

## Assignment 4.3

## Task 1: Zero-Shot Prompting – Leap Year Check

## Scenario

Zero-shot prompting involves giving instructions without providing examples.

## Task Description

Use zero-shot prompting to instruct an AI tool to generate a Python function that:

- Accepts a year as input
- Checks whether the given year is a leap year
- Returns an appropriate result

```
4.3.py X
1 #Generate a python function that accepts year as input and check whether the year is a leap year or not.The function should return an appropriate result.
2 def is_leap_year(year):
3
4     if (year % 4 == 0 and year % 100 != 0) or (year % 400 == 0):
5         return True
6     else:
7         return False
8
9 # Example usage:
10 year = 2020
11 if is_leap_year(year):
12     print(f'{year} is a leap year.')
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## Task 2: One-Shot Prompting – Centimeters to Inches Conversion

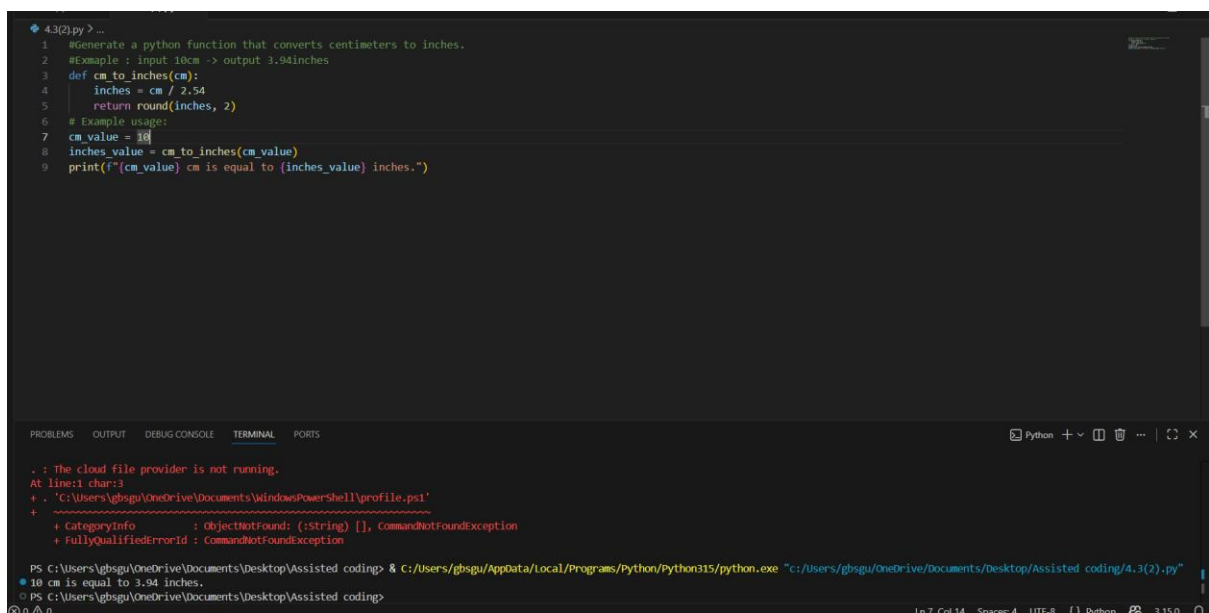
### Scenario

One-shot prompting guides AI using a single example.

### Task Description

Use one-shot prompting by providing one input-output example to generate a Python function that:


- Converts centimeters to inches
- Uses the correct mathematical formula



```
4.3(2).py > -
1 #Generate a python function that converts centimeters to inches.
2 #Example : input 10cm -> output 3.94inches
3 def cm_to_inches(cm):
4     inches = cm / 2.54
5     return round(inches, 2)
6 # Example usage:
7 cm_value = 10
8 inches_value = cm_to_inches(cm_value)
9 print(f"{cm_value} cm is equal to {inches_value} inches.")

. : The cloud file provider is not running.
At line:1 char:3
+ . 'C:/Users/gbgsu/OneDrive/Documents/WindowsPowerShell/profile.ps1'
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (String) [], CommandNotFoundException
+ FullyQualifiedErrorId : CommandNotFoundException

