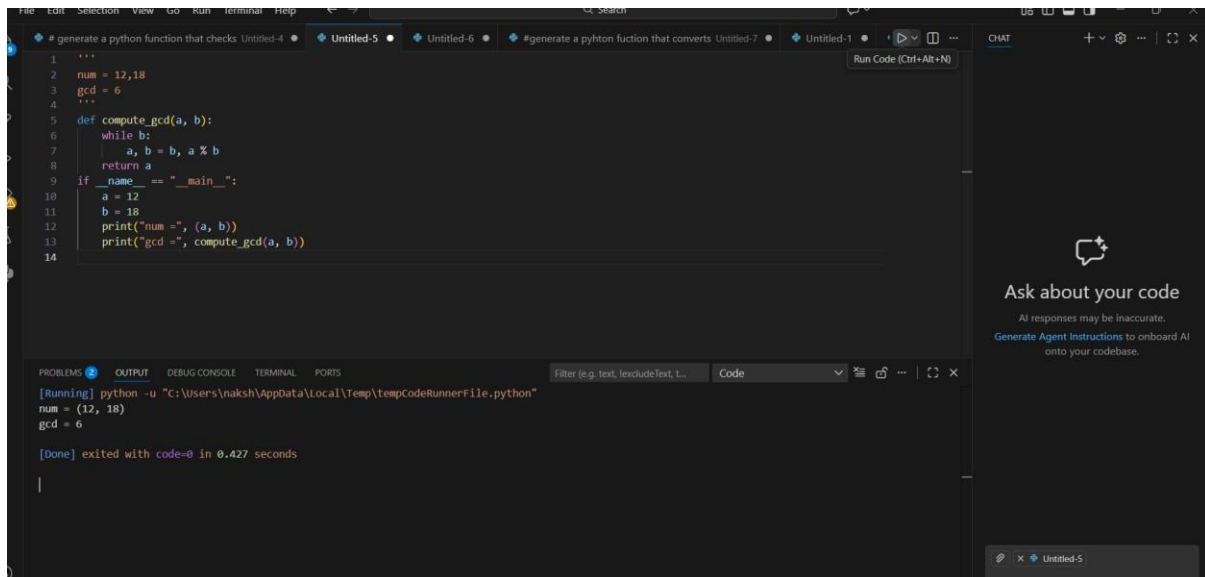## Question 2: One-Shot Prompting (GCD of Two Numbers)

Write a one-shot prompt with one example to generate a Python

function that finds the Greatest Common Divisor (GCD) of two numbers.

Example:

Input: 12, 18 → Output: 6

Task:

• **Compare with a zero-shot solution.**

• **Analyze algorithm efficiency**.

Question 3: Few-Shot Prompting (LCM Calculation)

Write a few-shot prompt with multiple examples to generate a Python function that computes the Least Common Multiple (LCM).

Examples:

• **Input: 4, 6 → Output: 12**

• **Input: 5, 10 → Output: 10**

• **Input: 7, 3 → Output: 21**

Task:

• **Examine how examples guide formula selection.**

• **Test edge cases.**

Question 4: Zero-Shot Prompting (Binary to Decimal Conversion)

Write a zero-shot prompt to generate a Python function that converts a
binary number to decimal.

Task:

• Test with valid and invalid binary inputs.

• Identify missing validation logic.

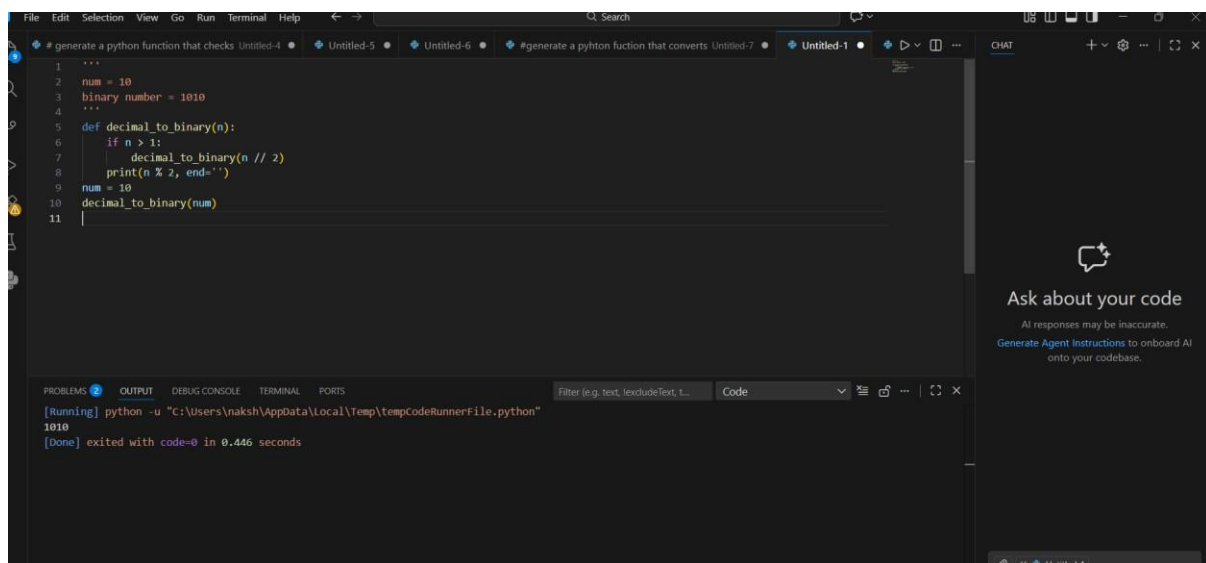## Question 5: One-Shot Prompting (Decimal to Binary Conversion)

Write a one-shot prompt with an example to generate a Python function that converts a decimal number to binary.

Example:

Input: 10 → Output: 1010

Task:

• **Compare clarity with zero-shot output.**

• **Analyze handling of zero and negative numbers.**

Question 6: Few-Shot Prompting (Harshad Number Check)

Write a few-shot prompt to generate a Python function that checks whether a number is a Harshad (Niven) number.

Examples:

• **Input: 18 → Output: Harshad Number**

• **Input: 21 → Output: Harshad Number**

• **Input: 19 → Output: Not a Harshad Number**

Task:

• **Test boundary conditions.**

• **Evaluate robustness**

```python
4    num = 21
5    print num is Harzard number
6    num = 19
7    print num is not Harzard number
8    '''
9    def is_harshad_number(num):
10       digit_sum = sum(int(digit) for digit in str(num))
11       return num % digit_sum == 0
12   if __name__ == "__main__":
13       test_numbers = [18, 21, 19]
14       for num in test_numbers:
15           if is_harshad_number(num):
16               print(f"{num} is Harshad number")
17           else:
18               print(f"{num} is not Harshad number")
19
```

PROBLEMS 2   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

[Running] python -u "C:\Users\naksh\AppData\Local\Temp\tempCodeRunnerFile.python"
18 is Harshad number
21 is Harshad number
19 is not Harshad number

[Done] exited with code=0 in 0.416 seconds

Ask about your code

AI responses may be inaccurate.
Generate Agent Instructions to onboard AI
onto your codebase.

Untitled-2

Explore and understand your code