Sample text file content (data.txt):

```
The quick brown fox jumps over the lazy dog.
Python is a versatile programming language.
Data Science is a growing field.
Artificial Intelligence and Machine Learning are interconnected fields.
File handling in Python is simple and efficient.
Reading and writing to files are common operations.
Text files are widely used for storing information.
Each line in a text file can represent a new record or entry.
Learning Python can open up many career opportunities.
Code readability is an important aspect of Python.
The Zen of Python emphasizes simplicity and clarity.
Automation using Python can save a lot of time.
Large datasets are often stored in text files or databases.
Python has extensive library support for various domains.
Opening a file in Python is done using the open() function.
File modes like 'r', 'w', 'a', and 'b' determine the operation type.
Error handling is important when dealing with files.
Always close a file after performing file operations.
With statements help manage file resources efficiently.
Reading a file line by line is memory efficient.
File handling is a fundamental skill for any programmer.
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Problem Statements

1. Reading the entire content of the file

Write a Python program to read and display the entire content of "data.txt".

2. Counting the number of lines in the file

Write a Python program to count and display the number of lines in "data.txt".

3. Searching for a keyword in the file

Write a Python program to search for a specific keyword (e.g., 'Python') in "data.txt" and display the lines containing the keyword.

4. Displaying the first N lines of the file

Write a Python program to display the first 5 lines of "data.txt".

5. Finding the longest line in the file

Write a Python program to find and display the longest line in "data.txt".

6. Counting the occurrences of a word

Write a Python program to count and display the number of occurrences of a specific word (e.g., 'file') in "data.txt".

7. Reading lines into a list

Write a Python program to read all lines from "data.txt" into a list and print the list.

8. Displaying lines with their line numbers

Write a Python program to display each line from "data.txt" with its corresponding line number.

9. Reversing the lines of the file

Write a Python program to read "data.txt" and display its lines in reverse order.

10. Checking if the file is empty

Write a Python program to check if "data.txt" is empty or not.