PS C:/Users/gbgsu/OneDrive/Documents/Desktop/Assisted coding> & C:/Users/gbgsu/AppData/Local/Programs/Python/Python315/python.exe "c:/Users/gbgsu/OneDrive/Documents/Desktop/Assisted coding/4.3(2).py"
10 cm is equal to 3.94 inches.
PS C:/Users/gbgsu/OneDrive/Documents/Desktop/Assisted coding>
```

Python + 

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### Task 3: Few-Shot Prompting – Name Formatting

#### Scenario

Few-shot prompting improves accuracy by providing multiple examples.

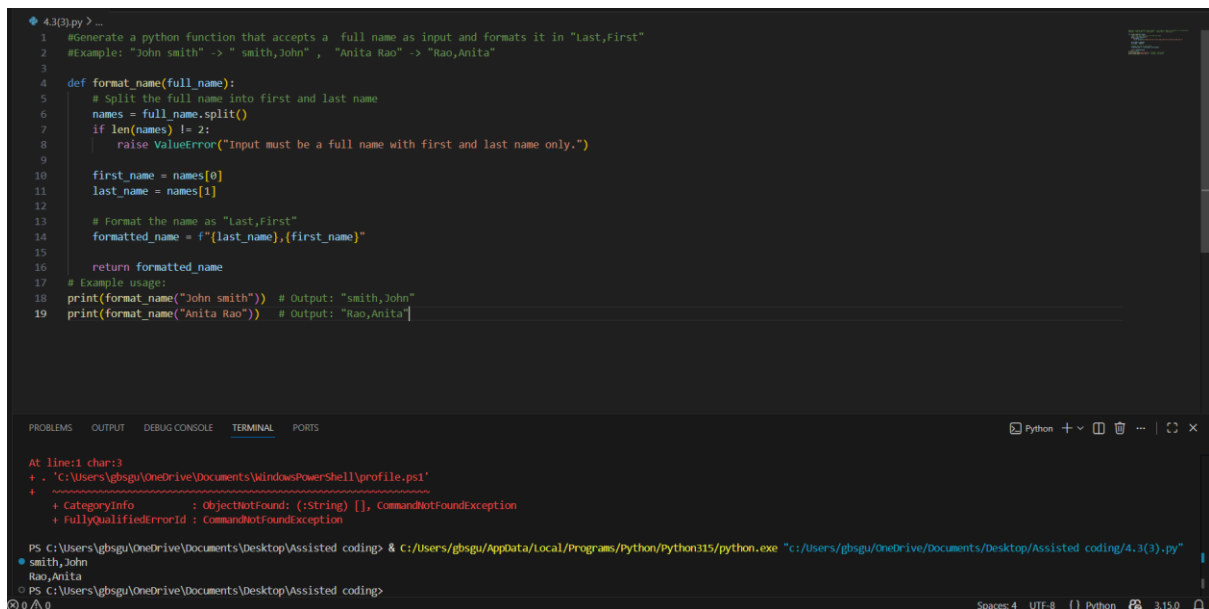
#### Task Description

Use few-shot prompting with 2–3 examples to generate a Python function that:

- Accepts a full name as input
- Formats it as “Last, First”

Example formats:

- "John Smith" → "Smith, John"
- "Anita Rao" → "Rao, Anita"



```
4.3(3).py > ...
1 #Generate a python function that accepts a full name as input and formats it in "Last,First"
2 #Example: "John smith" -> " smith,John" , "Anita Rao" -> "Rao,Anita"
3
4 def format_name(full_name):
5     # Split the full name into first and last name
6     names = full_name.split()
7     if len(names) != 2:
8         raise ValueError("Input must be a full name with first and last name only.")
9
10    first_name = names[0]
11    last_name = names[1]
12
13    # Format the name as "Last,First"
14    formatted_name = f"{last_name},{first_name}"
15
16    return formatted_name
17
18 # Example usage:
19 print(format_name("John smith")) # Output: "smith,John"
20 print(format_name("Anita Rao")) # Output: "Rao,Anita"
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

