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Batch no:38

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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.

```
34
35  def prime_checker(num):
36      if num <= 1:
37          return False
38      for i in range(2, int(num//2) + 1):
39          if num % i == 0:
40              return False
41      return True
42  number = int(input("Enter a number to check if it's prime: "))
43  if prime_checker(number):
44      print(f"{number} is a prime number.")
45  else:
46      print(f"{number} is not a prime number.")
```

```
PROBLEMS   OUTPUT   DEBUG CONSOLE   TERMINAL   PORTS

PS C:\Users\Bhanu Prasad> & C:/Python314/python.exe "c:/Users/Bhanu Prasad/Documents/AI LAb 2.py"
Enter a number to check if it's prime: 5
5 is a prime number.
PS C:\Users\Bhanu Prasad>
```

EXPLANATION:In the above code it checks the given number is prime or not

If the input is less than one then it returns false

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.

```python
def sum_of_array(arr):
    total = 0
    for num in arr:
        total += num
    return total
array = map(int, input("Enter numbers separated by spaces: ").split())
result = sum_of_array(array)
print("The sum of the array is:", result)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Bhanu Prasad> & C:/Python314/python.exe "c:/Users/Bhanu Prasad/Documents/
Enter numbers separated by spaces: 1 2 3 4
The sum of the array is: 10
```

EXPALNATION:

In the above code the if add the array elements then return the sum of them.

In case if we enter the charters then return the string is not allowed.

Task Description-3

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

```python
'''write the python code to extract the digits from the string and return as a list
if no digit is found in the string then return an empty list
the code should valid for all the string'''
def extract_digits(s):
    digits = []
    for char in s:
        if char.isdigit():
            digits.append(int(char))
    return digits
input_string = input("Enter a string: ")
result = extract_digits(input_string)
print("Extracted digits:", result)
```

```
PROBLEMS  OUTPUT  DEBUG CON   Open file in editor (ctrl + click)

PS C:\Users\Bhanu Prasad> & C:/Python314/python.exe "c:/Users/Bhanu Prasad/Documents/AI LAb 2.py"
Enter a string: abdxc123sadewsgt
Extracted digits: [1, 2, 3]
PS C:\Users\Bhanu Prasad>
```

EXPLANATION:

In the above code if we enter the combination of string and numerical values.

It ignores the string it return the only the numericals values as the list

Task Description-4

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

```
58  def count_vowels(s):
59      vowels = "aeiouAEIOU"
60      count = 0
61      for char in s:
62          if char in vowels:
63              count += 1
64      return count if count > 0 else False
65  input_string = input("Enter a string: ")
66  result = count_vowels(input_string)
67  print("Number of vowels:", result)
```

```
PROBLEMS    OUTPUT    DEBUG CONSOLE    TERMINAL    PORTS

PS C:\Users\Bhanu Prasad> & C:/Python314/python.exe "c:/Users/Bhanu Prasad/Documents/AI LAb 2.py"
Enter a string: orange
Number of vowels: 3
PS C:\Users\Bhanu Prasad>
```

EXPLANATION:

The above works to count the number of vowels in the input string.

If input string does not contains any vowels the it returns the false

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.

```python
print( Number of vowels: , result)
'''Write a python code to find the minimum of three numbers without using inbuilt functions.
if all the number are equal then return any one of them.
the code should valid for all the integer values.'''
def find_minimum(a, b, c):
    if a <= b and a <= c:
        return a
    elif b <= a and b <= c:
        return b
    else:
        return c
num1 = int(input("Enter the first number: "))
num2 = int(input("Enter the second number: "))
num3 = int(input("Enter the third number: "))
minimum = find_minimum(num1, num2, num3)
print("The minimum number is:", minimum)
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS

PS C:\Users\Bhanu Prasad> & C:/Python314/python.exe "c:/Users/Bhanu Prasad/Documents/AI LAb 2.py"
Enter a string: orange
Number of vowels: 3
PS C:\Users\Bhanu Prasad> & C:/Python314/python.exe "c:/Users/Bhanu Prasad/Documents/AI LAb 2.py"
PS C:\Users\Bhanu Prasad> & C:/Python314/python.exe "c:/Users/Bhanu Prasad/Documents/AI LAb 2.py"
Enter the first number: 999
Enter the second number: 999
Enter the third number: 999
The minimum number is: 999
PS C:\Users\Bhanu Prasad>
```

EXPLANATION:

In the above codde the find sthe least element from the input.

If all the three number are same then return the same value