Homework Week01 - Hongxin Li

1. Display Fibonacci Series upto 10 terms

```
n_terms = 10

n1, n2 = 0, 1
count = 0

if n_terms == 1:
   print("Fibonacci sequence upto", n_terms, ":")
   print(n1)
else:
   print("Fibonacci sequence:")
   while count < n_terms:
      print(n1, end=" ")

      # Update values
      nth = n1 + n2
      n1 = n2
      n2 = nth
      count += 1
```

2. Display numbers at the odd indices of a list

```
numbers = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]


print("Numbers at odd indices:")

# range (start at 1, stop at the length of the list, step 2)
for i in range(1, len(numbers), 2):
   print(f"Index {i}: {numbers[i]}")
```

3. string = """

I have provided this text to provide tips on creating interesting paragraphs.
First, start with a clear topic sentence that introduces the main idea.
Then, support the topic sentence with specific details, examples, and evidence.
Vary the sentence length and structure to keep the reader engaged.
Finally, end with a strong concluding sentence that summarizes the main points.
Remember, practice makes perfect!
"""
#Your task is to count the number of different words in this text

```
text = """
I have provided this text to provide tips on creating interesting paragraphs.
First, start with a clear topic sentence that introduces the main idea.
Then, support the topic sentence with specific details, examples, and evidence.
Vary the sentence length and structure to keep the reader engaged.
Finally, end with a strong concluding sentence that summarizes the main points.
Remember, practice makes perfect!
"""

import string

# str.maketrans(replace,replace with, delete)
cleaned_text = text.translate(str.maketrans('', '', string.punctuation)).lower()

# splits all the words
words = cleaned_text.split()

# Find unique words using a set
unique_words = set(words)


unique_word_count = len(unique_words)

print(f"Number of different words in the text: {unique_word_count}")
# print(f"Unique words: {unique_words}")
```

4. Write a function count_vowels(word) that takes a word as an argument and returns the number of vowels in the word

```
def count_vowels(word):


    vowels = "aeiouAEIOU"

    count = 0

    for char in word:
        # Check if the character is a vowel
        if char in vowels:
            count += 1

    return count


word = "Good afternoon everyone!"
print(f"The number of vowels in '{word}' is: {count_vowels(word)}")
```

5. Iterate through the following list of animals and print each one in all caps. animals=['tiger', 'elephant', 'monkey', 'zebra', 'panther']

```
animals = ['tiger', 'elephant', 'monkey', 'zebra', 'panther']


for animal in animals:
    print(animal.upper())
```

6. Write a program that iterates from 1 to 20, printing each number and whether it's odd or even.

```
for num in range(1, 21):
    if num % 2 == 0:
        print(f"{num} is even")
    else:
        print(f"{num} is odd")
```

7. Write a function sum_of_integers(a, b) that takes two integers as input from the user and returns their sum.

Additional optional problems are in the jupyter notebook uploaded on github

```
def sum_of_integers(a, b):
    return a + b

# get input from the user
a = int(input("Enter the first integer: "))
b = int(input("Enter the second integer: "))


result = sum_of_integers(a, b)
print(f"The sum of {a} and {b} is: {result}")
```