At line:1 char:3  
+ . 'C:\Users\ghsgu\OneDrive\Documents\WindowsPowerShell\profile.ps1'  
+ ~~~~~  
+ CategoryInfo : ObjectNotFound: (String) [], CommandNotFoundException  
+ FullyQualifiedErrorId : CommandNotFoundException

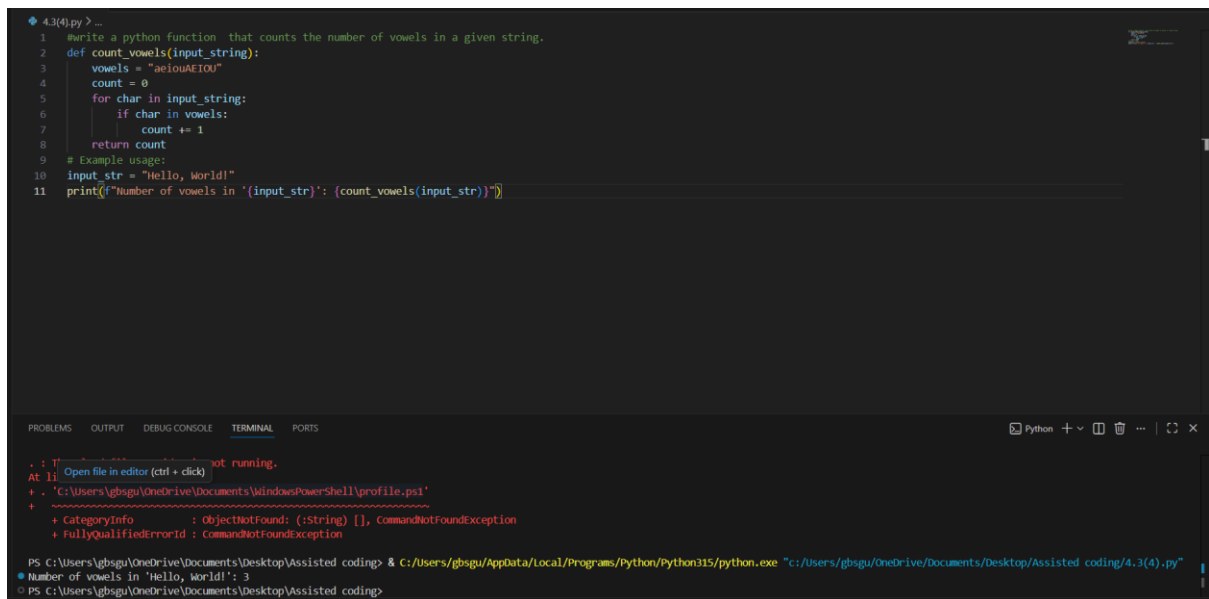
PS C:\Users\ghsgu\OneDrive\Documents\Desktop\Assisted coding> & C:/Users/ghsgu/AppData/Local/Programs/Python/Python315/python.exe "c:/Users/ghsgu/OneDrive/Documents/Desktop/Assisted coding/4.3(3).py"

smith,John  
Rao,Anita

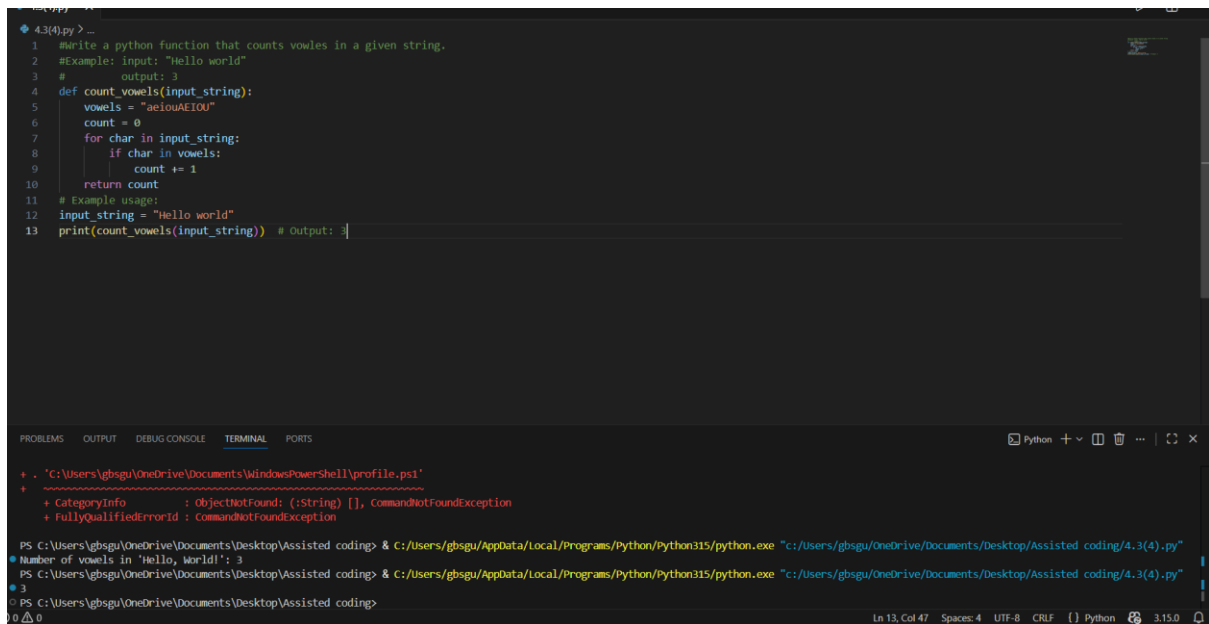
PS C:\Users\ghsgu\OneDrive\Documents\Desktop\Assisted coding>

Spaces: 4 UTF-8 Python 3.15.0





Few shot prompt:



```
4.3(4).py -
1 #write a python function that counts vowels in a given string.
2 #Example: input: "Hello world"
3 #       output: 3
4 #
5 def count_vowels(input_string):
6     vowels = "aeiouAEIOU"
7     count = 0
8     for char in input_string:
9         if char in vowels:
10             count += 1
11     return count
12 # Example usage:
13 input_string = "Hello world"
14 print(count_vowels(input_string)) # Output: 3
```

PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL PORTS

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+ . 'C:\Users\gbsgu\OneDrive\Documents\WindowsPowerShell\profile.ps1'
+ ~~~~~
+ CategoryInfo          : ObjectNotFound: (String) [], CommandNotFoundException
+ FullyQualifiedErrorId : CommandNotFoundException

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Number of vowels in 'Hello, World!': 3
PS C:\Users\gbsgu\OneDrive\Documents\Desktop\Assisted coding> C:\Users\gbsgu\AppData\Local\Programs\Python\Python315\python.exe "c:/Users/gbgsu/OneDrive/Documents/Desktop/Assisted coding/4.3(4).py"
3
PS C:\Users\gbsgu\OneDrive\Documents\Desktop\Assisted coding>
```

## Task 5: Few-Shot Prompting – File Handling

### Scenario

File processing requires clear logical understanding.

### Task Description

Use few-shot prompting to generate a Python function that:

- Reads a .txt file
- Counts the number of lines in the file
- Returns the line count

