	Pimpri Chinchwad Education Trust's Pimpri Chinchwad College of Engineering	
Assignment No 08		

Title: File Handling in python

Problem Statement: Write a Python program to count the total characters, total words, total lines, and frequency of given words in the file.

Objective: To make students familiar with the use of file operations in Python.

Outcome: Use of file handling operations to implement logic in programs.

Software Requirements: Windows/Linux (Ubuntu/Fedora) Operating System, Python Tool, Python IDE Anaconda/ Jupyter notebook/ Google Colab/ any similar

Theory:

Explain below points considering the description, syntax, sample code/ example etc.

- Introduction to files
- Advantages and Disadvantages of file handling
- Modes of file handling
- open files,
- read, readline, readlines
- write, writeline writelines
- closing the file
- with statement
- append the file.

Algorithm:

Initialize Variables:

- total_lines = 0 (To count the total number of lines)
- total_words = 0 (To count the total number of words)
- total_characters = 0 (To count the total number of characters)
- word_frequencies = {word1: 0, word2: 0, ..., wordN: 0} (Dictionary to track frequency of each word to search)

- **Open the file:**

- Open the file in read mode.

- **Process Each Line:**

- Read the file line by line until the end of the file.

- For each line:

    1. **Count Total Lines:**

        - Increment total_lines by 1 for each line.
    2. **Count Total Characters:**

        - Add the length of the line (including spaces and punctuation) to total_characters.
    3. **Count Total Words:**

        - Split the line into words (by spaces) and count the number of words.
        - Increment total_words by the number of words in the line.
    4. **Count Frequency of Given Words:**

        - For each word in word_frequencies:
            - Convert the line to lowercase (if case-insensitive comparison is desired).
            - Count how many times the word appears in the line (use word boundaries to avoid partial matches).
            - Increment the frequency count of that word in the word_frequencies dictionary.

- **End of File:**

- Once the file is fully processed, print the results:
    - Total lines
    - Total words
    - Total characters
    - Frequency of each word in the list

Input & Output: Students will attach code and output print

Conclusion: Students will write interpretation of the understanding related to the implemented assignment