

Solution:

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# Problem 1 Solution: Calculate Average Grade from File

# Step 1: Open and read the file
in_file = "grades.txt"
myfile = open(in_file)
total_grade = 0
num_students = 0

# Step 2: Calculate total grade and number of students
for line_of_text in myfile:
    student_info = line_of_text.split()
    grade = int(student_info[1])
    total_grade += grade
    num_students += 1

myfile.close()

# Step 3: Calculate and print the average grade
if num_students > 0:
    average_grade = total_grade / num_students
    print(f"Average grade: {average_grade:.2f}")
else:
    print("No students found in the file.")
```

Solution:

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# Problem 2 Solution: Word Count in a File

# Step 1: Open and read the file
in_file = "essay.txt"
myfile = open(in_file)
word_count = 0

# Step 2: Count the total number of words
for line_of_text in myfile:
    words = line_of_text.split()
    word_count += len(words)

myfile.close()

# Step 3: Print the word count
print(f"Total word count: {word_count}")
```

Solution:

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# Problem 3 Solution: Reverse File Content

# Step 1: Open and read the file
in_file = "quotes.txt"
myfile = open(in_file)
lines = []

# Step 2: Collect all lines from the file
for line_of_text in myfile:
    lines.append(line_of_text.strip())

myfile.close()

# Step 3: Print the lines in reverse order
for line in reversed(lines):
    print(line)
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Solution:

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# Problem 4 Solution: Search for a Word in a File

# Step 1: Open and read the file
in_file = "log.txt"
myfile = open(in_file)
word_to_search = input("Enter a word to search: ").lower()
count = 0

# Step 2: Count occurrences of the word
for line_of_text in myfile:
    words = line_of_text.lower().split()
    count += words.count(word_to_search)

myfile.close()

# Step 3: Print the count
print(f"The word '{word_to_search}' appears {count} times in the file.")
```