

School of Computer Science and Artificial Intelligence

Lab Assignment 4.2

Program	: B. Tech (CSE)
Course Title	: AI Assisted Coding
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Task 1

Prompt: Write a python program to find the number is prime or not

Code:

```
def is_prime(num):  
    if num <= 1:  
        return False  
    for i in range(2, int(num**0.5) + 1):  
        if num % i == 0:  
            return False  
    return True  
number = int(input("Enter a number: "))  
if is_prime(number):  
    print(f"{number} is a prime number.")  
else:  
    print(f"{number} is not a prime number.")
```

Output:

```
PS C:\Users\BURRA SRUTHI\OneDrive\Desktop\3_2\AI\AI_code> & "C:\Users\BURRA SRUTHI\AppData\Local\Programs\Python\Python313\python.exe" "c:/Users/BURRA SRUTHI/OneDrive/Desktop/3_2/AI/AI_code/prime.py"  
Enter a number: 3  
3 is a prime number.
```

Explanation:

This program defines a function `is_prime` that checks if a number is prime or not.

It takes an integer input from the user and prints whether the number is prime or not.

Task2:**Prompt:**

Generate a function that calculates the sum of elements in a list using the python

For Example:

Input:[1,2,3,4]

Output:10

Code:

```
def sum_of_list(elements):
    total = 0
    for element in elements:
        total += element
    return total
numbers = [1, 2, 3, 4]
result = sum_of_list(numbers)
print(f"The sum of the list {numbers} is {result}.")
```

Output:

```
PS C:\Users\BURRA SRUTHI\OneDrive\Desktop\3_2\AI\AI_code> & "C:\Users\BURRA SRUTHI\AppData\Local\Programs\Python\Python313\python.exe" "c:/Users/BURRA SRUTHI/OneDrive/Desktop/3_2/AI/AI_code/prime.py"
```

```
The sum of the list [1, 2, 3, 4] is 10.
```

Explanation:

The code defines a function `sum_of_list` that calculates the sum of all numbers in a list. It loops through each element, adds it to a total, and returns the sum. The list [1, 2, 3, 4] is passed to the function, and the result 10 is printed.

Task 3**Prompt:**

Generate a function that extracts digits from an alphanumeric string using python

Example 1:

Input:"a1b2c3"

Output: [1,2,3]

Example 2:

Input: "abc"

Output: []

Example 3:

Input:"123"

Output: [1,2,3]

Code:

```
def extract_digits(input_string):
    digits = []
    for char in input_string:
        if char.isdigit():
            digits.append(int(char))
    return digits
input_str = "a1b2c3"
result = extract_digits(input_str)
print(f"The digits extracted from the string '{input_str}' are: {result}.")
```

Output:

```
PS C:\Users\BURRA SRUTHI\OneDrive\Desktop\3_2\AI\AI_code> & "C:\Users\BURRA SRUTHI\AppData\Local\Programs\Python\Python313\python.exe" "c:/Users/BURRA SRUTHI/OneDrive/Desktop/3_2/AI/AI_code/prime.py"
The digits extracted from the string 'a1b2c3' are: [1, 2, 3].
```

Explanation:

This code takes a string, finds all the numeric digits in it, converts them to integers, stores them in a list, and prints the list. It effectively filters out numbers from a mixed string.

Task 4:**Zero shot Prompt:**

Generate a function that counts the number of vowels in a string using python

Code:

```
def count_vowels(s):
    vowels = "aeiouAEIOU"
    count = 0
    for char in s:
        if char in vowels:
            count += 1
    return count
# Example usage:
text = "Hello, Python!"
print("Number of vowels:", count_vowels(text))
```

Output:

```
PS C:\Users\BURRA SRUTHI\OneDrive\Desktop\3_2\AI\AI_code> & "C:\Users\BURRA SRUTHI\AppData\Local\Programs\Python\Python313\python.exe" "c:/Users/BURRA SRUTHI/OneDrive/Desktop/3_2/AI/AI_code/prime.py"
Number of vowels: 3
```

Few shots Prompt:

Generate a function that counts the number of vowels in a string using python

Example 1:

Input:"Hello World"

Output:3

Example 2:

Input:"Python"

Output:1

Example 3:

Input:"xyz"

Output:0

Code:

```
def count_vowels(s):
    vowels = "aeiouAEIOU"
    count = 0
    for char in s:
        if char in vowels:
            count += 1
    return count
print(count_vowels("Hello World"))
print(count_vowels("Python"))
print(count_vowels("xyz"))
```

Output:

```
PS C:\Users\BURRA SRUTHI\OneDrive\Desktop\b_2\AI\AI_code> & "C:\Users\BURRA SRUTHI\AppData\Local\Programs\Python\Python313\python.exe" "c:/users/BURRA SRUTHI/OneDrive/Desktop/b_2/AI/AI_code/prime.py"
3
1
0
```

Explanation:

- In **zero-shot prompting** (first code), the function `count_vowels` is given a single string "Hello, Python!" as input, and the model counts the vowels without any additional examples. The output is generated directly from this one case.
- In **few-shot prompting** (second code), the same function is tested on multiple examples like "Hello World", "Python", and "xyz", showing the expected output for each. These examples help the model understand the pattern and generalize better to new inputs.

Task 5:**Prompt:**

Generate a function that find the minimum of three numbers without using the python built-in min() function

Example 1:

Input:(3,1,2)

Output:1

Example 2:

Input:(-1,0,1)

Output:-1

Example 3:

Input:(5,5,5)

Output:5

Code:

```
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
print(find_minimum(3, 1, 2))
print(find_minimum(-1, 0, 1))
print(find_minimum(5, 5, 5))
```

Output:

```
PS C:\Users\BURRA SRUTHI\OneDrive\Desktop\b_2\AI\AI_code> & "C:\Users\BURRA SRUTHI\AppData\Local\Programs\Python\Python313\python.exe" "c:/Users/BURRA SRUTHI/OneDrive/Desktop/b_2/AI/AI_code/prime.py"
1
-1
5
```

Explanation:

The function find_minimum takes three numbers as input and compares them using conditional statements to determine the smallest number among them. It returns the minimum value found.